

Evolution: What is it and why do we have it?

Has anyone ever encountered this topic before?

This conversation has been debated since 1859 when Charles Darwin proposed this theory.

Theory- a supposition or a system of ideas intended to explain something, especially one based on general principles independent of the thing to be explained. **Ex- DARWINS THEORY OF EVOLUTION.** This was the first example of theory that popped up. Which is interesting since it is taught as fact, and has been taught as fact since it's birth.

Charles Darwin- 02/12/1809-04/19/1882. He was English. Naturalist, Geologist, and biologist.

On the Origin of Species- Charles Darwin's Magnum Opus (most important or influential work)

- This book outlines Darwin's theory, AS WELL AS, the issues that couple his theory that are still present to this day.

When speaking with someone regarding Evolution we must ask them "What do you mean" when you say evolution?

- Evolutionary Change in a single species does take place
- We can observe how plants and animals today differ from those that lived in the past.
 - o People breed dogs, goats, to get the result they desire. The animal/plant's DNA is split and combined to create the new animal/plant (not new species).
- These are studied and true in nature. We can view these changes in a single lifetime.
- To put it generally, **Micro-evolution** can be monitored and observed within species, **Macroevolution** involves the history of the earth and the process by which animals/plants everything have evolved over the last 3.5 billion years.

Materialism- Keep in mind that majority of scientists that hold to Neo-Darwinism are Materialists, meaning they only believe the physical universe is ALL that there is. That is the scope they operate under.

Evolutionary Theory (as proposed by Darwin, called Neo-Darwinism today)- *Descent with modification.*

Proposition that seeks to explain all life on earth evolved from a single primitive species that lived about 3.5 Billion years ago. Page 223 in Crains book.

For the sake of this course, we will keep with the term **Neo-Darwinism-** which is the contemporary view of Darwin's theory combining Evolution with random mutation and survival of the fittest.

"At some point in the earth's early history a single self-replicating life form emerged, if not from Darwin's 'warm little pond' then from a sea of prebiotic chemicals. Like organism today, this original organism could reproduce to create new organisms with a nearly identical genetic code, except for some small errors called 'mutations', which occurred during replication. The vast majority of such mutations were either neutral or harmful. But, very infrequently a mutation was beneficial and the new organism was able to produce more offspring than its neighbors. Eventually, the descendants of this new mutant organism came to dominate the population of its local environment. Occasionally, populations of organisms became reproductively isolated, often due to physical barriers like mountain ranges or oceans, but also due to genetic factor. These isolated populations then evolved independently, diverging until

they became sufficiently distinct to be considered different species. Through these mechanism, new species were generated, leading to the diversity we observe in the world today.” Neil Shenvi 162. This is Darwinism.

The understanding is that this is a gradual process that occurs UNGUIDED in nature.

How do you think this theory of evolution affected the Jesus worshipping church in 1859 as Darwin’s Magnum Opus exploded around the world?

- Time Magazine- “all life is the result of of timeless evolutionary forces.”
- Darwin’s “greatest accomplishment as to show how the development of life is the result of natural process, natural selection, without any need to resort to a Creator” **Biologist Francisco Ayala.**
- “As far as Christianity was concerned, the advent of the theory of evolution was catastrophic, the decline in religious belief can probably be attributed more to the propagation and advocacy by the intellectual and scientific community of the Darwinian version of evolution than to any other single factor.” **Michael Denton, Australian molecular biologist.**
- “By coupling undirected, purposeless variation to the blind, uncaring process of natural selection, Darwin made theological or spiritual explanations of the life processes superfluous.” **Evolutionary Biology Textbook**
- **Richard Dawkins-** “Darwin made it possible to be an intellectually fulfilled atheist.”

Evolutionary Theory as defined prior rests on three foundational premises. According to Neil Shenvi page 161.

1. Species of life on earth have changed over the course of earth’s history.
2. All species are descended from a single ancestral organism (universal common descent)
3. Random mutation and natural selection are the primary drivers of modern biodiversity (the diversity in the animal and plant kingdom we see today.) These are HOW we have the diversity in the animal and plant kingdom we see today. (I am including man and woman in the animal kingdom with this theory)

First Premise:

- This premise is accepted by biologist today, young or old earth, evolutionists or theist. No one denies that the fossil record shows that species have changed over the course of time. There are no more dinosaurs, and we can see how some animals have adapted to environmental pressures. On a small scale, micro-evolution, this is true. We can see breeds of dogs change after someone breeds them to achieve the kind of dog they wish to have. This premise is not so controversial.

Second Premise:

- This one is more controversial, but still SOME room in agreement than we might think. Creationists, both those who hold to a young-earth view and those who hold to an old earth view accept limited common descent, just not universal. They would affirm that many distinct modern species shared the same common ancestor but would place limits on the amount of

change that can occur within a given population of organisms. There are creationists (people who believe God was the author of life) who believe that all life as we see today came from one common ancestor.

Third Premise:

- The real source of conflict is the idea that random mutation and natural selection are the primary drivers of all modern biodiversity. Has science demonstrated that this third premise is true? No. All according to Neil Shenvi.
 - o **Random Mutation:** Mutations at random occur regardless of whether they would be useful to the individual or not. The philosophical assumption with random mutation means that God is not involved with the changing over time, there is nothing that is directly causing the mutations. They are just occurring. A random mutation is one that is not an adaptive response to the environment. This is problematic for theism, or those who believe God does exist and is involved with his creation. By definition of Random Mutation they take God out completely. Most mutations that occur are either neutral or negative to the individual, but when those mutations are actually beneficial to the individual then there are greater chances of that species survival, and then able to reproduce to create more, i.e. **Natural Selection.**
- Let's say macro-evolution is true: Neo-Darwinists believe that all living species originated from one single species over the course of billions of years, thus there is no need for God to exist. This statement is false, you can believe whole-heartedly in Macro-evolution, but you can't determine what part of the 3.5 billion years of evolution were "guided" or "un-guided". They claim it is random mutation, but you can't test whether or not God is involved in those mutations.

When someone brings up Evolution, what do we ask them?

- **What do you mean by Evolution?**

We do not deny evolutionary change because that does occur. When we hear evolution we skip assuming the person we are talking too denies God, clarifying the topic of discussion (Evolution) will do 2 things:

1. Engage in conversation with the person instead of writing them off.
2. May gain respect with the person we are talking too because we want to hear what THEY think about evolution.

At the end of their clarification of what they mean by evolution we THEN get to agree that evolution does take place "but we may differ on the scale of that occurrence.

Go over the examples of the 4 Mechanisms of Change- Beetle example that is included in the back of this lesson. Graph 1A. At the biological level, every time something produces the DNA in that something changes. It's split and takes genes from both sides of the parent to produce the offspring. When DNA is being split and combined with something else you get can get differing results. The below 4 "**Mechanisms of Change**" explain how we have arrived at our current biodiversity today from the first origin of life.

1. **Genetic Mutation.**
2. **Migration.**

3. Genetic Drift.

4. Natural Selection.

As we have discussed what “Random Mutation” is, scientists that claim Neo-Darwinism believe the Genetic mutation is the primary factor of how we have the biodiversity we have today.

Where is the primary evidence these scientists lean on for this theory? The Fossil record.

A fossil record is a group of *fossils* which has been analyzed and arranged chronologically and in taxonomic order. Fossils are created when organisms die, are incased in dirt and rock, and are slowly replaced by minerals over time. What is left is a mineral impression of an animal which once existed. Many fields and specialties are utilized to categorize and arrange these fossils, including comparative anatomy, radiometric dating, and DNA analysis. Using the data from the fossil record, scientist try to recreate *phylogenies*, or trees describing the relationships between animals, both alive and extinct. The fossil record helps inform how different groups of animals are related through evolution.

Biologdictionary.net

Humans in the Fossil Record.

The human fossil record is perhaps one of the best documented, due in part to the historical contention that has surrounded the debate of evolution. Nearly every “missing link” in the chain has been unearthed, revealing a solid chain of fossils from modern humans to our earliest ape-like ancestors. The fossils can be differentiated by their distinct features, and can be dated using radioactive isotopes for very accurate dating. The oldest fossils of members of the *Homo* genus were found to be around 1.5 million years old. These belonged to *Homo ergaster*. It is believed that *Homo ergaster* spread from Africa and diverged into the species seen below.

Homo erectus and *Homo neanderthalensis* both have a distinct fossil record, and it is likely that they competed with modern *Homo sapiens*. Genetic analysis have confirmed that modern human genomes contain traces of genes from the Neanderthals, suggesting that the two species interbred at some point in the past. The fossil record of humans can be traced back even further, all the way to very ape-like ancestors which still climbed trees.

There are “Links” between fossils that show a correlation between them. They have been documented and placed and dated on THE Fossil Record showing a progression from early living organism to what we see today. That is the big picture of Neo-Darwinism. Somehow a mixture of chemicals from the very beginning sat long enough to naturally create life, and through the mechanisms of change have developed over time to allow for the survival of the fittest to take place, resulting in the range of complex animals, plants and any other organism we see today, including humans.

Challenges to Evolution

In the mid 1980's there was a conference in Dallas featuring leading theistic and atheistic scientists and biologists. The topic would be 3 primary questions: origin of the universe, origin of life, and the origin and nature of human consciousness. These world leading scientists would be representing 2 systems of thought. 1 thought would be the materialist view in which everything we can see in the universe is ALL there is, and the 2nd system of thought would ascribe the universe to being created/caused by God, or intelligent design.

IMPORTANT! Two scientists who were theists were not there to PROVE the existence of God, but instead cautioned that science cannot "prove" anything with absolute certainty. As we know science has *evolved* itself over the last several thousand years (or millions depending on where you land and how old human beings are).

Their argument was that discoveries in the scientific community seemed to fit much better with a theistic (Belief in God being the cause of the universe) than a materialistic one (belief that what you physically is what you get).

2 leading, materialistic atheist scientists at that conference had an enormous announcement to make.

1. Allan Sandage- Life long agnostic and Caltech Astronomer
2. Dean Kenyon- Biophysicist and origin of life researcher.

There were two panels at this conference, one was the theists side and the other was the materialists side, both of these scientists ended up sitting on the theists side because they were convinced that scientific discoveries were pointing to an intelligent design and far, FAR away from Darwin's theory of evolution.

ALSO- these scientific discoveries led them to have faith in Christ. Both are authors and still leading figures in the scientific community worldwide. But remember, coming out with a confession like that posed threats to their credibility, their jobs and good standing among their peers.

What are the 3 main scientific discoveries that not only point away from evolution but point to Intelligent Design?

1. **The universe had a beginning.**
 - a. "Hubble discovered the universe is expanding. If various galaxies are moving away from our galaxy and from each other in the forward direction of time, then at any time in the finite past the galaxies would have been closer together than they are today." Page 85 Hypothesis. Eventually all the galaxies would have converged, bunching up on one another at some moment in the past. The moment where they converge marks the beginning the expansion of the universe and arguably the beginning of the universe itself.
 - b. Since this discovery in the late 1920's, it has been proven and has been understood that the universe has a beginning.

- c. Einstein did not accept this for 2 years. He believed the universe to be eternal. Until he went and saw the red-shifting lights himself, that is when he made the public announcement that he did in fact believe the universe to have had a beginning.

2. Discovery of DNA.

- a. "When Watson and Crick discovered the structure of DNA, they made a shocking discovery. DNA could store information in the form of a four-character digital code. Their structural model of DNA showed that strings of precisely sequenced chemical subunits called "nucleotide bases" affixed along the interior of the DNA double helix backbone, could store and transmit information." Page 165 Hypothesis.
- b. "The machine code of the genes is uncannily computer like." Richard Dawkins
- c. "DNA is like a computer program. Unlike any computer we have ever created." Bill Gates.
- d. How did this information arise in the first place and what produced the intricate information processing systems in living cells that are essential for DNA to do its work?"
 - i. Not Gene mutations and natural selection.
- e. Page 238 in Crains book- "Skeptics of evolution say the fact that the vast majority of our DNA is functional defies evolutionary predictions."
- f. "The probability of producing even a single functional protein of modest length (150 amino acids) by chance alone in a prebiotic environment stands at not better than a 'vanishingly small' 1 chance in 10 to the 164 power. An inconceivably small probability. To put this number in perspective, recall that physicists estimate that there are only 10 to the 80 power elementary particles in the entire universe." Hypothesis page 175.

3. Cambrian Explosion.

- a. "The fossil record on our planet documents the origin of major innovations in biological form and function. These episodes, if we take the fossil record at face value, often occur abruptly or discontinuously, meaning that newly arising forms bear little resemblance to what existed earlier." Hypothesis page 189.
- b. The Cambrian explosion occurred roughly 530 million years ago, and shows an explosion of NEW fossils or living forms in that time. It was not a gradual change which evolution requires.
- c. This appearance challenged Darwin's claim that natural selection acting on random variations had produced all the new forms of life. His theory required a slow change over millions of years. Page 190 Hypothesis.
- d. Also page 236 of Crains book has a good definition.
- e. Avalon Explosion, Cambrian explosion, Ordovician biodiversification event, Siluro-devonian terrestrial revolution, Odontode explosion, Devonian Nekton revolution, Carboniferous explosion, Triassic explosion, angiosperm revolution, explosive tertiary butterfly radiation, explosive tertiary bird radiation, explosive tertiary mammal radiation, big bang of genus homo, are all examples along the fossil record that record drastic and

abrupt changes that go against this theory of gradual change that evolution requires. The fossil record is not evidence for neo-darwinism or macro evolution, but evidence against it.

Intelligent Design

Intelligent Design is the only theory that remotely comes close to actually answering the BIG QUESTION- The origin of Life, where did life come from?

- It had to come from outside of space, time, matter and energy. Our laws of physics tell us that the very things in existence can't be the cause of all things in existence when there was NOTHING in existence at one point. Astronomers and astrophysicists have proven that the universe is expanding, which means at one point it was nothing. That is where the Big Bang Theory comes in.
- The cause? We look at the evidence of what we see. The world, everything in it, and everything beyond as far as we can see. Over hundreds/thousands of years with the progression of science and technology, scientists are able to see more, and the more they see the more it points to a mind that created EVERYTHING in existence. From the complexity of the molecule that builds and sustains life to the perfectly orchestrated milky way galaxy and beyond, everything designed, there is order, and CHANCE or ACCIDENT does not come close to explaining the beauty and grandeur the universe displays.
- There is a mind behind the universe. That is God.

Don't take my word for it.

- **Nobel Prize winning biologist Jack Szostak-**
 - o It is virtually impossible to imagine how a cell's machines, which are mostly protein based catalysts called enzymes, could have formed spontaneously as life first arose from non-living matter... thus explaining how life began entails a serious paradox.
- **Harvard Chemist George Whitesides-**
 - o Most chemists believe, as do I, that life emerged spontaneously from mixtures of molecules in the pre-biotic earth. How? I have no idea. We need a really good new idea. I don't understand how you go from a system that's random chemicals to something that becomes, in a sense, a Darwinian set of reactions that are getting more complicated spontaneously. I just don't understand how that works.
- **"Origin of Life" entry in the springer encyclopedia of Astrobiology by Mexican theoretician Antonio Lazcano:**
 - o A century and a half after Darwin admitted how little was understood about the origin of life, we still do not know when and how the first living beings appeared on earth.

- **Richard Dawkins, leading evolutionary biologist and new atheist:**
 - o The universe could so easily have remained lifeless and simple... The fact that it did not, the fact that life evolved out of nearly nothing, some 10 billion years after the universe evolved out of literally nothing (Ex nihilo) is a fact so staggering that I would be mad to attempt words to do it justice.

So, when your child, kid, anyone asks “what about evolution”, we respond with “what do you mean by evolution?” And ask them more details about what they think, before we point out we believe the evidence doesn’t point to a neo-Darwinian view, then just recite this lesson by memory. That should work.

Good things to know-

- **Discovery Institute**
 - o “The Institute investigates the life-changing possibilities of a universe brimming with information and intelligent design. It has a special interest in exploring how science and technology can advance free markets, propel new discoveries, illuminate public policy, and support human dignity and the metaphysical foundations of a free society.” DI What We Do Website page.
- **BioLogos**
 - o BioLogos is the name of an organization that promotes various forms of theistic evolution.
 - o “Today, BioLogos still addresses the questions people asked Collins. And we’re the premier organization producing resources on multiple platforms, which celebrate the compatibility of evolutionary creation and biblical faith. These resources are not just for scientists, but also pastors, small groups, parents, and anyone else interested understanding what science and the Bible reveal about the development of life.”

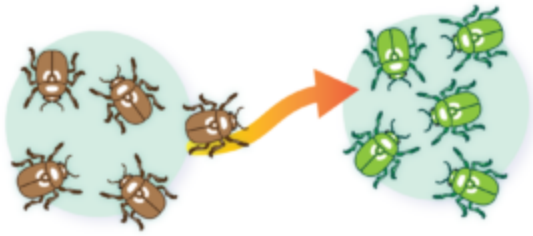
Example 1.

Mechanisms of change

Each of these four processes is a basic mechanism of evolutionary change and is illustrated with an example of gene frequency change in a beetle population with brown and green individuals.



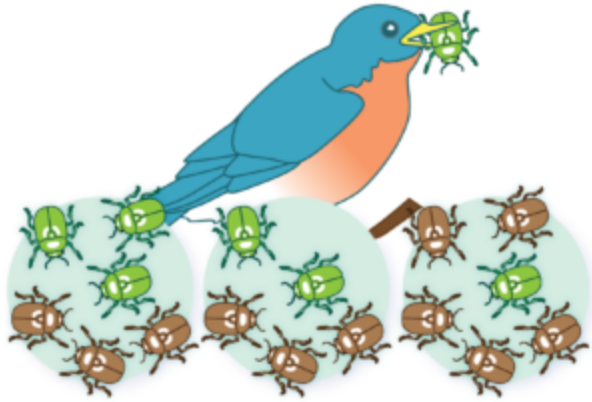
Mutation: A [mutation](#) could cause beetle parents with genes for bright green coloration to have offspring with a gene for brown coloration. That would make genes for brown coloration more frequent in the population than they were before the mutation.



Migration: Some individuals from a population of brown beetles might have moved into a population of green beetles. That would make genes for brown coloration more frequent in the green beetle population than they were before the brown beetles migrated into it. In evolutionary biology, [migration](#) is also called “[gene flow](#).”



Genetic drift: In one generation, brown beetles happened to have many offspring survive to reproduce. In the same generation, a number of green beetles were killed randomly when someone stepped on them and had no offspring. The next generation had more brown beetles than the previous generation — but just by chance. These chance changes from generation to generation are known as [genetic drift](#).



Natural selection: Imagine that green beetles are easier for birds to spot (and hence, eat). Thus, brown beetles are a little more likely to survive to produce offspring. They pass their genes for brown coloration on to their offspring. So in the next generation, brown beetles are more common than they were in the previous generation.

All of these mechanisms can cause changes in the frequencies of genes and other genetic elements in populations, and so all of them are mechanisms of evolutionary change. However, natural selection and genetic drift can only change the frequency of different genes and genetic elements (e.g., making wide beaks or green beetles more or less common); they cannot introduce fundamentally new traits to a population.

Resources Used:

- **The Comprehensive Guide to Science and Faith: Exploring the Ultimate Questions About Life and the Cosmos.** By William Dembski, Casey Luskin, Joseph Holden.
- **Darwin's Doubt: The Explosive Origin of Animal life and the Case for Intelligent Design.** By Stephen Meyer.
- **Debating Darwin's Doubt.** By Stephen Meyer and David Klinghoffer.
- **Keeping Your Kids on God's Side: 40 Conversations To Help Them Build a Lasting Faith.** By Natasha Crain.
- **Return of the God Hypothesis: Three Scientific Discoveries That Reveal the Mind Behind the Universe.** By Stephen Meyer.
- **God's Crime Scene: A Cold Case Detective Examines the Evidence For a Divinely Created Universe.** By J Warner Wallace.
- **The Case for Faith: A journalist Investigates the Toughest Objections to Christianity.** By Lee Strobel.
- **Why Believe? A reasoned Approach to Christianity.** By Neil Shenvi.
- **The Origin of Species.** By Charles Darwin.