

	difficult to overcome
Humans from apes	<p>The common depiction in which an ape is transforming into a human linearly through intermediate stages is incorrect and a reflection of the misunderstanding surrounding evolution</p> <ul style="list-style-type: none"> - This erroneous diagram has played an important role in perpetuating the belief that humans are derivatives of monkeys
<p>Microevolution</p> <p>Example</p> <p>Macroevolution</p> <p>Example</p> <p>Genotype - genetic level</p> <p>Phenotype - observable level</p>	<p>Microevolution is referred to as the changes between individuals within a species</p> <ul style="list-style-type: none"> - Two cats with different colors <p>Macroevolution is the change across species</p> <ul style="list-style-type: none"> - Fish evolving to reptiles <p>They are both governed by the same processes of heredity and variation</p> <ul style="list-style-type: none"> - Heredity is what is genetically passed on from the parent generation to the daughter generation - Variation is what differs <ul style="list-style-type: none"> - Tiny variations in the genotype lead to changes in the phenotype through accumulation over a long enough period of time
<p>Process of evolution</p> <p>Natural selection</p>	<p>The process of evolution has both a deterministic and a random aspect to it</p> <ul style="list-style-type: none"> - Natural selection is the deterministic part in which nature will flush out what entities are more likely to survive - The random aspect comes from the mutations of the genotype which occur for a variety of reasons and are the fundamental source of variation <p>Nature will choose the species that are most suited to survive in a given environmental context</p> <ul style="list-style-type: none"> - If there were black and white mice living on a largely black terrain with predatory eagles in the vicinity then the white mice population would decrease as they would get picked out much more easily <ul style="list-style-type: none"> - The genes responsible for the white color in mice would eventually fade out <p>Neo-Darwinian evolution is the interplay of two primary mechanisms of random mutation and natural selection</p>
Deep time	<p>Evolution is a gradual process and requires a very long time</p> <ul style="list-style-type: none"> - As entities successively reproduce, there are cumulative, gradual changes that lead to speciation, which in turn produce the biodiversity we see in our animal and plant kingdoms

	<p>The science of geology has determined that earth itself was formed around 4.6 billions of years ago (bya) and our earliest evidence of life on earth is from around 3.5 bya</p>
How new species are formed	<p>Species refer to organisms that can interbreed with one another</p> <ul style="list-style-type: none"> - When two organisms cannot interbreed, they are classed as two different species <p>Speciation only requires that a subset (and thus not all) of the parent species picks up enough changes to evolve into a new species</p> <p>Evolution is not a linear process</p> <ul style="list-style-type: none"> - Some interpret evolution simplistically as a linear change in which species in a given time all evolve progressively towards a final goal <ul style="list-style-type: none"> - Evolution is based on probabilistic mechanisms that follow no clear path of predictability - Since the mutations are entirely random, there isn't any inherent direction towards anything
Core concepts of Neo-Darwinian Evolution	<p>Deep time – a long period (millions and billions of years) has occurred</p> <p>Common ancestry – all living entities are biologically connected and have a historical lineage</p> <p>Causal mechanics – random mutations and natural selection are the driving forces of the process</p>
<p>Evidence for evolution</p> <p>Discovery of Tiktaalik</p>	<p>Fossil record - the fossil record has received significant substantiation which evinces gradual evolution of biological organisms</p> <ul style="list-style-type: none"> - The earth's crust is stratified, which means that there are several layers in the ground - Each layer corresponds to a particular time in the history of the earth <ul style="list-style-type: none"> - Older layers are deeper in the ground - There seems to be a broad increase in organisms' complexity as we move from the older strata to the more recent ones - An important discovery because it had the basic features seen with fish and land-based animals, clearly showing some kind of transition <ul style="list-style-type: none"> - The general narrative is that life started at sea. Over several million years as fish began to exist and evolve, they somehow developed properties that allowed them to access land - Evolution provides the best narrative for such discoveries <p>Homology - the study of shared features that exist in different species due to a common ancestor</p>

	<ul style="list-style-type: none"> - When a parent species population evolves, it is possible that some of the basic features that were once in the parent species have transformed in these offspring species depending on the different environmental pressures they have experienced <ul style="list-style-type: none"> - Humans have hands which are functionally different to dogs' legs, a whales' fin, and a bat's wing <ul style="list-style-type: none"> - Although different in their overall anatomy, we can still observe similarities in their specific bone structure - Homology helps explain these striking similarities <p>Genetics - we see the relative genetic similarities in the chromosomes of orangutans, apes, chimpanzees, and humans, which is a significant line of evidence suggesting common ancestry between them</p>
Charles Darwin	<p>Wrote <i>On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life</i></p> <ul style="list-style-type: none"> - It is Darwin's stress on evolution being driven by natural selection that is referred to as Darwinism
Debate among scientists on evolution	<p>Advocates of Neo-Darwinism and the other scientific alternatives aren't debating over whether evolution occurred, rather they differ on how evolution occurs</p> <ul style="list-style-type: none"> - The Neo-Darwinian paradigm stresses natural selection and random mutation as the primary mechanisms of evolution <ul style="list-style-type: none"> - Critics argue that there needs to be an acknowledgement of other causal factors - This debate does not undermine the validity of evolution as a whole, i.e. deep time and common ancestry
Objections to evolution	<p>"Evolution is just a theory"</p> <ul style="list-style-type: none"> - There is a difference between how the term theory is used colloquially and scientifically - In a colloquial sense, theory means conjecture or a guess - A scientific theory is a model that best explains the facts and makes testable predictions and if it continues to align with newly discovered facts, it remains a valid theory <ul style="list-style-type: none"> - A valid theory is the highest level of substantiation you can get in science - It is a categorical error to use "evolution is just a theory" to dismiss evolution <p>"Evolution isn't falsifiable"</p> <ul style="list-style-type: none"> - Not being falsifiable, a condition of science, means that any data considered under a theory somehow ends up supporting the theory, even when there are contradictory data points - The theory of evolution could be refuted when an advanced species expected to be in an earlier stratum is found in an

<p>Primary versus secondary causation</p>	<p>older stratum</p> <ul style="list-style-type: none"> - This is because the theory of evolution states that as we progress in time, the complexity and biodiversity of the species generally increase <p>“The fossil record is gappy”</p> <ul style="list-style-type: none"> - Scientists recognise that the fossil record is necessarily incomplete and even explain why this is the case <ul style="list-style-type: none"> - Bone and tissue preservation can occur in a very limited number of conditions - Even if fossilized, they could have eventually eroded or decomposed - Even from the samples we do find, the amount we obtain in their fully-fledged form is rare - While the fossil record on its own could be considered uncertain if interpreted in isolation, there are independent lines of evidence which corroborate the theory of evolution <ul style="list-style-type: none"> - Evolution is now supported by genetics, biogeography, homology and many other distinctive fields - Independent sources of evidence leading to the same conclusion gives us strong epistemic support that evolution is true <p>“Scientists disagree about evolution”</p> <ul style="list-style-type: none"> - Science, like most disciplines, never comes with complete answers, and will always be a work in progress - Dissensions amongst scientists simply indicates that things need to be mulled over and further work needs doing <p>Evolution can't explain the origin of life</p> <ul style="list-style-type: none"> - The science behind how life originated from basic inert matter remains speculative - There is a difference between the origin of life and the origin of species. <ul style="list-style-type: none"> - The former attempts to explain how life started while the latter explains how species exist - Evolution only addresses the latter - Evolution is the scientific explanation of the origin of species and makes no claims about how life started <ul style="list-style-type: none"> - Thus, to critique evolution because it doesn't explain how life started is a misdirected criticism of evolution - If scientists did eventually come up with a scientifically plausible scenario through which life originates, this would seem to make God unnecessary in the process <ul style="list-style-type: none"> - This presumes nature (or science) and God are competing explanations for life's origins - A scientific explanation attempts to understand how nature operates (secondary causation), which is always directed and sustained by God (primary
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<p>Philosophical naturalism versus Methodological naturalism</p> <p>Genetic fallacy</p>	<p>causation)</p> <p>“Evolution is naturalistic and atheistic”</p> <ul style="list-style-type: none"> - Naturalistic entails that there is no appeal to any supernatural entities or powers <ul style="list-style-type: none"> - In Islamic thought there is the conception of supernatural agency and forces such as God and angels <ul style="list-style-type: none"> - Muslims have generally had no problem doing science because they understood it as unveiling how God runs the universe - Those worried about evolution should be equally worried about chemistry and meteorology and electrical engineering for they all proceed under a naturalistic assumption <ul style="list-style-type: none"> - But no one thinks that these naturalistic sciences imply that God does not exist - Theists can treat evolution as a descriptive account of how nature works to create different species without negating its underlying attribution to God - Philosophical naturalism is a metaphysical position that states that nature is all there is - Methodological naturalism is a position that limits science to understanding the natural world while remaining silent on the existence of supernatural agencies <ul style="list-style-type: none"> - Theists can comfortably adopt MN <p>“Evolution undermines morality”</p> <ul style="list-style-type: none"> - The worry is that under an evolutionary framework morality loses its objectivity - The theological framework adopted entails that morality is entirely dependent on God’s will and not on the natural world <ul style="list-style-type: none"> - This implies that there isn’t anything intrinsically objective about morality <ul style="list-style-type: none"> - The will of God determines entirely what is morally right and wrong <p>“Charles Darwin was an atheist”</p> <ul style="list-style-type: none"> - The charge against evolution is that it came from an atheist, and therefore Muslims should not adopt it - Even if Darwin was an atheist and came up with the theory of evolution, his atheism has no bearing on the theory of evolution <ul style="list-style-type: none"> - The act of rejecting or accepting arguments or information based solely on their source of origin rather than their content
<p>Creation of the heavens and the</p>	<p>The Qur’ān is similar to the Bible in that it mentions God having created everything in six days</p>

<p>earth</p>	<ul style="list-style-type: none"> - “Your Lord is God, who created the heavens and earth in six days” إِنَّ رَبَّكُمُ اللَّهُ الَّذِي خَلَقَ السَّمَاوَاتِ وَالْأَرْضَ فِي سِتَّةِ أَيَّامٍ - In classical Arabic, the word for days (ayyām) could mean 24-hour days, or it could mean six spans of time with any duration <ul style="list-style-type: none"> - “A day (yawm) with your Lord is like a thousand years by your reckoning” وَلِإِنَّ يَوْمًا عِنْدَ رَبِّكَ كَأَلْفِ سَنَةٍ مِّمَّا تَعُدُّونَ
<p>Creation of (non-human) life</p>	<p>It is mentioned throughout the Qur’ān that God is the creator of everything اللَّهُ خَالِقُ كُلِّ شَيْءٍ</p> <p>The Qur’ān seems to indicate that life started with water وَجَعَلْنَا مِنَ الْمَاءِ كُلَّ شَيْءٍ حَيٍّ</p> <ul style="list-style-type: none"> - The process through which this happens is not mentioned <p>There doesn’t seem to be anything conclusive in Islamic scripture that warrants a rejection of plant or animal evolution</p> <ul style="list-style-type: none"> - We even see this amongst some Muslim thinkers who distinguish between non-human evolution and human evolution
<p>Creation of Adam</p>	<p>The Qur’ān makes general claims about humankind’s creation from base materials such as dust, earth, clay, dark mud, and seminal fluid</p> <ul style="list-style-type: none"> - “People, [remember,] if you doubt the Resurrection, that We created you from dust, then a drop of fluid, then a clinging form, then a lump of flesh, both shaped and unshaped” يَا أَيُّهَا النَّاسُ إِنْ كُنْتُمْ فِي رَيْبٍ مِّنَ الْبَعْثِ فَإِنَّا خَلَقْنَاكُمْ مِنْ تُرَابٍ ثُمَّ مِنْ نُطْفَةٍ ثُمَّ مِنْ عَلَقَةٍ ثُمَّ مِنْ مُّضْغَةٍ مُّخَلَّقَةٍ وَغَيْرِ مُّخَلَّقَةٍ <p>Some verses which mention how God created Adam from base materials and then injected into Adam a spirit</p> <ul style="list-style-type: none"> - “He first created man from clay, then made his descendants from an extract of underrated fluid. Then He molded him; He breathed from His Spirit into him” وَبَدَأَ خَلْقَ الْإِنسَانِ مِن طِينٍ ثُمَّ جَعَلَ نَسْلَهُ مِن سُلَالَةٍ مِّن مَّاءٍ مَّهِينٍ ثُمَّ سَوَّاهُ وَنَفَخَ فِيهِ مِن رُّوحِي - “Your Lord said to the angels, ‘I will create a man from clay. When I have shaped him and breathed from My Spirit into him, bow down before him.’” إِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي خَالِقٌ بَشَرًا مِّن طِينٍ فَإِذَا سَوَّيْتُهُ وَنَفَخْتُ فِيهِ مِن رُّوحِي فَقَعُوا لَهُ سَاجِدِينَ <p>People are called the children of Adam in the Quran and hadith</p> <ul style="list-style-type: none"> - “O children of Adam, do not let Satan put you in trouble the way he had your parents expelled from Paradise” يَا بَنِي آدَمَ لَا يَفْتِنَنَّكُمُ الشَّيْطَانُ كَمَا أَخْرَجَ أَبَوَيْكُم مِّن الْجَنَّةِ - “So they will go to Adam and say, ‘You are the father of all the people, and God created you with His Own Hands, and ordered the angels to prostrate to you’”

	<p style="text-align: right;">فَيَأْتُونَ آدَمَ فَيَقُولُونَ أَنْتَ أَبُو النَّاسِ خَلَقَكَ اللَّهُ بِيَدَيْهِ وَأَسْجَدَ لَكَ مَلَائِكَتُهُ</p> <p>The Qur'ān makes it apparent that humanity can be traced down to a single couple, i.e. Adam and Eve</p> <ul style="list-style-type: none"> - “It is He who created you all from one soul (nafsin wāḥidatin), and from it made its mate” هُوَ الَّذِي خَلَقَكُمْ مِنْ نَفْسٍ وَاحِدَةٍ وَجَعَلَ مِنْهَا زَوْجَهَا <p>The Qur'ān clearly mentions Adam's fall from the garden</p> <p>In the Qur'ān Adam is specifically mentioned as being created by God's two hands</p> <ul style="list-style-type: none"> - “Iblīs, what prevents you from bowing down to the man I have made with My own [two] hands?” قَالَ يَا إِبْلِيسُ مَا مَنَعَكَ أَنْ تَسْجُدَ لِمَا خَلَقْتُ بِإَيْدِي - The fact that this verse mentions God's two hands (in comparison to God's hand and God's hands) is exclusive to Adam <ul style="list-style-type: none"> - Ibn Taymiyyah, al-Bayhaqī, and al-Bayḍāwī all agree that this illustrates the uniqueness of Adam's creation in comparison to other creations <p>One of the most important verses in the context of Islam and evolution</p> <ul style="list-style-type: none"> - “In God's eyes Jesus is just like Adam: He created him from dust, said to him, ‘Be’, and he was” إِنَّ مَثَلَ عِيسَىٰ عِنْدَ اللَّهِ كَمَثَلِ آدَمَ خَلَقَهُ مِنْ تُرَابٍ ثُمَّ قَالَ لَهُ كُنْ فَيَكُونُ - This verse presents an argument against the divinity of Jesus and the logic of the argument is built upon the premise of Adam's miraculous creation, i.e. not having parents
<p>Four positions of Muslims regarding evolution</p>	<p>Creationism</p> <ul style="list-style-type: none"> - Rejection of any entity (non-humans, humans, Adam) being a part of evolutionary processes <p>Human exceptionalism</p> <ul style="list-style-type: none"> - Permits non-human evolution, but believes Adam (who in this position is considered the first human) and humanity are not products of evolution <p>Adamic exceptionalism</p> <ul style="list-style-type: none"> - Idea that non-humans and humans are a product of evolution but Adam is an exception to that process (which then entails that Adam is not considered to be the first human) <p>No exceptions</p> <ul style="list-style-type: none"> - Position that there are no exemptions from the process (so non-humans, humans, and Adam are all products of evolutionary processes)

Creationism	Advocates in this camp believe that common ancestry is entirely untrue
Zakir Naik	Rejects evolution believing it's "just a theory," assuming that the colloquial understanding of the term "theory" means the same thing as the scientific one <ul style="list-style-type: none"> - This could be because he actually thinks evolution isn't compatible with Islamic scripture
Seyyed Hossein Nasr	Criticized the components related to the science of evolution such as the chance-like mechanism embedded in the process; there being holes in the theory; the constant revisions that the theory has gone through historically, which further suggests that it is a theory in crisis; and the problems associated with the science of the origins of life
Muzaffar Iqbal	Emphasizes the notion of design that seems to go against the notion of chance as propounded by the theory of evolution <ul style="list-style-type: none"> - If it could be proved that there exists no design in the emergence of species (or individual organs) and that each species and organ becomes perfect through gradation, as Darwin proposed, then one can eliminate not only the Design, but also the Designer - He also criticizes attempts to read evolution into isolated verses without considering Islamic scripture holistically
Muḥammad Saʿīd Ramaḍān Al-Būṭī	He had two broad criticisms against the theory, one being scriptural and the other scientific <ul style="list-style-type: none"> - The scientific contentions parallel "evolution is just a theory" - From the scriptural side, he takes Adam's creation narrative as a given and highlights the uniqueness and nobility of humans <ul style="list-style-type: none"> - "We have honored the children of Adam" - "We created man in the finest state"
Shihabuddin Nadvi	Argued against allegorical interpretations of Adam; to say otherwise has consequences, which includes rendering other prophets in Islam to be mythical realities <ul style="list-style-type: none"> - Adam is mentioned in the Qur'ān alongside Noah, Abraham, and Jesus <ul style="list-style-type: none"> - "God chose Adam, Noah, Abraham's family, and the family of Imran, over all other people" - "In God's eyes Jesus is just like Adam" <ul style="list-style-type: none"> - It would be arbitrary to call Adam an allegory and not the others, making for an inconsistent, ad hoc, and whimsical reading
Human exceptionalism	Distinguish between human and non-human evolution
Nuh Ha Mim Keller	Believes evolution is an all-absorbing theory which doesn't seem to have any internal falsification criteria and points to a lack of evidence

<p>Yasir Qadhi and Nazir Khan</p>	<p>for macroevolution</p> <ul style="list-style-type: none"> - Keller is clear that non-humans could have been created through the process of evolution, even though he has his reservations about the science; but humans are categorically excluded from the process - “Belief in macro-evolutionary transformation and variation of non-human species does not seem to me to entail kufr or shirk unless one also believes that such transformation came about by random mutation and natural selection, understanding these adjectives as meaning causal independence from the will of Allah ... From the point of view of tawhid, Islamic theism, nothing happens ‘at random,’ there is no ‘autonomous nature’” - Acknowledges the distinction between the evolution of humans and the evolution of every other species <ul style="list-style-type: none"> - Adam was created in heaven and therefore not on earth - Adam was also created in a particular way that He describes to us: <ul style="list-style-type: none"> - ‘Verily, I am to create a man from clay; So when I have formed him well, and blown into him a-kindling of My spirit, fall you down to him prostrate.’ He said, ‘O Satan, what prevented you from bowing down to what I created with My own hands’ <p>They divide the current participants of the discourse into two categories: those who have completely abandoned anything that traditional Islamic scholarship has to offer on the subject and those who reject anything science has to offer on biological diversity</p> <ul style="list-style-type: none"> - What is needed is a balanced approach “that attempts to integrate scripture and science ... and a deeper reflection on the precise theological conclusions that can be derived from Islamic scripture” - They discuss three different hermeneutic approaches that can be found in the classical Islamic tradition: those of Avicenna, al-Ghazālī, and Ibn Taymiyyah <ul style="list-style-type: none"> - Al-Ghazālī criticizes Avicenna on his allegorical interpretations of miracle stories in the Qur’ān <ul style="list-style-type: none"> - Al-Ghazālī’s framework involves taking Islamic scripture at face value unless there is a valid logically deductive argument (burhān) that requires a non-literal interpretation (ta’wīl) <ul style="list-style-type: none"> - The Qur’ānic verses mentioning God’s hands as an example, cannot be literally referring to a hand since God is atemporal and non-spatial - In moments of conflict, Ibn Taymiyyah opts for giving revelation preference <ul style="list-style-type: none"> - Ibn Taymiyyah agrees that reason establishes
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	<p>revelation, but after that one should submit to what “scripture states unconditionally and without challenging it on the basis of fallible and fundamentally limited human reasoning”</p> <ul style="list-style-type: none"> - In the Taymiyyan paradigm when the textual evidence is explicit and unequivocal, there can be no recourse to reinterpretation <ul style="list-style-type: none"> - In cases of ambiguity, then one can adopt any reading as long as it falls under the linguistic constraints of language, reason, and science <ul style="list-style-type: none"> - Example of “sittati ayyām” in the Qur’ān, as ayyām is ambiguous, one could validly interpret this as six 24-hour days or six spans of time - “In the case of the story of human origins, we have such an explicit narrative, one that is deeply rooted in countless passages throughout the entire Qur’ān and numerous prophetic statements, that there is no choice other than to accept that this is what Allah intended for us to believe” <ul style="list-style-type: none"> - This doesn’t entail a wholesale rejection of evolution <ul style="list-style-type: none"> - “There is nothing in Islamic scripture that explicitly negates the concepts of abiogenesis, genetic mutation and diversification, natural selection, the existence of hominid species, or a common ancestor for all biological life on earth, excluding only the descendants of Adam” - What science can affirm as truth when it comes to the unobservable is considerably limited unlike that which is directly observable <ul style="list-style-type: none"> - “No human being can go back in time and determine precisely what happened at the time of Adam and Eve, and thus it constitutes something empirically unobservable, a matter of the unseen (ghayb)” <ul style="list-style-type: none"> - Accordingly, science can neither prove nor disprove the existence of Adam
<p>Adamic exceptionalism</p> <p>David Solomon Jalajel</p>	<p>Adam is an exception to the evolutionary process</p> <p>Suggests that a Muslim can believe in the compatibility of Islam and evolution</p> <ul style="list-style-type: none"> - He determines that the Sunnī hermeneutical methods cannot provide a reading of scripture where Adam has parents <ul style="list-style-type: none"> - If Adam is born without a father and a mother, how can this be reconciled with evolution? <ul style="list-style-type: none"> - Jalajel utilizes the principle of theological tawaqquf (to refrain from having any opinion due to the complete absence of textual evidence on that topic) - Jalajel uniquely divorces the connection between the creation

	<p>of Adam with the start of humanity</p> <ul style="list-style-type: none"> - The Qur'ān doesn't affirm nor negate the idea of there being already-existing humans on earth when Adam descended from heaven - There is a plausible scenario of Adam descending to earth and there being humans on earth who were created through the process of evolution
No exceptions	Proponents in this camp assert that there are no exceptions to the process of evolution, whether non-humans, humans, or Adam
Rana Dajani	<p>"The story of Adam in the Qur'ān as well as other stories should not be taken literally. They are metaphors to learn lessons"</p> <ul style="list-style-type: none"> - The word <i>khalaqa</i> does not necessarily mean spontaneous it could be interpreted as over a period of time - "Muslims don't have a problem with the sun and stars taking billions of years to be created but they do have an issue with living things or specifically humans taking millions of years to be created"
Muhammad Iqbal	<p>He suggests that Adam isn't a real historical actor as such but more of a symbol for humankind</p> <ul style="list-style-type: none"> - "The word Adam is retained and used more as a concept than as the name of a concrete human individual"
Nidhal Guessoum	<p>He adopts the position that there can be no tension between scripture and reality, and he argues against literalism being the dominant hermeneutic narrative</p> <ul style="list-style-type: none"> - Guessoum seems to suggest a reading where an evolutionary reading is possible - "No one can ignore or reject the facts of evolution (on any grounds) and expect to be taken seriously; this applies equally to the special area of human evolution and to the general field of biology"
Israr Ahmad	<p>For him, the word <i>bashar</i> could refer to any biological species belonging to the genus of Homo, including Homo sapiens, while <i>insān</i> refers to Homo sapiens with the infusion of the soul</p> <ul style="list-style-type: none"> - "There is very strong insinuation in the Qur'ān that Adam was one chosen bashar and he became Adam after Allah blew into him out of His spirit" - "Your Lord said to the angels, 'I will create a man (bashar) from clay'"
T.O. Shanavas	<p>He rejects the idea that humanity started with a single couple, i.e. Adam and Eve, and believes that God divinely selected Adam amongst many humans that were already present on earth</p> <ul style="list-style-type: none"> - His motivation for an evolutionary reading seems to stem from the problem associated with genetic bottlenecks, which is

Caner Taslaman	<p>when a population is so small that it doesn't have enough genetic diversity</p> <ul style="list-style-type: none"> - Genetic diversity is important in evolution because it leads to several health issues in offspring and potential extinction <p>There is nothing definitive in Islamic scripture which either affirms or negates evolution in toto, including Adam</p> <ul style="list-style-type: none"> - Tenets of faith can only be based on mutawātir ḥaḍīth <ul style="list-style-type: none"> - Since the details of creation and origins of non-human and human life are based on āḥād ḥaḍīth, the ḥaḍīth corpus is irrelevant for evolution - The Qur'ānic verses related to evolution are open to interpretation <ul style="list-style-type: none"> - He interprets Adam's garden as an earthly one - The similitude between Adam and Jesus doesn't warrant a reading of Adam's miraculous creation <ul style="list-style-type: none"> - Since Jesus had a mother and was born through the normal processes of pregnancy and delivery, this suggests that Adam had a mother and was born through natural processes too
Non-human evolution	<p>It is not scripturally clear whether non-humans were created instantaneously or through gradual processes</p> <ul style="list-style-type: none"> - Keller, Qadhi, and Khan, all of whom are trained theologians, don't have any (theoretical or actual) issue with non-human evolution
Intelligent Design	<p>Presented as a scientific alternative to evolution, ID believes that evolution is scientifically inadequate because some aspects of creation are so complex that it cannot be attributed to natural selection and random mutation</p> <ul style="list-style-type: none"> - Entities which reflect highly designed features indicate an intelligent designer created them <ul style="list-style-type: none"> - No explicit claim is made on who or what the intelligent designer is <ul style="list-style-type: none"> - The designer could be space aliens from Alpha Centauri; time travelers; or some utterly unknown intelligent being - The theory of ID does not challenge the idea of evolution defined as either change over time or common ancestry, but it does dispute the Darwinian idea that the cause of biological chance is wholly blind and undirected <ul style="list-style-type: none"> - The chance-like process which Neo-Darwinian evolution relies on is so incredibly indeterminate, that the likelihood of getting complex biological properties is absolutely minuscule <ul style="list-style-type: none"> - If the bag of letters is turned upside down repeatedly, forming words of varying length
Stephen Meyer	
Scrabble analogy	

<p>Watchmaker analogy</p> <p>William Paley</p>	<p>each time, a blindfolded person would have reason to suspect that the words were being purposely arranged by someone else</p> <ul style="list-style-type: none"> - Biological structures like amino acids, proteins, cellular assemblies, and organisms are designed so precisely, against the vast array of possibilities that don't give them functionality and complexity (in random simulations as suggested by Neo-Darwinism), that it is akin to believing the impossible <p>If a pocket watch is found on the ground, it is most reasonable to assume that someone dropped it and that it was made by at least one watchmaker, not by natural forces</p> <ul style="list-style-type: none"> - “Every manifestation of design, which existed in the watch, exists in the works of nature; with the difference, on the side of nature, of being greater or more, and that in a degree which exceeds all computation”
<p>Hatem al-Haj</p>	<p>It is not compatible with Islam to deny that human beings are all descendants of Adam and Eve</p> <ul style="list-style-type: none"> - “O mankind, indeed We have created you from male and female” <p>يَا أَيُّهَا النَّاسُ إِنَّا خَلَقْنَاكُمْ مِنْ ذَكَرٍ وَأُنْثَى</p> <p>The tradition and the apparent meanings of many scriptural texts indicate that Adam was created directly by God and did not descend from apes</p> <ul style="list-style-type: none"> - “O Iblīs, what prevented you from prostrating to that which I created with My hands?” <p>قَالَ يَا إِبْلِيسُ مَا مَنَعَكَ أَنْ تَسْجُدَ لِمَا خَلَقْتُ بِإِيْدِي</p> <ul style="list-style-type: none"> - “The people are from Adam, and Adam is from dust” <p>النَّاسُ مِنْ آدَمَ وَآدَمُ مِنْ تُرَابٍ</p> <ul style="list-style-type: none"> - To deny the apparent meanings of the above texts would require a new system of hermeneutics and an overhaul of the established hermeneutical system <p>It is not incompatible to believe, to some degree, in some forms of the natural selection and adaptation theory and the development of new characteristics in certain species</p> <p>There is no decisive scriptural evidence that, apart from humans, other creations could have not evolved from others</p> <p>Scriptural proofs should not conflict with findings of empirical senses</p> <p>The evolution theory has many problems from within, such as the missing links between the species in the fossil record and genetic mutations cannot explain the perfection of creation since they typically</p>

	<p>bring about disease and deficiencies</p> <ul style="list-style-type: none"> - The theory does not provide any answer to the important question: how did all of this come about in the first place? <p>A person becomes kafir if he denies an agreed upon clear unequivocal text of the Qur'an or the Mutawatir sunnah or a must-be-known teaching of Islam</p> <p>One should refrain from investigating that which was concealed from us because uncovering al-ghayb (the unseen that is beyond our reach) is unattainable</p> <ul style="list-style-type: none"> - People should have a humble understanding of what they were told in the Qur'an and Sunnah and consign the ultimate reality of these matters to God
Salman Younas	<p>The dominant viewpoint among scholars is that human evolution is in direct contradiction of the primary texts affirming a direct creation for Adam who was the first human being</p> <ul style="list-style-type: none"> - The Qur'an indicates that Adam did not arise from a prior species <ul style="list-style-type: none"> - "When your Lord said to the angels: I am going to create man from clay. So, once I make him perfectly and breath My spirit into him, you must fall down in prostration before him" - The Qur'an does not state the same regarding non-human species <ul style="list-style-type: none"> - Some scholars have differentiated between human evolution and non-human evolution <ul style="list-style-type: none"> - Even when evolution is accepted for non-humans, it is still understood as an act of God stemming from His will and power <ul style="list-style-type: none"> - Evolution as random mutation and natural selection causally independent of God is decisively rejected
Framework for reconciling between texts and empirical evidence	<p>A decisive text takes precedence over the probabilistic</p> <ul style="list-style-type: none"> - A decisive text can only be conditioned by something that is decisive <ul style="list-style-type: none"> - Whenever a literal reading seems to contradict a decisively established point of fact, that verse or saying is interpreted in a manner that accords to this established fact
Is belief in human evolution kufr?	<p>It is not necessarily the case that such a belief is literal disbelief (kufr) especially as it relates to those who continue to affirm God's creative power and will, that Adam was a real human, and that he was in some manner created by God</p> <ul style="list-style-type: none"> - Disbelief, defined as denial and disavowal, is not necessarily applicable to those who reach unsound conclusions

	<ul style="list-style-type: none">- A number of Muslims who affirm evolution do not deny the Qur'an but interpret it in an erroneous manner
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