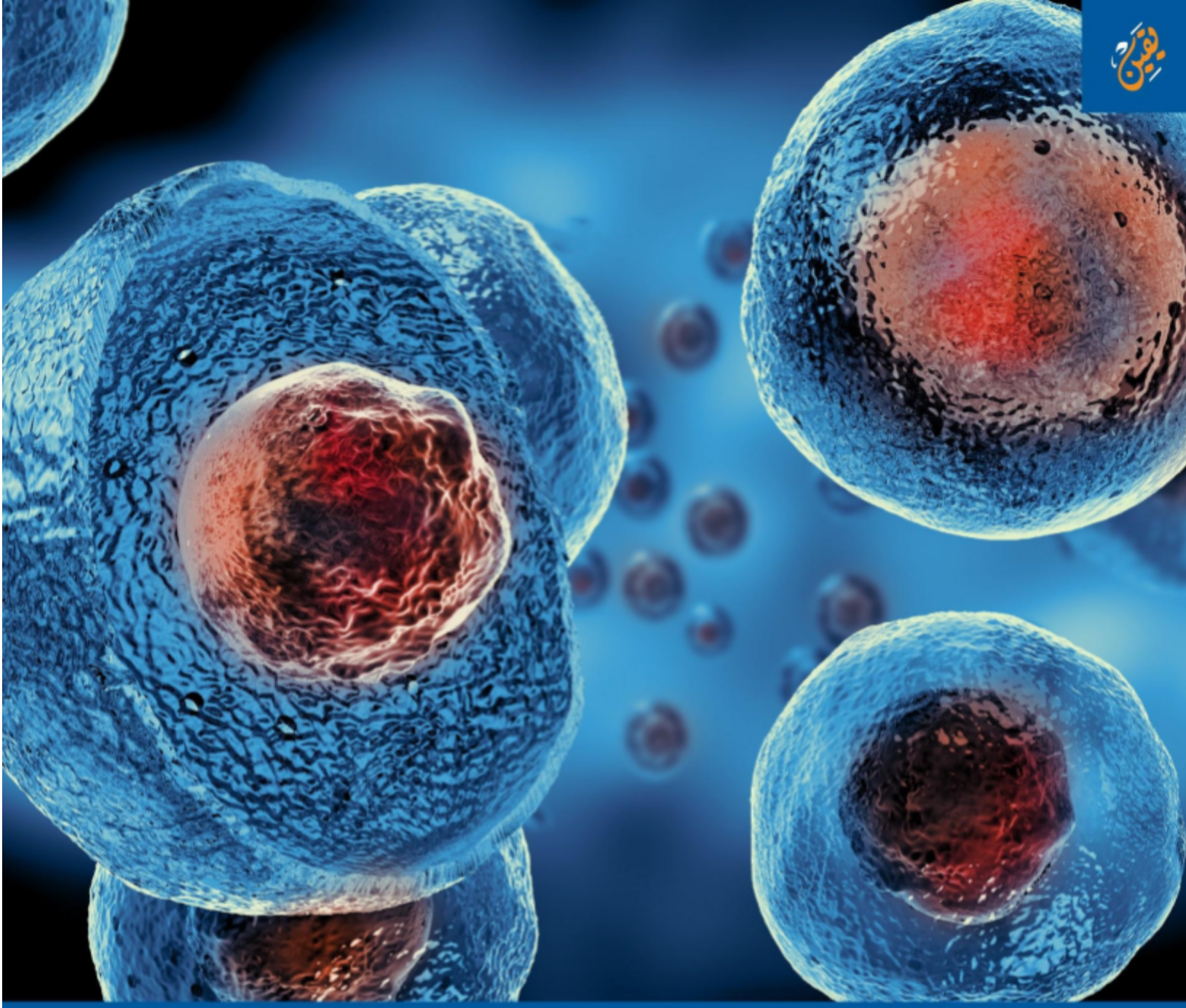

Facts vs. Interpretations: Understanding Islam & Evolution

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Abstract

The purpose of this essay is to offer an Islamic perspective on the theory of evolution. As we discuss this particular theory, we also aim to highlight broader issues related to Islam and science. Indeed, we shall note important principles regarding Qur'anic interpretation, emphasize the need for replacing blind faith with grounded faith, and encourage discernment so as to differentiate between facts and interpretations of the facts such as the materialist/naturalist philosophy that often underlies scientific interpretations. In a sense, the theory of evolution is just a stepping stone for us to invite Muslims (and those who are open to the belief perspective) to reflect more deeply about the purpose of life, the universe, and the meaning of God's guidance and its relevance to our life. The Qur'an does not predetermine the conclusions of scientific study but rather calls for honest and earnest analysis of the data, rather than dogmatic speculation. To the extent that such factual analysis is found in "evolutionary science" it can have no censure from a Qur'anic perspective. On the other hand, *in so far as the theory of evolution insists on baseless, dogmatic claims such as life being the result of unpurposeful factors and things acting simply out of selfish impulses, it will clash with the Quranic perspective.* Of course, such baseless and dogmatic claims about the emergence of life by blind physical processes and randomness remain empirically unsubstantiated and incoherent, despite their popular acceptance and politicized promotion.

Key Principles

In order to analyze the theory of evolution from an Islamic perspective, let's first lay down some essential principles that are important to establish a sound foundation. Otherwise, a problematic theoretical framework will inevitably distort even the best data.

Faith is not Blind

Contrary to some popular opinion, genuine faith in God cannot be blind. Rather, according to the Qur'an, genuine faith requires testimony (*shahada*) that is based on clear evidence that satisfies both the heart and the mind.[1]

Interpreting the Qur'an

In order to interpret the Qur'an, we need first to define it. To simply say, "I believe it's God's word" is not sufficient in defining the Qur'an or interpreting it. As the Qur'anic exegete and theologian Bediuzzaman Said Nursi (d. 1960) emphasizes, defining the Qur'an is essential in interpreting it. When we are conscious of Who is speaking, for what purpose, and to whom, we can interpret the text much more accurately and insightfully.[2]

The purpose of the Qur'an is not to give us technical information about the world, because God has given us senses and intellect for us to gather technical information. A good reading of the Qur'an is only possible by reading its parts in view of its overarching purpose of guiding us. Within this purpose, we can further specify the purposes of the Qur'an. Indeed, a number of classical scholars of Islam have talked about *purposes* of the Qur'an (*maqasid al-Qur'an*). While slightly different specific lists have been constructed, in general, it has been agreed upon that the Qur'an is about faith in one God and the establishment of human life in connection to and in response to this God, Who is known through His different attributes, such as mercy, power, and wisdom.

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[1] There are many Qur'anic passages that call for reflecting on the universe. For a more detailed discussion of the Qur'anic approach to evidence as well as Qur'anic interpretation discussed in this section, see Yamina Bouguenaya, *Living with Genuine Tawhid: Witnessing the Signs of God through Qur'anic Guidance*, Receiving Nur Publications, 2017. Throughout this article, we gratefully acknowledge our indebtedness to Said Nursi's works, *Risale-i Nur* [Epistles of Light]. Its major volumes have been translated by Sukran Vahide into English and are also available in electronic format at www.saidnur.com/english. See also the forthcoming *Living the Qur'an: Selections on Tawhid from Said Nursi's Epistles of Light* (Gorgias Press, 2019).

[2] For instance, if it is my boss who tells me 'you are fired,' it will have a grave consequence, whereas if it is my friend, it might be just a tease. Even in the context of such a simple human utterance, the meaning of the sentence changes depending on by whom and for what purpose it is being said. In understanding the Qur'an, we need even more awareness of its purposes.

Said Nursi, an important Qur'anic exegete whose works we have benefited substantially from, emphasizes that the Qur'an's very purpose is to guide us in answering core human questions about the meaning of existence and to solve the "riddle" of the universe. More specifically, the purpose of the Qur'an is to establish four major points: (1) *tawḥid*, or the oneness of God—that is, the Oneness of the Source of all the power, beauty, and perfection reflected in the world—and *'ubudiyya*, the worshipful response to the One; (2) prophethood (*al-risālah*); (3) resurrection (*hashr*); and (4) justice (*'adāla*).

Thus, we need to bear in mind the fundamental features of the Qur'an in order to interpret it coherently. The Qur'an is a discourse from the Eternal One addressed to human beings and it reveals the meaning and purpose of our human existence within this cosmos. The Qur'an provides the keys to understanding reality, without which even the best minds and hearts could not comprehend. Without Divine guidance, human beings are like the blind men touching an elephant[3]—we can sense some things but we cannot understand the reality of existence. With the Qur'an, human beings can understand the reality of existence. The Qur'an coheres with reality in such an amazing way that it shows that only the Maker of the Heavens and the Earth could have sent this book.

None of these above statements regarding the Qur'an are to be accepted on blind faith. Rather, they are all to be confirmed by reason, heart, and experience. Witnessing the Qur'an's truthfulness is like trying out a key. Without the right key, we cannot open a locked door. And, with the right key (i.e., with the message of the Qur'an), we open the door (i.e., discover the truth of universe) *and* thereby confirm that indeed the key is the right one.

Now, if it ever seems that the Qur'an clashes with logic or facts, there are only two possibilities: (1) either what we thought was logical and factual is not really so; or (2) we are not interpreting the Qur'an correctly.

[3] In the famous parable, a group of blind men encountering an elephant come to different conclusions about the animal, the one touching its trunk presumes it to be a snake, the one touching its ear presumes it to be a fan, the one touching its leg presumes it be a tree trunk, and so on. Originating from India, this parable was cited by Muslim scholars like Abu Hamid al-Ghazali in *Ihya' 'Ulum al-din* and Jalal al-Din al-Rumi in his *Mathnavi*.

According to a classical Qur'anic interpretation principle, "If the Qur'an and reason seem to contradict, one needs to reinterpret the Qur'an on the basis of reason. But the reason with which we interpret the Qur'an must be a *sound* reason."[4] This principle has direct implications for the relation between the Qur'an and modern science. There can be no contradiction between a scientific fact and the Qur'an, as long as we are aware of the purposes of the Qur'an as well as the ambiguities of scientific discourse.

What is 'Science'?

Many people think that science is all about facts 'out there.' In reality, science is a practice that involves a great deal of interpretation in addition to observation. Even at the heart of the "hardest" sciences, like physics, scientists are always postulating models and interpretive frameworks to represent and make use of the facts that they observe and measure. To give a simple example, the theory that masses pull each other is a way of *representing* the fact that things move toward each other. In the case of the earth, this representation helps us talk about the way things fall down to earth. "It is gravity pulling things down," we say. Now, as long as this representation enables us to measure and predict things (like how quickly and with what speed things will fall down to the ground), this is a useful model. One should, however, not confuse the model with a truth-statement. The "law of gravity" is a concept that physicists coined so as to represent the empirical results in formulas. There is actually no observed entity called "the law of gravity" that exists independently of the falling objects and makes them fall.

Indeed, the very concept of "laws of nature" is itself grounded in metaphysical principles (e.g., the uniformity of nature) that are implicit presuppositions of science. And even though these metaphysical presuppositions influence the practice of science and interpretation of data profoundly, they are seldom critically assessed because they remain hidden or ignored. Scientists may be reluctant and unwilling to face these metaphysical assumptions or to question them because they

[4] For a detailed discussion of principles of Qur'anic interpretation, see: Yamina Bouguenaya and Isra Yazicioglu, "Said Nursi's Qur'anic Hermeneutics, "in *The Companion to Said Nursi Studies*, ed. by Ian Markham & Z. Sayilgan, Pickwick Publications, 2017, 51-66.

often believe and maintain that scientific knowledge has no room for metaphysics. In other words, metaphysical assumptions often go undetected even though they lie at the core of science. In short, scientific knowledge includes metaphysical principles about the world that are untestable and independent of scientific evidence; and although many scientists may view metaphysics as a threat to scientific rigor, science does accept (albeit implicitly) such principles without evidence, despite claims to the contrary.[5]

If even the simplest non-controversial theory like the law of gravity in physics involves interpretation, then you can guess how theories in biology involve even more interpretation. In biology, we are not talking only about masses and motion as in physics, but also about life and life forms. Life is exceedingly more complex than particles and masses as it involves incredible diversity, change, history, motivations, instincts, and so on.

Moreover, when we talk about the history of life on earth, the *overwhelming majority* of events that have taken place in history are inaccessible to us. Furthermore, we have no way of repeating them in the lab. We should take note that this fact alone makes the subject of the history of life very different than physics or chemistry, where we can, for instance, currently observe the falling of objects in the lab or re-run a chemical experiment.

It is important to distinguish between a scientist's personal views and their scientific findings. Just because someone is expert in a particular technical issue does not mean that they are an expert in understanding its nature, let alone reality

[5] Whether implicitly or explicitly, metaphysics is and has been part of science and it can and does contribute to the advancement of science. For instance, in the case of Muslim scientists, science historian Rom Landau wrote: "The Muslims who believed that God reveals Himself in this world at every moment of existence and that this world is constantly created by Him, regarded the universe not as finite, not as being, but as becoming. In Mathematics, it was al-Biruni, the great eleventh century mathematician, who finally expressed that conviction by elevating numbers to the status of elements of function. Function, however, implies movement, dynamism… Al Biruni, by treating numbers as elements of function, divorced them from their static and purely spatial character, and linked them to time…The change from the Greek conception of a static universe to a new dynamic one was initiated by al Khwarizmi (780-850), the creator of modern algebra, the first mathematician to make algebra an exact science." Rom Landau, *Arab Contribution to Civilization* (California: American Academy of Asian Studies, 1958), 31.

as a whole.[6] (For instance, physicists can talk about time or energy in technical terms, but that does not mean they understand their reality, let alone the meaning of existence.)

The Qur'an Invites Us to Observe and Reflect

As we noted in the beginning, the aim of the Qur'an is to disclose to us the meaning of existence. The Qur'an repeatedly refers to the universe, including human nature, so as to show us how it points to God, the Creator that necessarily transcends His creation. The God of the Qur'an is an Ever-Present Being, Who continuously creates and sustains. The universe is like a dynamic book, constantly revealing the qualities of its Creator and Sustainer; i.e., God. These revealed qualities are called *al-asma al-husna* in the Qur'an, commonly translated as "beautiful names." Hence, God is described as infinitely knowing, powerful, merciful, wise, beautiful, and so on. The universe, including all forms of life, point to infinite knowledge, power, compassion, wisdom, and beauty, and thereby indicate the beautiful names of God.

The Qur'an teaches us *how* to read this dynamic book, and *how* to observe, witness, and confirm that everything in existence reveals the attributes of its Creator.[7] It constantly calls us to observe the world and gives us cues on how to reflect. It teaches us how to see that the universe has a wise, powerful, caring Creator, and that things do not happen on their own or randomly. Rather, whoever makes one thing must be the Maker of all.

The Qur'an calls us to reflect on a tiny fly, for instance (Qur'an 22:73). We realize that the fly cannot be the result of random insentient processes, lacking creative

[6] Yazicioglu, "Perhaps their Harmony is not that Simple: Said Nursi on the Qur'an and Modern Science," Theology and Science, (2013), 11:4, [339–355], 346. See also Yamina Bouguenaya, "The Hermeneutical Dimension of Science," in The Muslim World, Vol. LXXXIX, No. 3-4, July-October 1999. For a helpful and accessible overview of Islam and science, see Yamina Bouguenaya, "Islamic Philosophy of Science," accessible at https://www.receivingnur.org/islamic-philosophy-of-science.html

[7] See, for instance, Qur'an, 2:264, 7:107–8, 13:3, 16:65ff., 21:22; 22:73; 29:42; 30:20ff.; 31:28; 56:57-70. Indeed, the Qur'an calls us to question our mistaken interpretations of reality. We often think that things happen on their own. Or we think insentient and lifeless things, such as water, produce intricate life in a plant, simply due to its proximity to it. The Qur'an encourages us to question these, by making us ask: "Can this thing be really the maker of life? Can this ignorant substance, water, really be source of intricate design and beauty and benefit in this plant? Does it have the qualities of knowledge, creativity, wisdom, power, to be its creator?"

power and comprehensive knowledge. For a fly comes into being in perfect harmony within itself and with the rest of the universe. A fly breathes, eats, and flies within the context of all the physical and chemical events in the world that follow orderly patterns (or "laws" as we call them in science), from the oxygen cycle to sunshine, to the growth of plants, to an incredible genetic replication pattern that is shared by other living beings. Whoever planned and gave existence and life to one fly must be aware of all the rest of the world wherein the fly exists. He must have the capacity to bring forth a living fly from all over this cosmic web. Indeed, whoever makes one fly must be the maker of all life in the planet, and the planet within its bigger cosmic system.[8] It is of course not possible to explain here in detail the Qur'anic guidance pertaining to this reasoning. Here, we just offer a glimpse so as to highlight the need for reflecting on nature and taking the Qur'anic cues seriously.[9]

The Qur'an Calls Us to Reflect on the Here and Now

To reiterate, the Qur'an calls us to observe more attentively and reflect carefully to recognize the truth of existence. Another important aspect of the Qur'anic call is that it repeatedly invites us to reflect about things happening before our very eyes. In other words, from a Qur'anic perspective, we are not called to simply believe in a Creator who made things in the beginning, set the stage, and left things to somehow unfold on their own. Rather, we are called to believe in the Creator and Sustainer of all things at all times, including *here and now*. The Qur'an calls us to look at things happening before our eyes *right now*: life flourishing in gardens, babies being formed in the wombs, ships sailing in the sea, and so on. The Qur'an calls us to reflect on how all of these events that we witness require immense knowledge, power, and care to take place. They cannot be created by ignorant, unconscious and emotionless, i.e., purposeless, (or in Qur'anic vocabulary, "blind" and "deaf," as in Qur'an 7:195) natural causes. The finite world in its order and

[8] For a more detailed Qur'anic reflection on nature through this verse on the fly, see Receiving Nur animation: "The Miracle of the Fly & How It Glorifies its Maker" https://www.youtube.com/watch?v=w0xrevmZUN0

[9] For further details, we recommend Said Nursi's works, such as 22nd Word, 33rd Word in *Words* and 23rd Flash, in *Flashes,* tr. by Sukran Vahide. Also relevant is Nursi, *The Supreme Sign: The Observations of a Traveller Questioning the Universe,* tr. by Hamid Algar.

diversity points to the enduring qualities of the Infinite One, God, *here and now*. Therefore, in order to believe in God in the Qur'anic sense, we do not have to go back to the beginning of first life on earth. Instead, take any life budding and continuing before your eyes *now* and reflect carefully with the cues provided by the Qur'an. If we pay careful attention and reflect, we can witness the reality: this living being is a testimony to the existence of The Wise, Powerful, Knowing, and Caring Creator.

Such accessibility and reasonability of the Qur'anic discourse means that it is not dependent on speculations and theories about what might have happened millions of years ago in order to recognize the truth (to be sure, scientific study can be useful in understanding and appreciating the Creator, if honestly and insightfully developed). Similarly, the Qur'an can have no clash with genuine empirical data and reasonable interpretations of it. To reiterate, in so far as science works with data and honest and earnest analysis, rather than speculations, the Qur'an gives it ample freedom to discover, postulate, test, and calculate. It does not predetermine scientific study's results as it is neither threatened by it nor dependent on it. The theory of evolution is no exception. Insofar as it is based on an honest and open-minded inquiry, it can have no censure from a Qur'anic perspective. However, if it insists on unjustifiable and unfounded claims such as life being the result of random (i.e., unpurposeful and haphazard) factors and all life acting simply out of selfish impulses, it will clash. Of course, such claims that clash with the Qur'an are neither neutral nor scientific, even if they are stated in the name of science. It is essential that we distinguish between science and materialistic interpretations dressed up as science.

Having set up this framework, let us now turn to the theory of evolution.

The Theory of Evolution and the Qur'an

In order to understand how the Qur'an relates to the theory of evolution, we need to understand the theory a bit more clearly. First, let's dispel a popular myth:

The theory of evolution is not 'just a theory,' it is a proven fact. It is like the theory of gravity in physics.

This is simply inaccurate. The theory of evolution is far from being established as a fact or even a theory. How so? Let's explain.

To start with, let's note that the theory of evolution has some factual basis. The theory of evolution makes use of factual evidence such as:

✓ Species that are now extinct existed a long time ago; e.g., dinosaurs.

✓ The age of the Earth spans billions of years.

✓ In addition to incredible diversity in life forms, there is also incredible similarity across species.

✓ Occasionally mistakes in the genetic 'copying' process happen. Most of these mistakes are corrected by the review units in the cell, which detect and excise the mistaken parts and replace them with correct ones. The genetic mistakes that escape this review process and remain are called mutations (these mutations are usually either silent, that is they make no difference to the life of the organism, or they are harmful).

These are observations that can be taken as facts (at least as far as we can know at this point in time). However, the theory of evolution, like all theories, involves not only facts but also interpretations of those facts. Therefore, it is inaccurate to say that the theory of evolution is a fact beyond reasonable doubt.

For instance, the following are questionable interpretations involved in the theory:

o Similarity across species must be due to *all* life forms evolving from *one* thing. [Note the vastness of this claim, not surprisingly there is no scientific observation that can prove such a major speculation.]

- Over millions of years, a consistent progress of creatures from one cell to multi cells, from bacteria to human beings must have happened. [Again, there is no observation that can prove this claim.]

- All species must have emerged through chance and without any purposeful cause. Mistakes in genetic code (i.e., mutations) and environmental factors, such as heat or pressure, created various species. The organisms with mutations that happen to fit the environment best survive: "the survival of the fittest." [This is the weakest part of the theory as will be discussed in the next section. Moreover, the fossil record and other facts challenge such a claim, as will be noted in the final section.]

- Life is based on selfish struggle. There is constant struggle between life forms and within each species. Even a parent's care for its infant comes from its selfish urge to ensure the survival of its own DNA.[10]

None of the above claims can be deduced or inferred from observed facts. They are all interpretations and conjecture open to various degrees of questioning and disagreement. Moreover, there are a lot of facts that challenge such interpretations contained in the theory of evolution, some of which we mention in the last part of this essay. For now, we shall turn to the weakest aspect of the theory of evolution that also happens to lie at its core.

The Weakest Point of the Theory of Evolution

The most foundational claim of the theory of evolution is also the weakest. This is the claim that the emergence of species on earth happened without any purposeful cause. Simply put, the theory claims that if you combine a messy cosmic soup of chemicals with changing climate conditions, and wait for a very long time, you can eventually have amazingly purposefully constituted species, each well-adjusted to

[10] Such a claim ignores the *fact* of immense cooperation and harmony within nature. Also, attributing "selfishness" and "concern for survival" to a chemical structure like the DNA is not a factual statement, nor does it not become scientific simply because it is claimed by a biologist such as Richard Dawkins.

its environment! To put it mildly, this claim contradicts both reason and empirical data.[11]

This insistence on randomness/purposelessness has been a key element of the theory from the very beginning. When the theory of evolution was first postulated, there was no reference to genetic mutations as genes were not well-known. These days, however, it is claimed that genetic mutations are the key factor in the emergence and sustaining of all life forms. That is, the theory assumes that somehow there was a first cell with its DNA (!) and then claims that random (i.e., unintentional, purposeless) mistakes in its genetic code and environmental conditions (such as selective pressures) are responsible for highly organized and coordinated life processes of all cells, organisms, and species. This is not a reasonable claim at all. How can lack of purpose and blind chance be responsible for highly organized, and meaningfully complex structured life forms that exist in harmonious interconnection with the rest of the universe? Such a claim is far from being scientific and it is unacceptable on empirical, logical, and mathematical grounds.

Indeed, the more one learns about the biological constitution of living beings, the more it becomes clear that it is illogical to conclude that all these purposefully working structures are the result of pure luck and blind chance. Just for a second think of blood vessels, nerves, the digestive system, and the urinary tract in a human being. Alternatively, you can take a seemingly "simpler" being's organs like an insect's eye, a bee's tongue, or a virus's smart apparatus to take over a human cell. In each of these cases, and wherever one looks, one sees that incredible wisdom, planning, power and knowledge are involved in the way things come into being and live.

It is not only that we see things arranged purposefully, but also that they are in great dynamic cooperation and harmony with the rest of the body and with other species. Such adjustment is only possible with comprehensive knowledge and

[11] For a brief but strong refutation of the view of chance explained in accessible language, see Said Nursi's "Treatise on Nature," (*Flashes*, 23rd Flash, 232-254, tr. by Sukran Vahide); see esp. pp. 235-236.

power. It cannot be the result of ignorant beings acting cluelessly, even if we were to grant that a cell or a living being somehow carries a strong wish to survive (of course, we do not need to grant that, because the presence of such a helpful desire itself cannot be explained by blind chance, either).[12]

In addition to random mutations, "environment" is invoked as an explanation. And yet environmental conditions do not have purpose or knowledge. How can they then be responsible for a bee's wing, the sonic radar of a bat, the liver of a human being, and so on? Setting aside innumerable major examples, let us take a small simple example; let us look into a case that involves a slight environmental change and a slight change in an organism. Our blood cells increase in number when we go up in altitude. At higher altitude, there is less oxygen and therefore we need more air carried by our blood cells. The increase in red blood cells is thus a purposeful and caring act, requiring knowledge. Moreover, whoever/whatever knows our need, is also aware of the constitution of air and how to make use of it. Who is responsible for this caring, purposeful and knowing act? Do blood cells know our need? Do they know the changing climate conditions and how to adjust to those changes so as to fulfill our needs? Is it our brain that knows and plans? Can they really know and care about our well-being? Is it at all possible that this act of increase in blood cells, which requires comprehensive knowledge, care, skill, and power would just develop like that, randomly? And then randomly be transcribed into our genetic makeup? How can this adjustment between environment and our cells be ascribed to random mutations or the environment? [In this example, of course, we are not even asking how the blood cells and vessels (and related organs like heart and brain) are formed and made to function as a

[12] For instance, let us just reflect on one event: the union of an egg and a sperm. Sperm released from the father race toward the egg in the mother. Once a sperm enters the egg, the egg membrane becomes impermeable to further sperm. This set of facts alone indicates comprehensive knowledge and purpose at work. Someone/something clearly knows 1) the way each sperm and egg is formed: that each contains half of a set of DNA; 2) that only one sperm should unite with an egg in order to constitute a full set of DNA; 3) that the sperm should be equipped to travel to the egg; 4) once one sperm enters the egg, no other sperm should enter it so that there is no excess DNA, and so on. How reasonable is it to presume that the sperm or egg know all this? Is it at all possible that somehow through mistakes in the genetic code, a sperm is equipped to go toward the egg and egg closes its membrane purposely and wisely? Just this one event shows how things are interrelated and harmonized with each other. The events are so interconnected that it is impossible to claim that some random events or things could work together to produce this outcome. Furthermore, there are countless other interrelated events happening within the womb, and in the human body, let alone in all other species, all of which indicate immense comprehensive knowledge and purposefulness that rejects the possibility of things complementing each other by chance.

result of chance!] If even such a tiny change cannot be accounted by the theory, how can major organs and structures can be explained?

Why is it that proponents of the Theory do not see its contradictions?

When we notice the deeply unreasonable core of the theory, some may be shocked and ask: Does the theory *really* claim that things happen without any purposeful cause? This is an easy answer: yes, it does and we encourage the reader to verify it for themselves. A second question is: given that chance is at the heart of the theory, why is it that so many scientists take the theory of evolution seriously and even defend it? The answer lies in intentionality. Their intention is not just to neutrally observe nature and try to make sense of it. Their purpose is also to find an alternative to religion, something other than a purposeful being who transcends nature.[13]

If the intention was purely to find the best explanation for the data we have, the theory of evolution would not have survived. But the intention is different. The intention is to find an explanation with *the condition of not allowing any reference to any intelligent, purposeful being that is beyond nature*. Once such an assumption is made, the theory of evolution becomes "the best" option. It is like deciding to explain a great meal on the dinner table without any reference to a cook. With such pre-judgment, something that is otherwise unreasonable starts to appear as the only option. Then, for instance, the wind that blows in from the window may become "the best explanation." One can start speculating: "Perhaps the wind mixed the ingredients in precise measures somehow, opened the oven, and set it to the right temperature, etc. We just do not know how exactly and we are still working on the details..." Similarly, once the option of a being with infinite knowledge, wisdom, power, is rejected from the beginning, the theory of evolution is perceived as "the

[13] To be sure, such intention applies to only some of the scientists, especially to those who are leading in defending the theory. Other scientists follow their lead without questioning, and their inability to see the contradiction stems from having *no* intention to judge the theory on its merits.

only scientific/logical/reasonable" view. Such speculation is considered reasonable simply because of this intention to negate the option of a transcendent being.[14]

Yet, if science is about being open-minded, why would we assume from the beginning that even when things very clearly look like they are purposefully made, we have to ignore this actuality and resist it at all cost? All prejudices and fears might have some benefit or personal reason behind it, but that does not mean such prejudice is thereby justified.[15] Adding scientific jargon does not make unjustified views reasonable. So, our advice to readers is to be critical and think for yourselves and do not be discouraged or intimidated by the scientific jargon. You need not be a biologist to question its weakest claim of chance at its heart.

A Note on Methodological Naturalism

The prejudice of modern science against any being beyond nature is admitted by philosophers of science. The technical name given to this presumption is "methodological naturalism." This attitude may have some practical benefits in some contexts; for instance, it can encourage us to look into natural order more closely instead of resorting to a 'God of the gaps' view. Indeed, it may be acceptable to limit the scientific method to natural causes to start with. However, the problem with modern science is that it excludes the non-natural/metaphysical indiscriminately especially as it pertains to the results: what happens when natural causes indicate something beyond the physical realm? Insistence on avoiding any reference to a purposeful being beyond nature in modern science leads to distortion of data. The theory of evolution is a perfect example of such distortion. As a philosopher of science summarizes it, "If there is a choice between naturalism and truth, [such a view] forces science to choose the former. Once science is limited to

[14] Nursi offers simple metaphors to clarify how one's intentionality can make the impossible look possible. See the moon example noted in *Words*, 144.

[15] For instance, one motivation may be to feel good about rejecting religion. Another motivation may be to make up for excesses committed by some religious people, like the medieval Catholic Church censoring Galileo (though we should also keep in mind that the clash between religion and science even in the Western context has been exaggerated for Christianity has supported scientific study more often than it challenged it). The political benefits of the theory in the colonial period was also a reason; the European colonialists invoked the theory of evolution to wipe out native populations, such as in Australia, claiming that the people they killed had not yet evolved to become fully human.

certain kinds of entities, it cannot follow the data wherever it leads. *Science is instead forced to beat the data until it gives a naturalistic confession.*"[16] Thus, science ends up missing important cues to 'transcendental' dimensions of nature. Even if science is restricted to the study of natural causes, it needs to remain open to the possibility that the outcome may point beyond. After all, if there is a Creator, how can He have no bearing on His creation (i.e., the natural world and its 'laws')? How is it justified to ban God (i.e., the Creator) from the world? How is that 'objective'?

Let's also keep in mind that when a scientist sets up an experiment, she's actually seeking answers to particular questions and she carries out her measurements accordingly. This does not mean that those questions and answers capture all of 'reality,' since what is known about the world depends on the scientist's paradigm; i.e., what she perceives and what she *chooses to look for*, which determines the particular way the experiment is executed. That's why new scientific theories do not emerge only as a product of accumulation of facts and data, but also as a product of new ways of seeing and perceiving the world, as science theorist Thomas Kuhn famously noted.[17]

A Note on Politics

Philosophers of science note that a scientific theory can be developed, changed, and eventually can even be abandoned. This should also apply to the theory of evolution. But for the reasons mentioned above, unfortunately, in reality, there is a lot of politics involved in questioning the theory of evolution. Indeed, a lot of political maneuvering happens in publicly defining, explaining, and scientifically

[16] Jeffrey Koperski, *The Physics of Theism: God, Physics and the Philosophy of Science* (Blackwell, 2015), 212, (italics added.)

[17] In other words, the questions we ask shape the answers we find. To give a simplified example, say a person, a few centuries ago, was presented with a laptop and asked to investigate it; how would he have proceeded? How revealing would his questions be, if he had no idea what a computer was and no clue about the purpose for which it had been assembled? Unless he were given some hints, could he ask meaningful questions to discover the reality of the object before him? How far could his experiments take him? For instance, through experiments, he could show that the laptop works quite well as a tray. Could he then say that he knows the truth about this object? The situation of this man claiming to understand the laptop is like the situation of a scientist who assumes naturalism (i.e., that nothing beyond nature is real) and believes that he is in no need of any cues beyond to understand nature. How do they know they are not missing crucial aspects of the object of inquiry? What if there are 'things' that they're totally unaware of and they don't even know that they don't know?

questioning the theory.[18] Alternative theories to evolution are strongly censured in Western academia. If you are critical of the theory, it is practically impossible for you to be published in academic journals, regardless of how strong your empirical data are or how probable your alternative hypothesis is.[19] This is an indication that this theory is beyond the realm of the 'scientific.' The theory of evolution is a dogma as it is considered incontestable and it is held up for ideological reasons.[20] Some scientists, such as those in the Intelligent Design Movement in the US, have tried to break through such censure; however, they seem to have some way to go.[21]

Conclusion

The key logical problem for the theory of evolution is the claim of randomness and purposelessness: the claim that things have evolved from an ancient cosmic soup by chance, and random factors such as mutation and climate conditions. In addition, unearthing billions of years of earth history is extremely complicated. It is also destined to remain a tentative and incomplete task, given the immense amount of lost empirical data and immense time span we are looking at. For the purposes

[18] For instance, because this claim of chance is so unreasonable, in popular definitions and school textbooks the term "random" or "chance" is often evaded in explaining the theory of evolution. They even introduced a new term, "non-random," in a desperate attempt to discourage critical thinking of the theory. Richard Dawkins, for instance, vehemently claims that "natural selection" is a "non-random" process and claims the theory does not reduce all life to random chance. What do they mean by "non-random"? Does "non-random" mean "purposeful"? No, not at all. Does it mean a consistent phenomenon that is observed regularly? No, not at all. But by throwing in this term "non-random," they blur the vision of the common person who can otherwise see that the emperor has no clothes. And, even if we were to grant Dawkins' claim that "natural selection" (which is also a vague term) is "non-random," he can only invoke it as merely a subtractive phenomenon, eliminating organisms of lesser reproductive fitness; it cannot generate organs or organisms. The generative mechanism invoked in the theory of evolution is that of random mutations. As Lenski and Mittler admit, "A fundamental tenet of evolutionary biology is that mutations are random events" (Lenski RE, Mittler JE. 1993. The directed mutation controversy and neo-Darwinism. Science 259: 188–94). Moreover, the notion of abiogenesis which asserts the emergence of complex cellular life from random interactions of atoms and molecules in a primordial soup also entails reducing all life ultimately to chance.

[19] For instance, Harvard faculty Douglas Denver, the author of *Transformatist Illusion*, and molecular biologist Michael Behe, the author of *Darwin's Black Box.* Seyyed Hossein Nasr, "On Biological Origins," in *Islam, Science, Muslims, and Technology* ed. by Muzaffar Iqbal, Dost Publications, 2009, (147–172); pp. 155-156. Nasr also discusses other scientific dissents in Europe as well as logical and mathematical problems with the theory (pp. 147-160).

[20] See Nasr, 159-160. Similarly, Philip E. Johnson, a professor of law who wrote *Darwin on Trial*, explains how the theory of evolution functions as a foundational story for naturalistic ideology that rejects God. See "Introduction," in his *Reason in the Balance: The Case against Naturalism in Science, Law and Education,* (Downers Grove, IL: IVP Press, 1995), 7-17. Johnson also offers a noteworthy discussion of the dissonance between scientific evidence and the presentation of the theory to the public in an interview entitled "Philip E. Johnson on Darwinism", accessible at: <https://www.youtube.com/watch?v=ww6T8xjp9Vo>

[21] See their work at their website <http://www.intelligentdesign.org>

of faith, one can defer empirical conclusions to scientists to the extent that they *carefully* collect and *honestly* interpret the data to the best of their ability. The Qur'an gives ample space for genuine scientific inquiry, as its purpose is not to teach us technical information but rather to give essential cues in understanding the world and our lives. It invites us to pay attention to the purpose and purposefulness of life. With that guidance, which is to be followed not blindly but with sound reasoning and reflection on what we observe and experience in the world, we should be critical of all kinds of dogmatic subjective interpretations present in modern scientific discourse. Just because something is found in a scientific textbook does not mean it is necessarily scientific. Muslims should be willing to take the lead in such questioning and rethinking of the theory. Finally, the challenge for believers today is not about the theory of evolution; rather, it is about developing a science that is honest, open, enriching, and beneficial. We need a science that allows us to discover and celebrate the wisdom, diversity, creativity, and beauty that is constantly being reflected in creation. We thus need a *paradigm shift* in our approach to understanding life, the world, and our place in it.[22] We would like to end our essay on this note, by adding a section to give a taste of what such a shift might look like.

Appendix: Reflections from a biologist trained in Qur'anic approach by Dr. Ilhan Akan

In closing we would like to share some reflections on biological facts from a Qur'anic perspective. Dr. Ilhan Akan is a biologist with a PhD in molecular biology whose approach to his scientific work has been transformed through Qur'anic study.[23] *We include his brief reflection simply as an example of how a*

[22] Yamina Bouguenaya "Islamization of Knowledge: A Paradigm Shift," in *Muslim Education Quarterly*, 12 (4), pp. 4-29. According to Nursi, the universe reflects glimpses of various divine laws, such as " the law of mercy, law of wisdom, law of justice, law of beauty (*kanun al-rahma, kanun al-karam, kanun al- 'adl, kanun al- jamal*)" and so on. If we could have such a paradigm shift, science could become a venue for discovering such laws that point us to the One indicated by the beautiful names. (See Nursi, *Words*, "30th Word, 2nd Aim on 'Transformation of Particles,' 3rd Point, " tr. by S. Vahide, pp. 578-582)

[23] He gratefully acknowledges the perspective he gained through Qur'anic study through Bediuzzaman Said Nursi's exegesis, the *Risale-i Nur*, which he studied with Dr. Ali Mermer, a scholar of Islam and university chaplain in New York. Dr. Mermer is also the founder of *Islam from Within* YouTube channel and one of the main contributors of www.Ha-mim.org with many essays, discussions, and audio recordings.

biologist can question baseless claims of the theory of evolution. More importantly, we would like to give a taste of how, inspired by a profound Qur'anic understanding, we can start reading the book of the universe, seeing how it points to The Creator. By including this section, we want to show that it is possible to interpret differently (and much more reasonably) the data that are being misinterpreted or ignored in the current "mainstream" perspective of evolutionary biology. What follows are Dr. Akan's reflections.

A theory in biology and a theory in physics are different things and clearly evolutionary theory does not have the same status as a physical theorem. The theory of evolution still warrants considerable study; nothing is proven or disproven. A major problem is that there is no opposing view allowed in biological science these days in Western academia. You can't publish anything against evolution. It will be rejected from any scientific journal. That is why it looks like every published scientific study supports evolution.

There is a need for a paradigm shift in biology. In the meantime, there are a couple of example observations that I would like to share as a biologist that make me question the theory of evolution.

1. Survival of the fittest

According to the "survival of the fittest" concept, which is an essential aspect of the theory of evolution, there should be an incredible abundance of fossils of unsuccessful mutated organisms. Yet, we have not found them! Strangely, all the fossils we find are those of successful organisms. This casts doubt on the theory.

Interestingly, what is thought to be an arms race between species can be easily seen as every living organism helping each other, or that they are all designed to be dependent on each other. The results of population genetic studies confirm the fact that each species is dependent on others. In other words, you cannot have an ecosystem that consists of just one type of organism. Plants need animals, animals need other animals, animals need plants, they all need bacteria and fungi, etc.

However, the evolutionists claim that the dependencies in an ecosystem are due to evolutionary constrictions. The nature of these constrictions, the origins of these limitations, and why evolution could not overcome them is never questioned. If one were to study the details of a so-called "ecosystem," they would find that the ecosystem is composed of the sum of organisms in it. Who arranges these forces? If every organism in the ecosystem is a part of the ecosystem, what is the driving force behind this successful system? In order to explain these powerful facts, an evolutionist often refers to the ecosystem: "everything in a biological system acts in within the boundaries of the ecosystem." The big question here is why this harmony takes place: how can these simple organisms know what to do and what not to do?

The theory of evolution's ecosystem argument assumes that there would be random mutations in each organism, and some will be more adapted to the environment. That presumably accounts for the diversity of organisms. However, according to evolutionary time, this probability is impossible. By referring to any event with "it took millions of years to do this," an evolutionist expects us to believe (!) that all the unsuccessful organisms were eliminated over millions of years. Even billions of years are not enough to explain the diversity in life forms. For instance, there's no explanation for the increase in the number of species during the "Precambrian explosion."

This is where a paradigm shift can be applied. One can look at all these events, and easily conclude that there must be an all-Knowing, all-Wise Creator and Sustainer controlling every aspect of life. This belief would not stop someone from studying life and nature; on the contrary it will make one want to study more and more the details of all the intricate relationships between organisms. It only makes sense if one believes all the changes surrounding life are governed by The One who creates and sustains all. The so-called "evolutionary process" is in fact a process that is under a Wise, Knowing and Powerful Controller. For such a Creator, changing one thing to another is simply transforming particles from one shape to another. That is also why living organisms have similarities. We all have DNA, we all have cells,

we all need oxygen, water etc, because we are all made by the same Creator and we all bear His signature.

2. Why does my heart beat? Ironic "Trade-Offs" and "Rules" of Evolution

According to the theory, evolution "necessitates" that higher more complex organisms develop mechanisms that are advantageous for them to survive. Let's take the heart for an example. Heart cells require no outside intervention to work; they just do! The heart can also just stop suddenly. If evolution were to drive things to improve, we should have acquired voluntary control over autonomic processes such as the heart beating rate, but we have not. To this fact, an evolutionist will say "Evolution does not let us mess with heart rate," or "Evolution comes with a trade off." Is this statement really scientific? What is meant by evolution here? An evolutionist often talks about evolution as if it is a conscious being who has power and wisdom, and yet the theory in fact rejects such a being. Such contradicting and ironic statements are not uncommon in proponents of evolutionary discourse.

3. Who is digesting my food? Challenge of Self-Sacrifice and Interdependence

We start chewing our food and we have no control over the rest of its digestion. Our digestive system looks like its acting on its own and produces acid that results in the death of thousands of cells lining the digestive tract. Who is responsible for this almost sacrificial action that helps the human body? If every living being works for itself, why would these cells kill themselves to enable energy production for the body? This fact could only make sense if the cells in the digestive tract work under the command of a being who makes them and who employs them to act wisely and for the sake of human needs. In contrast, if evolution were the mechanism to survive, as the evolutionist view claims, why are so many cells dying while you are trying to gain energy from nutrients? Why does any cell in a multicellular organism operate for the benefit of the organism as a whole and not

just itself? The theory of evolution clearly fails to account for the purposeful acts that yield benefit for "the greater good."

Let's continue with the example of digestion. No animal with a digestive tract (i.e., with intestines) can survive without the bacteria in their gut. This currently is known as the microbiome. For example, if you lose the bacteria due to a disease or antibiotics, you will have diarrhea that could be deadly if you don't replace the intestinal bacteria with new ones. Gut flora are even needed for development. It is puzzling that we are dependent on organisms that are far behind us in evolution. Why are we dependent on these organisms? One specific example that comes to my mind about the shortcomings of the theory is the case of Vitamin B12, which is made by bacteria in our intestine. B12 deficiency affects the brain and nervous system. Evolutionarily, this cooperation would be simply called "symbiotic life" and glossed over. However, if you think about it from an evolutionary perspective, it does not make sense for a multicellular organism like us to be dependent on bacteria to make such an important molecule.

4. Viruses: A Major Problem for Evolution

Viruses are also a big problem for evolution. If they are an ancient life form, why are they dependent on their hosts like humans? Moreover, why have we not generated virus-resistance during the course of our evolution and the tremendous selection pressures in favor of it? Evolutionists often respond, "Evolution is not perfect, you gain something but you need to give something else away." This explanation is another inconsistency in the theory, how can an organism know what it will need in the future and prepare for it by making a deal like this?

5. Mothers Challenge the Theory

There is no way to explain a mother animal's caring for its babies from the perspective of evolutionary theory. The evolutionist claims that animals watch their babies for the survival of their species. This is a strange explanation, to put it mildly. Why would a mother animal sacrifice itself for some young and vulnerable animal? If the evolutionary view is true, then a mother should not sacrifice itself

for its babies, as it can always have another baby. As you see, the theory of evolution fails to explain the very compassionate acts we see before our eyes.

6. Beautiful leaves: Shapes and Beauty as a Problem for Evolution

In the spring time, we see all kinds of trees have all kinds of leaves. If the purpose of evolution of leaves is just to perform photosynthesis, why are there so many different shapes? The theory of evolution thus fails to make sense of diversity with its simplistic understanding of functionality. As far as I can see, the theory of evolution fails to explain the beauty in creation. I would interpret the diversity in the world and its beauty as clear signs of the One behind the scenes, speaking to us through His Artwork, disclosing His beauty, art and love.

7. Apples: Another Example of Interdependence and Cooperation in Nature

Sparing you all the specific details that I work on in my lab, I can tell you that from the data I have encountered in my years of scientific study, I personally conclude that nothing in the universe is random. How can I accept a chance-based theory of evolution when I see the opposite all the time? To give another example, as we all know, an apple tree gives apples, and there are seeds in it. First of all, the tree has to know when to start flowering, meaning it has to know spring time, summer time and fall or winter. In addition, it means that the tree knows that insects, such as bees, would come to drink the nectar from its flowers, so its pollen could be fertilized. The apple tree has to decide to make nectar. Following that, the apple tree should know that it needs animals like birds to distribute its seeds. It should cover the seeds with a tasty apple to attract animals like birds. To make all this happen, the apple tree has to know what to get from the soil, send it to its leaves and make sugar in those leaves and then send it to apple fruit. This is no small feat, and it requires comprehensive knowledge and impressive wisdom; it can’t be the result of random processes. Just a simple look at an apple tree shows how impossible the randomness claim of evolution truly is. It makes much more sense

to attribute the apple tree, soil, water, sun, birds etc. to One Creator Who makes them all, knows them all, and so employs them for each other's benefit. By these shared roles, the sun is under the apple tree's service, the soil is helping the apple tree, the apple tree is serving birds, and birds are distributing its seeds, etc.

8. DNA

One big argument that was used by evolutionists was that most of our DNA is junk and just piles of ancient viral DNA. However, today we are learning that most of that region contains molecules that control gene expression or participate in architectural functions of the chromosome.[24] In fact, the regulation of gene expression is so intricately regulated that it is becoming more and more impossible to believe in the randomness of this whole system. DNA serves as a template for RNA, which then is used to generate proteins. The RNA and proteins go back and regulate DNA. There are layers and layers of controls and regulations. All these new findings opened new areas of research, such as epigenetics, microRNAs, insulators in genome, etc. Contrary to arguments, the more we learn about biology the more it is impossible to deny a purposeful and knowing Creator.

9. We are Destined to Die

In fact, our own DNA stands against evolution. The terminal portion of chromosomes are called telomeres. These are repeated sequences of DNA. These repeats are longest when we are born and shorten after each cell division. For example, we start with 100 telomere repeats and as we get older the number repeats drop to 60, 50, 40 and eventually goes to zero as we age. In other words, we are aging as soon as we are born. Preventing telomere shortening is the hallmark of cancer cells. So, it is clear that we are destined to die. However, if evolution is the way to get better why should our DNA have a program that schedules us to die? If DNA evolved for better survival, why aren't we like plants that can live hundreds of years and why are we aging? To me, this fact only makes

[24] Research continues to identify and hypothesize new roles for what was formerly considered "junk." For instance, see: Jagannathan M, Yamashita YM. Function of junk: pericentromeric satellite DNA in chromosome maintenance. Cold Spring Harbor Symposia on Quantitative Biology. 2018:034504. Also see Erika Check Hayden "Human genome at ten: Life is complicated," *Nature* **464**, 664-667 (2010).

sense if we reject randomness, and confirm the Qur'anic view that we are created by One Creator who designed us in a way that entails we don't stay in this world forever.

10. Y Chromosome

The Y chromosome is present only in males. Humans have 46 chromosomes, and 2 of them are sex chromosomes. If the duplicate is both X (XX), then it is a girl, if it is XY, then it is a boy. There is an event called crossing over in paired chromosomes. Through this process, some of our features become like our mothers, and others resemble our fathers. For example, in our case if the girl has 2 X chromosomes, one comes from her mother and one comes from her father. These two X chromosomes will exchange some pieces from each other. At the end, the X chromosome is a mixture of chromosomal material from her mother and father. However, the Y chromosome does not have a pair, so its composition does not change. In fact, it is used to trace the biological trees of human populations. The analysis of Y chromosome suggests that all humankind came from a single man.

The current belief is that all humans came from a single human ancestor male who migrated from Africa. (I have even heard in a meeting an evolutionary biologist speculate that it is most likely that one man traveled around the world and had kids with different women around the world!) Isn't it much easier to accept that all humankind came from Adam? Why is it so hard to believe that a Creator Who creates and sustains everything we see also created Adam?

In Sum:

As far as I see, as a scientist trained in modern biology, the theory of evolution itself stipulates randomness, wherein no purposeful agent is accepted. God is involved at every moment of our lives. He creates, sustains, and changes all beings at all times. One can't say "I accept evolution, but there is God involved at some steps." Since the theory of evolution insists on no Divine or purposeful involvement, trying to insert God into the theory is meaningless. If one claims to

be a believer in God and evolution, they only allowed God to create at the beginning of the creation (~five billion years ago), and believe that purposeless "evolutionary forces" drive life as we know it. Such arguments misunderstand the theory of evolution and misrepresent the reasonableness of the Qur'anic view.

One can easily conclude that life is so much more complicated and cannot be reduced to random and purposeless "evolutionary forces." The Qur'an claims that nothing can happen without the will of God. The more one learns about life, the easier it is to confirm *La ilaha illallah: There is no deity except God.*