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بِسْم اللَّهِ الرَّحْمَنِ الرَّحِيمِ الْحُمْدُ لِلَّهِ رَبِ الْعَالَمِينِ, وَ صَلَّى اللَّهُ عَلَى سَيِّدِنَا مُحَمَّدٍ وَ آلِهِ الطَّاهِرِينِ, وَسَلَّمَ تَسْلِيماً.

In the Name of Allah the Beneficent, the Merciful. The Praise is for Allah Lord of the Worlds, and Blessing be upon our Chief Muhammad and his Purified Progeny, and greetings with abundant greetings.

ٱللَّهُمَّ صَلَّ عَلَى مُحَمَّدٍ وَّآلِ مُحَمَّدٍ وَّعَجِّلْ فَرَجَهُمْ وَالْعَنْ أَعْدَائَهُمْ أَجْمَعِيْن

Islam and Science: Differences and Agreements

Summary:

In Islam, a scholar never has his sufficiency from knowledge. Actively seeking knowledge is not only encouraged, but mandatory for both men and women.¹ Islam explicitly says: 'Hasten in the seeking of knowledge, a single word of wisdom² you take from the truthful is better than this world and what it contains of the gold and silver'.³

Similarly, science is the inquisition. It is the quest of the unknown which leads to one answer after another; it is the feeling of fulfilment and accomplishment which energises one to continue tirelessly solving the mysteries of the unknown. Hence scientific knowledge keeps on updating and bringing in innovation, and needs one to be abreast of the developments, and to be actively involved within changing financial and social circles. Islam teaches the same involvement, but with moderation, with focus being on short- and long-term benefits (the world and Hereafter)!⁴ Any time spent in striving to improving one's situation as well as others, is considered an act of worship.

Scientific observations, depending upon interpretations, are mostly in accordance with what Islam has revealed over 1400 years ago. However, those hypotheses in which science denies the presence of a Creator and suggests that 'somehow' the universe and life started on their own, are in direct conflict with Islam, as well as other monotheistic religions (Judaism and Christianity). The purpose of the article is neither to highlight the agreement between Islam and science nor the opposite but to share some basic information on few topics of interest where, at the moment, these two seem to converge or diverge.

Islamic laws were relayed to people by God, through the Book (Quran) which was revealed upon Prophet Mohammed, the Quran being the last Book Revealed upon the last Prophet. Together with his successors, Prophet Mohammed acted upon these Verses and interpreted the Message of God - as per the wisdom and intellect levels of people, which remain valid

¹ Hadith: Tuhaf Al-Uqoul, pg. 376, ISBN: 964-438-276-5

² A tradition for the betterment of both world and hereafter.

³ Wasail ul Shia, H. 33313

⁴ First successor (c. 600–661) of the Prophet says (Nahj Al-Balagah – Saying 393): 'Take from the world what it gives you, and turn-around from what it turns away from you, for if you cannot do so, then be moderate in the seeking''.

until the Doomsday. In contrast, scientific discoveries have taken place over the course of many centuries, across a vast spectrum of subjects. In this article, only some topics are referred to, with respect to Islamic perspectives.

Islam encourages one to think, reflect and organise affairs for the betterment of oneself as well as others,⁵ but has God Given complete freedom to humankind to manage their affairs? No, the freedom is with bounds and compulsion is also with limits; in Islam the matter is between the two.⁶

Science has its own restrictions and bounds imposed by the society but subject to change, depending upon the observed harms or perceived risks to humanity or nature. And this does not come without controversies, as there are political and economic gains spoiling the positivity of science, i.e., production of lethal weapons, causing economic instabilities and harming the environment. In predominantly Muslim countries, the same is practised through misinterpretations of Holy Verses of Quran, hence the fruits of its principles and knowledge are only reflected in some individuals who try to adhere to its true message. Both Islam and science recommend to abstain when in doubt, whether it is practised or not. At this point, it will be useful to briefly define Islam and science:

Islam: The religion Muslims follow, a monotheistic faith, revised and resent as was revealed many times before through earlier Prophets and Messengers, including Adam, Noah, Abraham, Moses, and Jesus. God revealed His Last Book (Quran) through His last Prophet, Muhammad (c. 570 - 632 CE)⁷, and it is valid and applicable until the end of time.

Science: The intellectual and practical campaign encompassing the systematic study of life and the universe focusing on the behaviour of physical and natural occurrences through observations and carefully designed experiments.

Do these very different approaches ever reconcile? Yes, when science touches upon certainty and finds that which has been 'correctly interpreted' as being foretold by Islam.

Finally, scientific knowledge is improving with new research and discoveries. The same holds true for the understanding of Islam, as there are apparent meanings of the Quran as well as hidden meanings that are not immediately understood (exoteric and esoteric). However, the most important aspect of any advancement, either in Islam or science, is to make the world a

⁵ Those who are recalling Allah standing and sitting and (lying) on their sides and are thinking regarding the Creation of the skies and the earth: 'Our Lord! You have not Created this in vain! Glory be to You; Save us then from Punishment of the Fire [3:191]

⁶ Abu Al-Hassan Al-Reza (8th successor to Prophet Mohammed - c. 766 –818) replied, 'I asked him, so I said, 'Does Allah Delegate the matters to the servants?' He said: 'Allah is Mightier than that'. I said, 'So does He Compel them upon the disobedience?' He said: 'Allah is more Just and Wise than that'. He (the narrator) said, 'Then he said: 'Allah Said: "O son of Adam! I am closer with your good deeds than you are, and you are closer with your evil deeds than I am. You are doing the disobediences by My (Given) Strength which I Made to be in you"' (Al Kafi V 1 – The Book Of Tawheed (Oneness of Allah^{azwj}) CH 30 H 3)

⁷ https://en.wikipedia.org/wiki/Muhammad

better place to live in, not only for now but also for the generations to come. That is to strive for the lasting peace and harmony of mankind, as scientific tools and its knowledge are used for both good causes as well as manipulation of the vulnerable and of destruction of life and habitats. In Islam, Muslims have not fully benefited from the teaching of Quran either, i.e., by implementing its laws in entirety and coming up with inspirational society. Will the world ever see the lasting peace and harmony? Yes, Islam is waiting for the 'Saviour' (Mehdi), the 12th successor of the Prophet, who will be assisted by Prophet Jesus (Resent by God), to revise peace and harmony after the tyranny and inequity. The world will become a beautiful and enjoyable place for all living species. As Islam goes further than science in forgiving and observing patience, i.e., Islam says: 'No two parties ever met (in a confrontation) at all, except victory was for the one who was greater of the two in pardoning'.⁸

Introduction:

Followers of Islam or any religion are not to be alienated from the inventions of science, as they have and are contributing to scientific discoveries and are to be considered as partners in welfare of our planet and its inhabitants through knowledge emanating from both science and religion.

The Role of Science in Islam:

There are many benefits which science has brought to mankind, including facilitating the acts of worship in Islam, i.e., determining the sunset, sunrise, moonsighting as well as numerous health diagnostic, treatment and operation procedures. God encourages one to seek the assistance of a physician, e.g., in a narration from the 6th successor of the Prophet (c. 702–765 CE)⁹: 'A Prophet from the Prophets (of God) fell sick. He said: 'I will not take the medication until the One Who Made me sick, He is the One Who Heals me'. God Revealed to him: "I will not Heal you until you take the medication. The Healing (indeed) is from Me."¹⁰

The conflicting approaches between Islam and Science:

Any phenomena, which science has either ratified or contradicted, based upon its established principles, would be vigorously advocated or denied by the scientists but they may shift their stance in the light of further findings and evidence. Islam on the other hand, describes natural laws which universe would abide by, but also highlights the exceptions to demonstrate the control of 'the Creator' which may transcend the natural law as per God's Wish and no one

⁸ Al Kafi V 2 – The Book of Belief and Disbelief CH 53 H 8

⁹ https://en.wikipedia.org/wiki/Ja%27far_al-Sadiq

¹⁰ Bihar Al Anwaar – V 57 The book of creation - Ch 50 H 15

can challenge and ask 'how' and 'why'¹¹, i.e., God Parted the river for Prophet Moses, Created Jesus without a father. God also Cures the incurable diseases e.g., upon answering a servant's beseeching. The scientific approach would either deny these unexplainable spectacles or distance from these, classifying them as 'supernatural' or fairytale occurrences. Here, those with strong belief in God would accept the occurrence of miracles and submit to the Will of God and refute those who negate these. God, unlike His creation, in all monotheistic religions, (Islam, Judaism and Christianity), is absolutely transcendent and can neither be described nor exemplified¹²." God Mentioned unique attributes for Himself, e.g., He is the First and the Last, the Apparent, and the Hidden, and He has knowledge of everything. ¹³" And God Says: "When He decides (to create or ordain something), He merely says, "Be!" and it becomes (what He willed)¹⁴." So Natural Laws are for the creation which humankind try to understand and work with and are studied within the scope of science. But it is upon the discretion of God to let certain events occur beyond the bounds of laws of natures, i.e., the miracles, classified by the science as chaotic and unexplainable, to all of these, science seems to have slightly better explanation today than in the past. ¹⁵

Islam encourages 'Deep Thinking':

The words 'Taffakur and Taddabar' have frequently been used in the Holy Quran, meaning to invoke deep thinking (ponding/contemplating). And God discourages the wishful thinking (day dreaming)¹⁶ and God has Commanded us to contemplate (Taffakur and Taddabar) on universe, Ayat (Signs Created by God), to renegade misconceptions and to be appreciative to the Nature and respect and protect it.

Initially, when one contemplates, several questions and unresolved issues are realised in one's mind which prompt a quest for the answers within oneself and one starts looking for the answers. When one looks further, God Helps, and Guides him.¹⁷.

¹¹ 'God Said: "From you I shall Create the Prophets, and the Mursils, and My righteous servants, the Guided Imams, the inviters to the Paradise, and their followers up to the Day of Judgment, and I do not Mind, nor will I be questioned about what I Do, and they (people) would be questioned".

Then Allah Scooped with His Palm another Scoop of salty water, and He Shook it in His Palm, so it solidified. Then He Said to it: "From you I shall Create the tyrants, and the Pharaohs, and the ruthless ones, and the brethren of the satans, and imams of Kufr, and the inviters to the Fire and their followers up to the Day of Judgment, and I do not Mind, nor will I be questioned about what I Do, and they would be Questioned".

And He^{azwj} Stipulated in that the Change of Mind regarding them, and He^{azwj} did not Stipulate regarding the companions of the right hand, the Change of Mind of Allah^{azwj} regarding them. Then He^{azwj} Mixed the two waters in His^{azwj} Palm altogether, and He^{azwj} Shook these two, then He^{azwj} Placed these two in front of His^{azwj} Throne, and they were both sodden with clay". (Tafseer e Ayashi, vol. 1, p. 28)

¹² God Says, for example: "Nothing is similar to Him, and He is the One who perfectly hears and knows (Quran, 112:4)

¹³ Quran 57:3

¹⁴ Quran 2:117

¹⁵ https://en.wikipedia.org/wiki/Chaos_theory

¹⁶ See for example: https://hubeali.com/articles/DayDreamingAnActOfSatan.pdf

¹⁷ So ask the Ahl Al-Zikr (People of the Reminder) if you do not know (16:43)

(In a long tradition 6th successor -c. 702–765 CE, of the Prophet said) And know that whatever Allah has Ordered you to avoid, so He has Prohibited it, and follow the footsteps of the Messenger of Allah, and his Sunnah, so adhere to it and do not follow your own desires, and your opinions, for you will go astray. The most misguided of the people with Allah is the one who follows his own desires and his opinion without (following the) Guidance from Allah (an extract).¹⁸

For further reading, please visit the link: <u>Deep Thinking – Taffakur and Taddabar |</u>
<u>Hubeali.com</u>

Islam encourages one to learn, from all knowledgeable ones, regardless of their faith and allegiances, i.e., Islam says: 'The wisdom is a lost property of a believer, so take the wisdom, and even if it is from the people of hostility''. ¹⁹ And 'frequent looking into the knowledge, opens the intellect'. ²⁰. In Quran, one is encouraged to supplicate to Lord: and say: 'Lord! Increase me in knowledge!' [20:114].

In Islam, knowledge and knowledgeable ones are highly regarded, i.e., in a tradition it is: 'The knowledge is superior than the wealth by seven (aspects): The first, it is an inheritance of the Prophets, and the wealth is the inheritance of the Pharaohs. The second, the knowledge does not reduce with the spending, and the wealth reduces by it. The third, the wealth is needy to the protection, and the knowledge protects its owner.

The fourth, the knowledge enters into the shroud and the wealth remains (outside). The fifth, the wealth is acquired by the believer as well as the non-believer, while the knowledge is not acquired except by the believer in particular. The sixth, the entirety of the people are needy to the owner of the knowledge regarding the matters of their Religion and are not needy to the owner of the wealth. The seventh, the knowledge would strengthen the man upon the passing over the Bridge (Hereafter), and the wealth would prevent him.²¹

And 'The knowledge is an honourable inheritance, and the ethics are an excellent garment, and the thinking is a clear mirror, and the apology is an advisory warner, and sufficient for yourself is the ethic of leaving what you dislike for the others'.²²

The Position of Sceptics of Islam:

The sceptics criticise some of the followers of Islam, that they have initially refused to embrace some of the scientific innovations and later became fond of those, e.g., Mullahs²³

¹⁸ Al-Kafi, Vol. 8, H. 14449

¹⁹ Nahj Al Balagah – Saying 79,

²⁰ Bihar Al-Anwaar – V 1, The book of intellect, and the knowledge, and the ignorance, S 1 Ch 4 H 32

²¹ Bihar Al-Anwaar – V 1, The book of intellect, and the knowledge, and the ignorance, S 2 Ch 1 H 108

²² Bihar Al-Anwaar – V 1, The book of intellect, and the knowledge, and the ignorance, S 2 Ch 1 H 20

²³ Uneducated religious clerics

issued decrees against loud speakers, but gradually fell in love with its capabilities. It's not only Muslims, scientific advances have been met with severe hostilities from other religious bodies, due to lack of understanding and conservatism, e.g., Galileo Galilei ²⁴ The fear of heretics and lack of the understanding of their own religious books prompted the opposition of clergy to the scientific discoveries. Gradually, people realised that science does not contradict the teachings of Almighty God but the unfounded fears were promoted by the lack of understanding of the interpretation of Divine Books, whereas scientific approach has always been based on searching for the answers to natural phenomena.

In Islam, development of scientific knowledge, over the years, has led to the use of, terminologies foreign to religion, which were difficult to corelate to the interpretations of the Holy Quran. Science has also benefited from many Muslim scientist who have contributed to various fields of science from early days to today, the disagreement stems from the interpretations of some of the definitions and interpretations within both Islam and scientists, as neither do all scientists fail to agree with the developed theories nor do all Muslims concur in the deduction of meanings of the Quranic Verses. We start with some examples, citing first those which apparently show disagreement in Islam and science!

The concept of Evolution – Darwin:

In the work of Charles Darwin (1809- 1882), Darwin wrote about the theory of evolution by natural selection. The idea that humans shared a 'common ancestor' with apes was a challenge to the foundations of human civilisation, and challenged to Christian orthodoxy. The theory has since then been updated and refined. ²⁵

Islam's objection to the theory of Evolution:

Darwin in his book 'On the Origin of Species', observed that a group of Finches pecking away, each had different sized beaks, which enabled some to peck and reach inside particular sized holes while others weren't able to reach.²⁶ This became the basis of Darwin's theory of

²⁴ During most of the 16th and 17th centuries, fear of heretics spreading teachings and opinions that contradicted the Bible dominated the Catholic Church. They persecuted scientists who formed theories the Church deemed heretical and forbade people from reading any books on those subjects by placing the books on the Index of Prohibited Books. A type of war between science and religion was in play but there would be more casualties on the side of science. Nicholas Copernicus and Galileo Galilei were two scientists who printed books that later became banned. Copernicus faced no persecution when he was alive because he died shortly after publishing his book. Galileo, on the other hand, was tried by the Inquisition after his book was published. Both scientists held the same theory that the Earth revolved around the Sun, a theory now known to be true. However, the Church disapproved of this theory because the Holy Scriptures state that the Earth is at the centre, not the Sun. As the contents of the Bible were taken literally, the publishing of these books proved, to the Church, that Copernicus and Galileo were sinners; they preached, through their writing, that the Bible was wrong.

²⁵ https://www.bbc.co.uk/teach/articles/z7rvxyc

²⁶ Darwin 1859

evolution. Darwin argued that in order to survive and adapt to their environments, animals as we find today, have evolved over a very long duration of time. Later on, the same concept was further strengthened, i.e., "the survival of the fittest". Now with the emergence of modern genetics and the "Modern Synthesis" the topic of evolution is a very broad and indepth field of science. Many evolutionists believe that life not only evolved from 'an unknown minute origin', but also appeared in the beginning by random chances and permutations.²⁷

But they don't have an answer to how the first creation was formed, again they say it was by chance?

Islam Says: God is the creator of all Things:

In Quran, God says: That is Allah, your Lord. There is no god but He, the Creator of all things, therefore worship Him, and He is the Disposer of all things [6:102]

An atheist came and asked from the 6th successor of Prophet (c. 702–765 CE)²⁸: 'Aren't you claiming that Allah Created all things?' The 6th successor of Prophet replied: 'Yes'. He said to him, 'I (also) create'. He (the successor) said, 'How do you create?' He said, 'I excrete in a place, then I leave from it, and insects come to be, therefore I am the one who created these'.

So, the 6th successor of Prophet said: 'Wouldn't a creator of the thing know much (about what) he creates?' He said to him, 'Yes'. He (the 6th successor of Prophet) said: 'Then, do you recognise the male from these (insects) from the females, and do you recognise how old these are?' He (the atheist) went quiet (out of shame of absurdity)".²⁹

How does God Create?

God says: Originator (without an example previously existing) of the skies and the earth, and when He Decrees a matter, so rather He is Saying to it, "Be", so it comes into being.³⁰

In the interpretation of the above, the 5th successor of the Prophet (c. 676–732)³¹ said to a questioner: about the Words of Allah the Exalted *Originator of the skies and the earth [2:117]*', said: 'The beginning of all things for which there were no examples for, from before, and the beginning of the skies and the earth, and there were no skies and the earths before. Have you not heard the Words of the Exalted: And His Throne was upon the water [11:7]?''³²

²⁷ https://www.understandislam.org/what-is-the-islamic-view-on-darwins-theory-and-evolution/

²⁸ https://en.wikipedia.org/wiki/Ja%27far_al-Sadiq

²⁹ Bihar Al-Anwaar – V 3, The book of Tawheed, Ch 3 H 24

³⁰ Quran, Chapter 2, Verse no, 117

³¹ Muhammad al-Bagir - Wikipedia

³² Basaair Al Darajaat – P 2 Ch 21 (Rare) H 1 (Extract)

'The narrator says: I said to 7th successor of the Prophet (c. 745–799)³³, 'Inform me about the Intention (Will) of Allah, and of the Creation?' So he (7th successor) said: 'The Intention from the creatures is the conscience, and whatever begins for them after that is the deed. But as from Allah the High, so His Intention is the Deed itself and is not apart from that, because He neither Narrates, not Concern, nor Contemplates, and (therefore) these are the qualities denied from it (Will), and these are the qualities of the creatures. So, the Intention of Allah is the Deed, and no other than that. So, He is Saying to it, "Be", so it comes into being [2:117], without a Word or having Spoken by the tongue, (Utilising) energy or thought, and there is no qualitative state for that, just as there is no qualitative state for Him (to exist)'.³⁴

The Issues with the evolution theory:

It is frequently asked: why God couldn't have made living beings, which evolved from one to another?

This is in direct disagreement with the belief that God Created everything from scratch, whereas, the theory of evolution as known, claims that inorganic chemical compounds came together by chance and as a result of randomly occurring natural phenomena, however, without elaborating how were these first formed and came into being?

The theory of evolution suggests that everything within the universe appeared by itself, and evolved and developed over time through inorganic matter and mutations (chance), which negates the need of a creator and supports the idea of creation of everything, from small to large over a large interval from inorganic matter and permutations. However, there has to be some creation, even at a minute scale which was origin of further creations. The evolutionist scientist, Pierre Paul Grassé³⁵ concedes this and summarises what the concept of accepting "coincidence" and "chance" means for evolutionists: "Chance becomes a sort of providence, which, under the cover of atheism, is not named, but which is secretly worshipped." Hence, evolutionists, despite knowing the fact that numerous signs within an extremely well-constructed, organised and structured universe point towards the existence of a Creator, but still choose to disbelieve in God - and "worship" chance and coincidence in the hope that they are correct.

Therefore, the theory of evolution is more like a creation myth than a scientific theory. A myth neither be proved, nor disproved, with the technology of the culture; a myth requires faith. Evolutionists must have faith that living organisms appeared spontaneously from non-living

³³ https://en.wikipedia.org/wiki/Musa_al-Kazim

الكافي 1: 85/ 3. 34

³⁵ Pierre-Paul Grassé (November 27, 1895 in Périgueux (Dordogne) – July 9, 1985) was a French zoologist, writer of over 300 publications including the influential 52-volume Traité de Zoologie. He was an expert on termites who rejected Neo-Darwinism and was a proponent of Neo-Lamarckism, see for example; Pierre-P. Grassé, loc cit (1977), 107

matter on earth (abiogenesis) but again, the non-living matter was also being created and that cannot be created from chance.³⁶

The evolutionists would then say, from where did God come from? Did man create the concept of God? How did we learn about our Creator? So, we go to the next step, how God Exists?

Islam on the existence of God:

In a long tradition, 8th successor of the Prophet (c. 766 –818)³⁷ said to an atheist:

'And if it was so that the word was our word (Existence of Allah), wouldn't you be destroyed and we would be Saved (if there happens to be a God)?' So, he said, 'May Allah have Mercy on you! Help me to find out how He is and where He is?'

So, he (the successor) replied: That description for Him is wrong. He is 'where' without a 'where', and 'how' without the 'how', so He cannot be recognised by the 'how-ness' nor by the 'where-ness', nor can He be attained by the feelings, nor can He be compared with anything'.

The man said, 'So He is 'nothing' when He cannot be realised by the feelings from the senses'. So, he was told! 'Your senses are unable to realise Him, so you are denying His Lordship, and as for us, when our senses are unable to realise Him, we are even more convinced that He is our Lord, as a different 'thing' from the things'.

The man said, 'So inform me, when was He (from)?' The successor of Prophet said: 'Inform me, when He wasn't and I will inform you when He was'. The man said, 'So what is the evidence upon it?' The successor of Prophet said: 'I, when I look at my body, and I am not enabled upon increasing it, nor reducing it in the width, and the length, and repulsing the abhorrence from it and flowing the benefits to it, I know that for this construction, there is a Builder. So, I acknowledge with it what I see from the orbiting of the planets by His Power, and the growth of the clouds, and the interchanging of the winds, and the flowing of the sun and the moon and the stars, and other than that from the wondrous clear signs, I know that for this is Determiner and a Builder'.³⁸

For more proofs of the existence of God, see, e.g., https://hubeali.com/article/atheist-mamomeen-replies-to-them/

From historical evidence as being recorded in many books, God Sent Prophets to the people, and Holy transcripts, which all ratify the previous Prophets and the Divine books Revealed by

³⁶ https://reasons.org/explore/publications/articles/evolution-mythology-part-5-of-5-conclusion

³⁷ https://en.wikipedia.org/wiki/Ali_al-Rida

³⁸ Al Kafi V 1 – The Book Of *Tawheed* (Oneness of Allah^{azwj}) CH 1 H 3

the Same One and Only God. Among those Prophets i.e., Noah, and Ibrahim, and Musa, and Isa, Moses, David, Jesus and Muhammad, who showed undeniable miracles and have left so deep impressions on their followers that they are well respected and their teachings are preserved and followed until today.

In a tradition, it is explained (by the 6th successor of Prophet Mohammed - c. 702–765 CE)³⁹ that Noah was Sent with a Book and a Law. Therefore, everyone who came after Noah took by his Book, and his Law, and his Manifesto, until Ibrahim came with the Parchment with determination by it, left the Book of Noah without disbelieving in it. And every Prophet who came after Ibrahim, did so with the Law of Ibrahim, and his Manifesto, and his Parchments, until Musa came up with the Torah, and his Law, and his Manifesto, and with determination by it, left the Parchment. So, every Prophet who came after Musa, took by the Torah, and his Law, and his Code, until the Messiah came with the Evangel, and by the determination with it, left the Law of Musa, and his Manifesto, until Muhammad came up. So, he came with the Quran, and his Law, and his Manifesto (an extract).⁴⁰

How did the universe form?

Science has theories to explain the formation of the universe, starting from ancient ones where earth was perceived to be the centre of the universe and now being abandoned and replaced with more elaborate ones, realising the size of the earth is a fraction as compared with the galaxies with billions of plants. Science believes that our universe has either always existed or was formed by an explosion, termed as the 'Big Bang'. Islam says, Universe is a Creation of God, as per His Will. Below we briefly review both viewpoints.

Science Hypothesis on the Creation of Universe:

"The vast Universe, known to us, contains around 100 billion stars in the Milky Way and at least 140 billion galaxies across the Universe. So how was this unimaginably giant Universe come into being? For centuries scientists thought the Universe always existed in a largely unchanged form, run like clockwork thanks to the laws of physics. But a Belgian priest and scientist (George Lemaitre) put forward another idea. In 1927, he proposed that the Universe began as a large, pregnant and primaeval atom, exploding and sending out the smaller atoms that we see today.

His idea went largely unnoticed. But in 1929 astronomer Edwin Hubble discovered that the Universe isn't static but, is in fact, expanding. If so, some scientists reasoned that if you rewound the Universe's life then at some point it should have existed as a tiny, dense point.

³⁹ https://en.wikipedia.org/wiki/Ja%27far_al-Sadiq

⁴⁰ Al Mahaasin – V 1 Bk 5 H 359

Critics dismissed this: the celebrated astronomer Fred Hoyle sarcastically called this concept the "Big Bang" theory, a phrase that would later be adopted by its proponents.

Undeterred by sceptics, scientists Ralph Alpher, George Gamow and Robert Herman predicted that if there had been a Big Bang, then a faint afterglow should linger somewhere in the Universe, and we should in theory be able to detect it. To do so would require one of the greatest pieces of 'fortune' in science.

As per Big Bang theory, around 13.8 billion years ago, all the matter in the Universe emerged from a single, minute point, or singularity, in a violent burst. This is said to have expanded at a high rate and temperature, doubling in size every 10-34 seconds, creating space as it rapidly inflated. Within a tiny fraction of a second gravity and all the other forces were formed. Energy changed into particles of matter and antimatter, which largely destroyed each other. But it is said that some matter survived. Protons and neutrons started to form within the first second; within minutes these protons and neutrons could fuse and form hydrogen and helium nuclei. After 300,000 years, nuclei could finally capture electrons to form atoms, filling the Universe with clouds of hydrogen and helium gas. After around 380,000 years it left behind a bath of photons – the Cosmic Microwave Background that Penzias and Wilson accidentally detected. Within this were tiny ripples of matter that were stretched to enormous sizes during inflation, and in turn these became the seeds for the galaxies and galactic clusters we see today. If this is how we think the Universe began, then how will it end?⁴¹

In Islam, the starting point of the universe (which science believes formed from an explosion called the 'Big Bang') was Created by the Will of God, the still expanding Universe is also explained in the Quran⁴², and God will end it as it was created at first place.

Islamic View on Creation of Universe:

'In a tradition it was asked from the 7th successor (c. 745–799) of the Prophet Mohammed, 'Inform me about the Will of Allah and the will of the creatures?' He said: 'The will of the creatures – It is the conscience, and it leads to the act. And as for Allah the High, His Will – it is His Invention. It is not other than Him, because He does not narrate, and does not speculate, and does not think, and these are the Attributes, which are away from Him, and these are the qualities of the creatures.

Allah's Will and the Action are not different, (but) Saying to it: "Be!", so it comes into being [36:82]. This is without the Word, and speaking by the tongue, and not by speculation, and

⁴¹ https://www.bbc.com/future/article/20140812-how-was-the-universe-created

⁴² Quran, *51:47, to be discussed* later in the article

not by thinking, and not by mood to do that, as He has no moods. Therefore, Glory be to Him in Whose Hand is the Dominion of all things, and to Him you shall be returning [36:83]'.⁴³

In (the book) Nahj-al-Balagah, he (first successor of Prophet -c. 600–661) said: 'He (God) Said when Intending the Universe "Be!", and it came into being – not by sound branching out, and not a call that can be heard, and it is the Speech of the Glorious, Action from Him, His Desire and the like of it. There was no universe like that before, and if there had been one from before, it would require another god.⁴⁴

For further details, see, e.g., https://hubeali.com/article/creation-of-the-universe/

Origin of Universe from Smoke:

One of the hypotheses of science regarding the formation of universe is that about 300,000 years after the big bang, the universe was like a smoke-filled chamber from which light could not escape. By the time the universe was a billion years old, the smoke—actually a gas of light-trapping hydrogen—had cleared almost entirely, allowing stars and galaxies to become visible. Now, by analysing images taken by the Hubble Space Telescope, researchers have come close to confirming their best guess: the smoke was cleared away by a blaze of ultraviolet radiation from the earliest galaxies....⁴⁵

The Quran provides insight into the origin of the universe:

Then He Directed Himself to the sky and it was a smoke, so He Said to it and to the earth: "Come, willingly or unwillingly!" They both said: 'We come willingly' [41:11]

'In (C. 676–732) the 5th successor of the Prophet explained, after being asked about the creation of the universe: 'Everything used to be water, and God's Throne was upon the water. So, Allah Commanded the water (to evaporate) so the fire was ignited. Then He Commanded the fire (to recede), so it was extinguished and from its smoldering a smoke arose. Thereafter, Allah Created the Heavens from that smoke, and Allah Mighty and Majestic Created the earth from the ashes. (an extract)⁴⁶

The Gravitational Force (Pull):

Gravity is the most significant interaction between objects at the macroscopic scale (large distances) and its pulling strength is related to the mass of an object. It determines the motion of planets, stars, galaxies, and even light. On Earth, gravity gives weight to physical objects, and the Moon's gravity is responsible for waves and tides in the oceans. Today, science

⁴⁴ Tafseer Noor Al Saqalayn – CH 36 H 93

الكافي 1: 85/ 3. ⁴³

⁴⁵ https://www.science.org/content/article/how-early-universe-cleared-away-fog

⁴⁶ Al-Kafi, Vol.8, H. 14590

explains that each star holds a proper position in the sky, and its path and orbit depend on gravity. Also, the gravitational forces hold the celestial bodies apart from each other, hence, preventing their collision.

God Says in Quran: "So I swear by the places where the stars set! And indeed, it is a great oath, should you know." (56:75-76).

It is narrated from the 4^{th} successor of Prophet (c. 658 – 712): 'From among the sustenance are those which Allah has Measured out for the people from what their needs are to Him. The sea (atmosphere) is the one which Allah has Created to be between the sky and the earth'.

He said: 'And Allah has Determined in these the flow of the sun and the moon, and the stars, and the planets, and has Determined all of that upon the orbit. Then for every orbit is an <u>Angel</u> with whom there are seventy thousand Angels. So, they turn the circle of the orbit. So, it is upon their turning (pulling, i.e., gravity) that the sun, and the moon, and the stars, and the planets turn along with them. Therefore, they descend in their station which Allah Mighty and Majestic has Determined for them. Therein are their days and their nights (an extract).⁴⁷

Science on first appearance of life on earth

Science is very unclear regarding the beginning of life on earth, and according to some hypotheses, earth was initially dry and barren. What changed to allow life to thrive here, in a sustained way, isn't fully understood. Life, as we know it, cannot exist without water and organic molecules – the building blocks for all living creatures. One possibility, as per a widely held scientific view, is that these vital components were deposited on Earth by a long bombardment of icy comets.

As per scientific observations, comets are made of dust and ice. Astronomers have examined the water contained in different comets to see if it matches the type of water found on Earth. The latest evidence makes it unlikely that comets were a major supplier of Earth's water. Instead, our water might have come from other sources, like asteroids. Science must examine more comets to be certain and the research in this field will need to go on for the foreseeable future.

Science believes that all life on Earth is made of complex organic molecules. These include amino acids that make up proteins, nucleobases in DNA and carbohydrates like sugars. Scientists doubt that the early Earth had a great enough variety of these chemicals to build the required compounds.⁴⁸

⁴⁷ Al-Kafi, Vol. 8, H. 14489

⁴⁸ https://www.bbc.co.uk/teach/articles.

However, can these coincidently form 'an organism' belonging to a living species, i.e., an animal, plant or human body, which are composed of living cells and have the reproduction capabilities? And through 'spontaneous generation' non-living materials came together to form a living organism, which then multiplied. It is estimated that an organism such as an adult human could be made of between 10-100 trillion living cells. It's not just the staggering number of cells, but these living cells are very intricately connected and beautifully organised to create intelligent, resilient, and strong human beings as well as other living species.

An example of the eye is generally quoted, with all its inimitable contrivances for adjusting the focus to different distances, for admitting different amounts of light and for the correction of spherical and chromatic aberration, could have been formed by natural selection, seems, I freely confess, absurd in the highest degree, Darwin (1859). ⁴⁹ Science, here has no explanation how something like the human eye could have not only formed but located deep in the face and under forehead bones just merely by the time, chance, natural selection and mutation, even if that is possible then different people will have it located at different locations and not always in pairs.

Islamic View on beginning of Life on Earth:

Allah Says in Quran: "O Mankind! Be dutiful to your Lord, who created you from a single person (Adam) and from him, he created his wife (Eve), and from them both, He created many men and women." (Quran: 4:1)

Below we present some traditions in the interpretation of the above holy verse (4:1).

The Creation of the First Human - Adam

The Narrator says: 'I asked the 6th successor of Prophet (c. 702–765 CE)⁵⁰, 'For which reason did Allah Mighty and Majestic Created Adam without a father or mother, and Created Isa without a father, and Created the rest of the people from the fathers and the mothers?'

So, he said: 'To let the people know the completeness of His Power and its Perfection, and they would know that He is Able to Create a creature from a female without a male, just as He is Able to Create him from without a male or a female, and He Mighty and Majestic Did that to let it be known that He has Power over everything'.⁵¹

In the interpretation of 4:1 (above Quranic Verse), it is reported in another narration, 'Allah Mighty and Majestic, when He Intended to Create Adam, He Sent water on the clay, then He

⁴⁹ https://www.theatlantic.com/health/archive

⁵⁰ https://en.wikipedia.org/wiki/Ja%27far_al-Sadiq

⁵¹ Illal Al Sharaie - V 1 Ch 12 H 1

took a handful (from it) and kneaded it, then divided it into two parts with His Power, then He spread them out into two portions, and behold, they were moving.⁵²

The propagation of the 2nd Generation:

The most Powerful and Sublime, Created two females in a similar way as the creation of first - Adam and Eve, so to be married to the two sons of Adam and Eve, so human race did not propagate from relationship of brother and sister, as someone may wrongly perceive.⁵³

Creation of Jesus Christ without father:

Science, would not accept the birth of Jesus Christ without a father, but it's a very well accepted and historically reported account, many Christian and Muslim reports verify the birth of Jesus Christ without a father. For example, in the Quran Allah Says:

Surely the example of Isa with Allah is like the example of Adam; He Created him from dust, then said to him, "Be", so he became [3:59];

(This is) the Truth from your Lord, so be not of the disputers [3:60];

He said: 'Like that your Lord Said: "It is easy unto Me, and We will Make him to be a Sign for the people and a Mercy from Us". And it was a matter Ordained [19:21]:

Additional Verses narrating the story of the birth of Prophet Jesus and his mother included in the Appendix I, below we briefly present a narration interpreting these Verses:

In a book 'Tafseer Furaat Bin Ibrahim' – 'Ahmad Bin Ja'far transmitting from Ali (the first successor of Prophet -c. 600–661) having said: 'When a delegate of Najran arrived to the Prophet, among them were three from the Christians from their elders – Al-Aaqib and Mohassin, and the Bishop. They came to the Jews and they were in the house of teaching. They (Christians) shouted at them (Jews), 'O brothers of the pigs and the monkeys! This man is in your midst who has overcome you. Descend to us'. Mansour the Jew and Ka'ab Bin Alhraf the Jew descended to them. They said to them, 'Be cautious tomorrow, we shall test him.

He said: 'And it was so that the Prophet, whenever he prayed the morning (Salat), said: 'Over here is one of the examiners' so if he found anyone, he would answer him, and if he did not find anyone, he would recite to his companions what had been Revealed to him during that night. When he had prayed the morning Salat, they sat in front of him, the Bishop said to him, 'O Abu Al-Qasim! That Musa, who is his father?' He said: 'Imran'. He said, 'Yusuf, who is his

⁵² Al Kafi V 2 – The Book Of Belief and Disbelief CH 2 H 3

⁽Extract) علل الشرائع: 18/ 2. . ,2 Ch 17 H 1, 6 /216 , illal Al Sharaie – V 1 Ch 17 H 2, 2 المسرائع: 18 (Extract) علل الشرائع: 18 (Extract) علل الشرائع: 18 (Extract) على الشرائع: 18 (Extract)

father?' He said: 'Yaqoub'. So, you, may my father and my mother be (sacrificed for) you, who is your father?' He said: 'Abdullah Bin Abdul Muttalib'. He said, 'So, Isa, who is his father?'

He said: 'The Prophet was silent, and it was so that whenever he was needy to something from the talk, Jibraeel would swoop down to him from the seventh sky and deliver to him his talk in quicker than the blink of an eye. That that is the Word of Allah the Exalted: And Our Command is not, except one, like the blink of the eye [54:50].

He said: 'Jibraeel came and said: 'He is a Spirit of Allah and His Word'. The Bishop said to him: 'Can the spirit happen to be without a body?'

He said: 'The Prophet was silent, and it was Revealed to him: 'Surely the example of Isa with Allah is like the example of Adam; He Created him from dust, then said to him, "Be", so he became [3:59].

He said: 'The Bishop jumped a great leap, 'It is grievous (to hear) it be said that Isa is from dust!' Then he said, 'O Muhammad. We neither find this in the Torah nor in the Evangel nor in the Psalms, nor do we find this - (except) with you'.

He said: 'Allah Revealed to him: 'then say: 'Come, let us call our sons and your sons, and our women and your women, and ourselves and yourselves, [3:61]. They said, 'You are being fair to us, O Abu Al-Qasim! So when is your appointment?' He said: 'In the morning, if Allah so Desires'.

He said: 'They (Jews) left and they were saying, 'There is no god except Allah! We do not mind which of the two (Muslims or Christians) Allah Destroys - the Christians and the upright ones - when they are destroyed tomorrow'.

Ali Bin Abu Talib (first successor of Prophet) said: 'When the Prophet had prayed the morning Salat, he took hold of my hand and made me to be in front of him, and took (Syeda) Fatima and made her to be behind his back, and took Al-Hassan and Al-Husayn to be on his right and on his left, then blessed them with a Blessing.

When they saw him do that, they were filled with regret and they said, 'By Allah! Surely, he is a Prophet, and if he were to imprecate us, Allah will Answer him against us and Destroy us and none of us will be saved from it with anything except we will be left to it'.

He said: 'They came until they sat in front of him, then they said, 'O Abu Al-Qasim! Save us'. He said: 'Yes, I have saved you all. But, by the One Who Sent me with the Truth, had you

imprecated, Allah would not have Left any Christian upon the surface of the Earth except He would have Destroyed him". 54

How did Jesus Christ defend the Chasity of his mother:

'In a tradition from the fifth successor of Prophet (c. 676–732) it is narrated: 'When the virgins spoke the slander, and they were seventy, to Maryam: You have come with an amazing thing [19:27], Allah Caused Isa to speak during that, and he said to them: 'Woe be unto you all! Are you fabricating upon my mother? I am a servant of Allah. He Gave me the Book, and I swear by Allah, I shall strike every woman from you with a legal penalty due to your fabrication upon my mother'. 55

'A Jew asked the Prophet and he said, 'O Muhammad! Were you a Prophet in the Mother of the Book before you were Created?' He said: 'Yes'. He said, 'And these companions of yours, the Momineen were affirmed along with you before they were Created?'

He said: 'Yes'. He said, 'So what is your matter you did not speak with the Wisdom when you came out from the belly of your mother just as Isa Bin Maryam spoke, based on your claim, and you were a Prophet before that?'

The Prophet said: 'My matter isn't like the matter of Isa Bin Maryam. Isa Bin Maryam, Allah Created him from a mother, there isn't any father for him just as He Created Adam without a father and a mother; and had Isa, when he came out from the belly of his mother, not spoken with the Wisdom, there would not have been any excuse for his mother in the presence of the people, and she had come with him from without a father, and they would have seized her (for punishment of adultery) just as they were seizing the married women. Therefore, Allah Mighty and Majestic Made him speak as an excuse for his mother''. 56

Scientific Understanding of the Modern Embryology

One area of significant focus has been embryology – the study of the development of embryos. Modern embryology, a relatively recent development, began with the 17th-century invention of the microscope. However, the concept of human development in stages was not widely recognized until later.

Embryology is the branch of biology and medicine concerned with the study of embryos and their development. It was based on descriptive and comparative studies before the

⁵⁴ Bihar Al Anwaar – V 19, The book of our Prophet, P 3 Ch 32 H 17

⁵⁵ Bihar Al-Anwaar– V 14, The book of Prophet-hood, Ch 17 H 15

⁵⁶ Bihar Al-Anwaar – V 14, The book of Prophet-hood, Ch 17 H 16

microscope and cellular biology in the 19th century. The theory of epigenetics was supported by Aristotle, William Harvey, Caspar Fredrick Wolff, and Karl Ernst Ritter von Baer.

Baer's work laid the foundations of modern comparative embryology, while Balfour's A Treatise on Comparative Embryology was another formative publication. German anatomists Martin H. Rathke and Wilhelm Roux and American scientists Thomas Hunt Morgan furthered embryonic development.⁵⁷

The scientific accuracy of these details in the Quran is truly remarkable and serves as evidence of its divine origins. It is astonishing to think that over 1000 years ago, the Quran provided insights into human embryology that were only discovered by modern science much later.⁵⁸

Islam on Baby development stages:

In 610 CE, Islam has given a detailed baby development inside the womb of mother, e.g., which is interesting to compare with the science:

Quran says: He Created you in the bellies of your mothers a creation from after a creation in <u>triple darkness</u> (39:6).

The meanings of the above triple darkness are explained in a tradition by the fifth successor (c. 676–732 CE) of the Prophet as: 'Darkness of the abdomen, and darkness of the womb, and darkness of the placenta'.⁵⁹

Allah at two other places in Quran Says: We Created you from dust, then from a seed, then from a clot, then from a lump of flesh, formed and unformed, in order to Clarify for you, and We Settle in the wombs whatever We so Desire up to a specified term, then We Extract you as babies for you to be reaching your maturity (22:5).

Then We Created the seed to be a clot, then We Created the clot to be a lump of flesh, then We Created the lump as bones, then We Clothed the bones with flesh, then <u>We Grow it as another creation</u>. So Blessed is Allah, the best of the Creators [23:14]

The fifth successor of the Prophet (676–732 CE)⁶⁰ says regarding God's Words: *then We Grow it as another creation [23:14]*, he said: 'It is the Blowing of the spirit into him'.⁶¹

Hence, a baby develops in three dark compartments, and forms from a seed, which becomes a clot, then a lump of flesh, followed by the formation of bones which are then covered with

⁵⁷ Britannica, The Editors of Encyclopaedia. "embryology". Encyclopedia Britannica

⁵⁸ the Quran provided insights into human embryology that were only discovered by modern science much later.

مجمع البيان 8: 766. ⁵⁹

⁶⁰ https://en.wikipedia.org/wiki/Muhammad_al-Baqir

تفسير القمّى 2: 91 ⁶¹

flesh and finally soul is breath into the body. These are the stages but each stage duration is also given in Islam as:

The 5th successor (c. 676–732) of the Prophet says: 'The seed⁶² happens to be in the womb for forty days, then it becomes a clot for forty days, then it becomes a lump for forty days. So, when four months are complete, Allah Sends two creating Angels, so they are both saying: 'O Lord! What will You Created, male or female'. God Commands them both, and they are both saying: 'O Lord! Miserable or happy?' God Commands them both, and they are saying: 'O Lord! What is its term? And what is its sustenance?', and everything from its state, and a number of things from that, and they both write these down as the covenant in between his eyes. So, when Allah Completes the term for him, Allah Sends an Angel, so he rebukes him with a severe rebuke, and he forgets the Covenant'.

So, Al-Hassan Bin Al-Jaham said to him, 'So is it allowed that he can supplicate to Allah, so He Changes the female to a male, and the male to a female?' So he said: 'Allah does whatever He so Desires to'.⁶³

(It has been narrated) from Abu Ja'far (the fifth successor of Prophet) having said: 'Whenever Allah Mighty and Majestic Intends to Create the seed from which He would Take the Covenant against in the ribs of Adam^{-as}, or whatever He would be Managing for him with regards to it, and Makes it to be in the womb, Stirs the man for the copulation, or Reveals unto the womb: "Open your door until My Creation resides inside you and My Ordainment and My Power is implemented".

Thereafter, the womb opens up its door, so the seed sails into the womb. So, it vibrates inside it for forty days, then becomes a clot for forty days; then it becomes a lump for forty days; then it becomes flesh with veins flowing inside it entangled. Then Allah Sends two creating Angels who create in the wombs whatever Allah so Desires. Then they both storm into the belly of the woman from the mouth of the woman. So they both arrive to the womb, and in it is the spirit from old (from before), the one transferred in the ribs of the men and the wombs of the women. So they both blow into it a soul of life, and the remaining, and cleave open for him the hearing, and the sight, and the entirety of the body parts, and the entire of whatever is in the belly, by the Permission of Allah.

Then Allah Reveals to the two Angels: "Write upon him My Ordainment, and My Predetermination, and implement My Command, and stipulate for Me the change regarding what you two are writing". So they both say: 'O Lord! What should we write?' So Allah Reveals unto them both: "Raise both your heads to the head of its mother". So they both raise their heads, and there is a Tablet upon the forehead of its mother. So they both look into it, and they find

⁶² sperm

⁶³ Al Kafi – V 6 – The Book of Aqeeqa Ch 6 H 3

(written) in the Tablet, its image, and its adornment, and its term, and its Covenant whether it is miserable or fortunate, and the entirety of its affairs'.

He said: 'So one of them dictates to his companion, so they both write down the entirety of whatever is in the Tablet, and the change is stipulated upon both of them with regards to what they write. Then they both seal the document and make it to be between his eyes. Then they both make it stand straight in the belly of its mother'.

He said: 'So perhaps he is haughty (arrogant), so he turns over, and that does not happen except regarding every haughty or insolent one. When the time reaches, the child comes out complete, or other than complete. Allah Mighty and Majestic Reveals unto the womb: "Open your door until My creature comes out to My earth, and My Command gets implemented regarding him". So the time has reached and the child comes out.

So the womb opens its door of the birth. So, Allah Sends an Angel called Zajir (Rebuker) to him. So he rebukes him with such a rebuke that the child panics from it, so he overturns and his feet come to be above its head, and its head in the lower part of the belly, in order for Allah to Make it easy upon the woman and upon the child, for the exiting'.

He said: 'So when the rebuke of the Angel is withheld, he rebukes it again, so it panics from it, and the child falls to the ground crying, having panicked from the rebuke'.⁶⁴

'I said to Abu Ja'far (the 5th successor of Prophet), 'May I be sacrificed for you! The man supplicates for the pregnancy that Allah should Make whatever is in her belly to be a male, well-proportioned'. He said: 'He can supplicate in what is between it and four months, for it is a seed for forty nights, and a clot for forty nights, and a lump for forty nights. So that completes four months (an extract).⁶⁵

Mountains are the pegs of earth:

In Quran, Allah Says: And He is the One Who Made the sea subservient for you to be eating fresh flesh from it, and (for) you to extract ornaments from it to wear, and you see the ships cleaving in it, and for you to seek His Grace, and perhaps you would be grateful [16:14]

And He Cast firm mountains in the earth lest it shakes with you, and rivers and roads, perhaps you may go aright [16:15]

The 6th successor of Prophet (c. 702–765 CE) says: 'Allah did not Create a creation except and He Commanded to another one to overcome it, and that is because Allah Blessed and Exalted,

⁶⁴ Al Kafi – V 6 – The Book of Aqeeqa Ch 6 H 4

⁶⁵ Al Kafi – V 6 – The Book of Aqeeqa Ch 6 H 6

when He Created the sea (atmosphere) in the sky, it prided and abounded and said, 'Which thing can overcome me?'

So Allah the Exalted Created the planets, and these orbited with it and humbled it. Then the earth prided and said, 'Which thing can overcome me?' So Allah the Exalted Created the mountains and Affirmed these in its back as pegs from it from lest it shakes (uncontrollably) with whatever is upon it. So, the earth was humbled and calmed down'.⁶⁶

We see that mountains are described as pegs. A peg is a mechanical tool to stabilise the tent, which is about 2/3 in the ground and 1/3 is outside, which is the case for the mountains, as per scientific evidence.



Picture of pegs to install a tent.

Once we look into the science of geology, we see that this is the exact description of a mountain.

We, generally, scale mountains through defining its heights, but mountains actually have roots, which do not only hold mountain securely in its place but also assist in stabilising the earth.⁶⁷⁶⁸

The role of deep-rooted mountain is to maintain the stability of tectonic plates. They act as natural barriers, preventing the movement of these plates and reducing the occurrence of earthquakes and volcanic activities. Mountains are formed through tectonic processes and their roots extend deep into the Earth's crust, providing stability and reducing the likelihood of seismic activity. The weight and pressure exerted by mountains contribute to the overall stability of the Earth's crust.⁶⁹

Mountains are often formed at convergent plate boundaries, where tectonic plates collide. This collision helps dissipate the energy of plate movement, reducing the likelihood of catastrophic events like large earthquakes or massive subduction-related tsunamis.

H 28 – تفسير نور الثقلين، ج3، ص: 43 66

⁶⁷ Earth, Press and Siever, p. 413

⁶⁸ Edward J. Tarbuck and Frederick K. Lutgens, Earth Science (USA: Macmillan USA: 1993), 158.

⁶⁹ https://www.ncesc.com/geographic-faq/do-mountains-help-stabilize-the-earth

Mountains, therefore, act as "pressure relief valves" for the Earth's dynamic tectonic system.⁷⁰

Chest is constricted when climbing up (at high altitudes i.e., Mountains)

When climbing mountains (i.e., arriving at higher elevations), one feels the effect of thin air as the altitude from sea level increases, owing to a decrease in air density with every increment above the sea level. This lowers the outside air pressure, which makes it more difficult to inflate our lungs than at sea level. Our body requires the same amount of air in the blood but due to lower density of air, our body receives less of it and lungs respond to it by breathing at a higher rate.

Within the first few hours of altitude exposure, water loss also increases, which can result in dehydration. Altitude can also increase your metabolism while suppressing your appetite, meaning you'll have to eat more than you feel like to maintain a neutral energy balance. When people are exposed to altitude for several days or weeks, their bodies begin to somewhat adjust (called "acclimation") to the low-oxygen environment but the breathlessness still remains.⁷¹

God Says: "He (God) Makes their chest tight and constricted as if they were climbing up into the sky." (6:125)

Iron was Sent Down to Earth

The Quran says that the iron was "sent down" and was not from this earth, to which science also tend to agree that it cannot form on the earth as it would need very high temperatures so it came to earth as a foreign body.

Quran has a chapter (57) on Iron, named as 'Al-Hadeed', meaning Iron:

"And We also sent down iron in which there lies great force and which has many uses for mankind..." (Quran 57:25)

The first successor of Prophet (c. 600–661) says: and We Sent down the iron, wherein is great strength [57:25], so the 'Sending down', is its creation'.⁷²

The word "Anzalna," translated as "sent down" is used for iron in the verse, which means earth was devoid of iron and Iron was sent to benefit people. But, when we take into consideration the literal meaning of the word, which is, "being physically sent down from the

⁷⁰ https://geology-hub.com/question/do-mountains-stabilize-or-help-stabilize-the-earth/

⁷¹ https://theconversation.com/how-does-altitude-affect-the-body-and-why-does-it-affect-people-differently

^{,72 .250} الاحتجاج: 250. Al-Tabarsy, in Al-Ihtijaj

sky, as this word usage had not been employed in the Quran except literally, like the descending of the rain or revelation, we realize that this verse implies a very significant scientific miracle. Because, modern astronomical findings have disclosed that the iron found in our world has come from giant stars in outer space.⁷³

Not only the iron on earth, but also the iron in the entire Solar System, comes from outer space, since the temperature in the Sun is inadequate for the formation of iron. The sun has a surface temperature of 6,000 degrees Celsius, and a core temperature of approximately 20 million degrees. Iron can only be produced in much larger stars than the Sun, where the temperature reaches a few hundred million degrees. When the amount of iron exceeds a certain level in a star, the star can no longer accommodate it, and it eventually explodes in what is called a "nova" or a "supernova." These explosions make it possible for iron to be given off into space.⁷⁴

One scientific source provides the following information on this subject: "There is also evidence for older supernova events: Enhanced levels of iron-60 in deep-sea sediments have been interpreted as indications that a supernova explosion occurred within 90 light-years of the sun about 5 million years ago. Iron-60 is a radioactive isotope of iron, formed in supernova explosions, which decays with a half-life of 1.5 million years. An enhanced presence of this isotope in a geologic layer indicates the recent nucleosynthesis of elements nearby in space and their subsequent transport to the earth (perhaps as part of dust grains)." ⁷⁵

All this shows that iron did not form on the Earth, but was carried from Supernovas, and was "sent down," as stated in the verse. It is clear that this fact could not have been known in the 7th century, when the Quran was revealed. Nevertheless, this fact is related in the Quran, the Word of God, Who encompasses all things in His infinite knowledge.

The fact that the verse specifically mentions iron is quite astounding, considering that these discoveries were made at the end of the 20th century. In his book Nature's Destiny, the well-known microbiologist Michael Denton emphasizes the importance of iron: "Of all the metals there is none more essential to life than iron. It is the accumulation of iron in the centre of a star which triggers a supernova explosion and the subsequent scattering of the vital atoms of life throughout the cosmos. It was the drawing by gravity of iron atoms to the centre of the primeval earth that generated the heat which caused the initial chemical differentiation of the earth, the outgassing of the early atmosphere, and ultimately the formation of the hydrosphere. It is molten iron in the centre of the earth which, acting like a gigantic dynamo, generates the earth's magnetic field, which in turn creates the Van Allen radiation belts that

⁷³ Dr. Mazhar U. Kazi, 130 Evident Miracles in the Qur'an (New York, USA: Crescent Publishing House: 1998), 110-111;

⁷⁴ Ibid,

⁷⁵ Priscilla Frisch, "The Galactic Environment of the Sun," American Scientist, January-February 2000, www.americanscientist.org/template/AssetDetail/assetid/21173?fulltext=true.

shield the earth's surface from destructive high-energy-penetrating cosmic radiation and preserve the crucial ozone layer from cosmic ray destruction."

"Without the iron atom, there would be no carbon-based life in the cosmos; no supernovae, no heating of the primitive earth, no atmosphere or hydrosphere. There would be no protective magnetic field, no Van Allen radiation belts, no ozone layer, no metal to make haemoglobin [in human blood], no metal to tame the reactivity of oxygen, and no oxidative metabolism.

"The intriguing and intimate relationship between life and iron, between the red colour of blood and the dying of some distant star, not only indicates the relevance of metals to biology but also the bio-centricity of the cosmos..."⁷⁶

Darkness in the Sea:

God Says in the Quran: Or like the darkness in the fathomless ocean, a wave covers it from above a wave, (and) from above it is a cloud; darkness on top of each other. When he holds out his hand, he almost cannot see it. [24:40]

The verse mentions the darkness found in deep seas and oceans which increases as a function of its depth, so if one stretches out his hand, he cannot see it. The darkness in a see reaches to its peak at about 200 meters and below. At this depth, there is almost no light penetrating from the above sky.



Sunlight starts to dimmish, with each water layer absorbs it along sea depth.

The amount of light that penetrates through seawater depends upon many factors including the time of day, season, geographic location and the clarity of the water. When light passes

⁷⁶ Michael J. Denton, Nature's Destiny (The Free Press: 1998), 198. www.iic.de/uploads/media/NANO FT Nov2003 01.pdf

through water, it is absorbed and scattered by water molecules and particles in the water. As water depth increases, the longer (red) wavelengths are the first to be absorbed and scattered. By about 10 m below the surface, most of the red and orange wavelengths of visible light are no longer present. A source of artificial light must be used to view reds and oranges. For this reason, many divers carry a torch even during the day.

As depth increases the scattering and absorption of shorter wavelengths (yellows and greens) becomes evident. By about 150 m depth, even in the clearest water, human eyes can only see blue light. Beyond about 800 m the human eye can detect no visible light from the surface. At these depths the only visible light is made by living organisms. The eyes of some deep-sea fishes are 15 to 30 times more light-sensitive than human eyes. Some deep-sea fishes can detect light in depths down to 1300 m.⁷⁷

The history of deep-sea exploration begins relatively recently, mainly because advanced technology is needed to explore the depths. However, some earlier observations may have unknown the darkness increase with depth in a sea, the earliest such observations are reported to have taken place in 16th century, i.e., Ferdinand Magellan in 1521 attempted to measure the depth of the Pacific Ocean. He used a 2,400-foot weighted line, but did not touch bottom.⁷⁸

In another report: Scientific deep-sea exploration can be said to have begun when French scientist Pierre-Simon Laplace investigated the average depth of the Atlantic Ocean by observing tidal motions registered on Brazilian and African coasts circa the late 18th or early 19th century. However, the exact date of his investigation is unknown. He calculated the depth to be 3,962 metres (12,999 ft), a value later proven quite accurate by echo-sounding measurement techniques.⁷⁹⁸⁰

The new findings from a team effort involving MIT and several other institutions, highlights the effectiveness of internal wave in sea are produced and are compared with the surface waves: In new research, both in the ocean as well as in the largest-ever laboratory experiments to investigate internal waves, has solved a longstanding mystery about exactly how the largest known internal waves, in the South China Sea, are produced. Seen in cross-section, these waves resemble surface waves in shape. The only difference between an underwater wave and the water around it is its density, due to temperature or salinity differences that cause ocean water to become stratified. Though invisible to the eye, the boundary between colder, saltier water below and warmer, less-salty water above can be detected instrumentally. That boundary layer can resemble the ocean's surface, producing

⁷⁷ https://australian.museum/learn/species-identification/ask-an-expert/why-is-it-dark-in-the-deepsea/

⁷⁸ https://www.thoughtco.com/deep-sea-exploration-4161315

⁷⁹ Deep Sea Exploration." World of Earth Science. Ed. K. Lee Lerner and Brenda Wilmoth Lerner. Gale Cengage, 2003. eNotes.com. 2006. 7 Dec, 2009 http://www.enotes.com/earth-science/deep-sea-exploration

⁸⁰ https://en.wikipedia.org/wiki/Deep-sea exploration

waves that reach towering heights, travel vast distances, and can play a key role in the mixing of ocean waters, helping drive warm surface waters downward and drawing heat from the atmosphere. Because these internal waves are hard to detect, it is often a challenge to study them directly in the ocean.⁸¹

In year 610, Quran talks about the total darkness produced by sea waves, one over the other, producing such darkness to human eye that when he holds out his hand, he almost cannot see it [24:40]- thereby revealing the mysteries of deep-sea darkness, well before the above-mentioned scientific findings.

The Rain forms when from Sleet in the upper atmosphere:

Allah Says: He is the One Who Shows you the lightning Causing fear and hope and Raises the heavy cloud. And the thunder Glorifies with His Praise, and (so do) the Angels from His Awe, and He Sends the thunderbolts, so He Hits with these the ones He so Desires to, and they are disputing regarding Allah and He is Mighty in Strength [13:12-13]

(In a lengthy tradition in the interpretation of above Verses) *Prophet said:* <u>And the clouds are at the status of the sieve</u>. Then Allah Reveals to the wind to grind it and melt it, dissolving the water. Then it takes it to such and such a place and pours upon it. So that becomes such and such a torrent and other than that.

Thus, it rains upon the area which it had been Commanded to. There is no drop from the drops except that there is an Angel with it until he places it in a particular place. There does not descend a drop from the sky except that it is numbered precisely and is of a known weight, except when it was the day of the storm in the era of Noah^{as}, on that day it poured without measurement or number'.

Prophet said: 'Allah Made the cloud to be as a sieve for the rain, and the sleet melts until it becomes water, not harming anything by it. The harm is what you see from the sleet and the lightning as a Wrath from Allah Harming whosoever He so desires from His servants'. (an extract).⁸²

Science verifies the presence of ice in the upper atmosphere of all planets, including earth, See for example.⁸³

Briefly, from scientific viewpoint, when air rises, it cools, cold air can't hold as much water vapour than warm air can, so as the air cools, it becomes saturated and the water vapour in it condenses. This means it turns from a gas to a liquid, When the water vapour turns to a

⁸¹ https://news.mit.edu/2013/the-oceans-hidden-waves-show-their-power

⁸² Al Kafi - H 14774

⁸³ https://www.space.com/types-of-clouds

liquid in the sky, it forms lots of tiny little water droplets which cling to little bits of dust; it is this group of little water droplets suspended in the air that becomes visible as the cloud we see.

These droplets of water are only about a hundredth of a millimetre in diameter, but the cloud is made up of a large collection of these. If the cloud is high up enough in the sky and the air is cold enough, the cloud is made of lots of tiny ice crystals instead and gives a thin, wispy appearance.⁸⁴

Water is the source of all living beings:

God Says: Have those who disbelieved not considered that the skies and the Earth were a joined entity, and we separated them <u>and made from water every living thing?</u> Then will they not believe?" [21:30]

Prophet said in a Hadith: And it is due to the water that everything remains, and is alive, just as my Lord Blessed and Exalted Says: And We Made from the water, all living things, so will they not believe? [21:30]'. (an extract)⁸⁵

'A man from the scholars of the people of Syria came up to 5th successor of Prophet (c. 676–732). He said, 'O Abu Ja'far (the 5th successor of Prophet, c. 676–732), I have come to ask you, since a question which has exhausted me in finding one who could explain it to me, and I have asked three kinds of the people about it, so each type from them said something other than what the other one said'.

So, Abu Ja'far said to him: 'What would that be?'

He said, 'I ask you about the first thing what Allah Created from His creatures, for some of the ones I asked said it was the Destiny, and some of them said it was the Pen, and some of them said it was the Spirit'.

So, Abu Ja'far said: 'They have not said anything. I hereby inform you that Allah Blessed and Exalted Existed and there was nothing other than Him, and He was Mighty and there was no one who was mighty before Him, and these are is His Words: Glorious is your Lord, the Lord of Might, from what they are ascribing [37:180], and He was the Creator before the creation, and Had He Created something from His Creation, something from something, then there would be no termination from it (the chain) ever, and it would never cease if Allah had

⁸⁴ https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/clouds/what-are-clouds-and-how-do-they-form

الاختصاص: 33 ⁸⁵

something with Him and He did not precede it. But He Existed when there was nothing other than Him.

And He Created the thing from which are all things, and it is the water from which He Created the things. So, He Lineaged everything to the water and did not Make a lineage for the water to which it can be ascribed. And He Created the wind from the water, then Made the wind to overcome the water. Thereafter, the wind sent down into the body of the water until foam swirled from the water in accordance with what He so Desired it to swirl. Thereafter, He Created from that foam, pure white land with no crack in it, nor any holes, neither ascending nor descending, and no tree. Then He Folded it, so He Placed it on top of the water.

Then Allah Created the fire from the water, so the fire bust out of the body of the water until smoke arose from the water in accordance with Allah so Desired it to rise. So, He Created from that smoke, clear and pure sky in which there were no cracks nor any holes, and these are His Words: Surely, in that is a lesson for one who fears [79:26] Are you the harder to create or the sky? He Built it [79:27] He Raised its ceiling, then Evened it [79:28] And He Covered its night and Extracted its brightness [79:29].

He said: 'And there was neither a sun, nor a moon, nor stars nor clouds. Then He Folded it and Placed it upon the earth, then Established two creations. Then He Raised the sky before the earth, so that is His Words, Mighty is His Mention: And the earth, He Expanded it after that [79:30]. He is Saying that He Spread it out'.

So the Syrian said to him, 'O Abu Ja'far, the Words of Allah the Exalted: Or do they not see, those who are committing Kufr, that the skies and the earth were joined up, and We Separated them? [21:30]'.

So, Abu Ja'far said: 'Perhaps you think that these two used to be stuck together and there were separated from each other?' He said, 'Yes'. Abu Ja'far said: 'Seek Forgiveness from your Lord, for it is in the Words Allah Mighty and Majestic that they were closed up, meaning that the sky used to be closed up and no rain descended from it, and the earth was closed up and did not grow any seed (vegetation). So, when Allah Blessed and Exalted Created the creatures, He Spread therein all kinds of animals. He Opened up the sky by the rain and the earth by the seed'.

The Syrian said, 'I testify that you are from the children of the Prophets^{-as} and that your knowledge is their^{-as} knowledge'.⁸⁶

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⁸⁶ Al Kafi – V 8 H 14515

The taste of Water - is the taste of life

'From Ja'far, he (the narrator) said, 'We were seated in his presence when a man came over and asked him about the taste of water, and we were guessing that he was an atheist.

So, Abu Abdullah (the 6th successor of Prophet, *c. 702–765 CE*) went on to lower his head during it and raised it, then said to him: 'don't you know! The taste of water is the taste of life! Allah Mighty and Majestic is Saying: *And We Made from the water, all living things, so will they not believe?* [21:30]".⁸⁷

Cure from Honey:

Allah Says: "Eat of all the fruits and walk in the ways of your lord submissively. there comes forth from within it a beverage of many colours, in which there is healing for men; most surely there is a sign in this (life of bees) for a people who reflect." [16:69]

'I asked Abu Ja'far (the fifth successor of Prophet, c. 676–732) about the Words of Allah: **And your Lord Revealed unto the bee [16:68]**. He said: 'Inspiration''.⁸⁸

The sixth successor of Prophet (c. 702–765 CE)⁸⁹ said: 'Lick the honey, for there is a healing therein'. He Said: *There comes out from their bellies a drink of different colours wherein is healing for the people [16:69]*'.⁹⁰

Also, the first successor of the Prophet (c. 600–661) said: 'Licking the honey is a healing from every illness. Allah Mighty and Majestic Says: *There comes out from their bellies a drink of different colours wherein is healing for the people [16:69]*, and it is with the recitation of the Quran and chewing frankincense melting the phlegm'.⁹¹

Many health and disease control benefit of honey are well established, as per several studies, i.e., there are several evidences suggest the use of honey in the control and treatment of wounds, diabetes mellitus, cancer, asthma, and also cardiovascular, neurological, and gastrointestinal diseases.⁹²

Drinking rain water, honey, or milk

(It has been narrated) from Abu Abdullah (6th successor of Prophet, c. 702–765 CE), said, 'I was in his presence, so an old man asked him, 'I have pain, and I drink intoxicant (النبيذ) for it,

تفسير العيّاشي 2: 263/ 41. ⁸⁸

قرب الإسناد: 55 ⁸⁷

⁸⁹ https://en.wikipedia.org/wiki/Ja%27far_al-Sadiq

تفسير العيّاشي 2: 263/ 42. ⁹⁰

⁹¹ Al Kafi – V 6 – The Book of Foodstuffs Ch 81 H 2

⁹² https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5424551/

and it has been prescribed for me by the Sheykh (as medicine)?' So he said to him: 'What prevents you <u>from (drinking) the (rain) water which Allah has Made every living thing</u>?' He said, 'It does not agree with me'.

Abu Abdullah said to him: 'So what prevents you from the honey? Allah Says wherein is healing for the people [16:69]?' He said, 'I cannot find it'. He said: 'So what is preventing you from the milk by which your flesh grows, and your bones get stronger?' He said, 'It does not agree with me'. Thereafter, Abu Abdullah said: 'Do you want me that I should order you to drink the intoxicant? No, by Allah, I will not order it'.93

Science: Here it is unclear whether milk helps to strengthen the bones, but health care professionals say milk is a good source of calcium, which is good for healthy bones ⁹⁴, However, science agrees with the benefits of licking honey, e.g., Honey has been linked to health benefits like improved heart health, wound healing, and blood antioxidant status. However, consuming too much may cause adverse effects due to its high sugar and calorie content. Thus, it's best to use honey to replace other forms of sugar and enjoy it in moderation. ⁹⁵ There are also a number of benefits of drinking rain water, as per scientific observations, i.e., Natural Softness, No Chlorine, Low in Sodium, Neutral pH, Reduced Chemical Exposure, Rich In Nutrients, Hydration, Detoxification, Digestion, Joint Lubrication and Enhanced Immune Function ⁹⁶

Appendix I: Quran narrating story of Prophet Isa and his mother

(Surah) Maryam: And mention Maryam in the book when she withdrew from her family to an eastern place [19:16]

So she took a veil from besides them. Then We Sent Our Spirit to her. He was resembled to her as a complete man [19:17]

She said: 'I seek Refuge with the Beneficent from you, if you were pious' [19:18]

He said: 'But rather, I am a Messenger of your Lord to Endow to you a pure boy [19:19]

She said: 'How can there happen to be a boy for me and no man has touched me and I have not been unchaste?' [19:20]

تفسير العيّاشي 2: 264/ 45. ⁹³

⁹⁴ See for example: https://www.bbc.com/future/article/20190408-should-we-drink-milk-to-strengthen-bones

⁹⁵ https://www.healthline.com/nutrition/is-honey-good-for-you#bottom-line,

https://en.wikipedia.org/wiki/Honey

⁹⁶ https://pangbenta.com/drinks/health-benefits-rainwater/

He said: 'Like that your Lord Said: "It is easy unto Me, and We will Make him to be a Sign for the people and a Mercy from Us". And it was a matter Ordained [19:21]

So she bore him, then she withdrew with him to a remote place [19:22]

Then the (pangs of) labour brought her to the palm trunk. She said: 'I wish I had died before this, and was completely forgotten!' [19:23]

So he (the child) called out to her from beneath her: 'Do not grieve! Your Lord has Made a stream (to flow) beneath you' [19:24]

And shake towards you the palm trunk, it would drop upon you ripe dates [19:25]

So eat and drink and refresh the eyes. Then if you see anyone from the human beings, then say: 'I vowed to the Beneficent a Fast, so I will never speak today to a human' [19:26]

And she came with him to her people, carrying him. They said, 'O Maryam! You have come with an amazing thing [19:27]

O sister of Haroun! Your father was not a bad man, nor was your mother unchaste' [19:28]

So she gestured towards him. They said, 'How can we speak to one who was a child in the cradle?' [19:29]

He said: 'I am a servant of Allah; He Gave me the Book and Made me a Prophet [19:30]

And He has Made me Blessed wherever I may be, and He has Enjoined upon me with the Salat and the Zakat for as long as I live [19:31]

And righteousness with my mother, and did not Make me tyrannous, wretched [19:32]

And the Peace was upon me on the day I was born, and on the day I die, and on the day I am Resurrected alive [19:33]

That is Isa, son of Maryam. The truthful words which they are disputing in [19:34]

It was not for Allah that He should Take a son; Glorious is He. Whenever He Decrees a matter, He says to it "Be," so it comes into being [19:35]

And she (Maryam) who guarded her chastity, so We Breathed into her from Our Spirit and Made her and her son to be as a Sign for the worlds [21:91]

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And (an example of) Maryam, daughter of Imran, who guarded her chastity, so We Breathed into it (her body) from Our Spirit and she ratified the Words of her Lord and His Books, and she was from the obedient ones [66:12].	
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