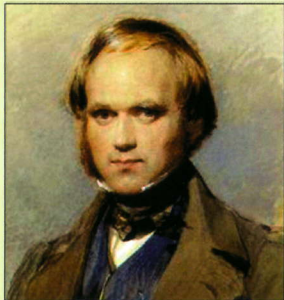


Darwin's Observations

Most textbooks teach about a great naturalist named Charles Darwin who developed the theory of evolution by observing animals in the early 19th century. Darwin's theory suggested that complex creatures evolve from simple ancestors that gradually adapt to a changing environment over time.

Q1 Is Darwin's Theory of Evolution a fact?



CHARLES DARWIN

No, the theory of Darwinian Evolution says that complex creatures evolve from simple creatures naturally over time. This theory is not a fact; it has not been proven and cannot be replicated in a laboratory. A scientific theory is an attempt to make accurate statements about factual evidence in the natural world. There are several theories that attempt to explain how complex animals came to exist.

The key to good scientific reasoning begins with gathering as much reliable evidence as possible and looking at it carefully. Then, scientists construct alternative theories and compare them in light of how well they explain the evidence. As a result of this,

Darwin's theory has undergone many changes over the years to conform to the evidence. However, many unresolved scientific issues remain.

Q2 Is there any proof that evolution happened?



The peppered moth's color changes illustrate **microevolution**, not Darwin's theory of **macroevolution**.

- Universal Common Descent (organisms descending from a common ancestor)
- Natural Selection (survival of species, "survival of the fittest")

Darwin's followers say that life forms became more and more complex through a gradual process. However, some scientists have given up on that notion of gradual change. They insist that there simply is not enough time since the beginning of the universe for all the required changes to have taken place gradually. Darwin's theory of evolution does not account for the beginning of life on earth.

That depends on what you mean by "evolution." The term "evolution" basically means "change," and is too broad to be very useful in a discussion. Here are four ways the word evolution is used:

- Microevolution (small changes in a population over time, such as the color of moths or the size of a bird's beak).
- Macroevolution (the random development of new structures like wings, new organs like lungs, and new body plans)

Beginnings, Origin of Life

Many science textbooks teach that the universe began with an explosion 14 billion years ago. Darwin's theory suggests that complex creatures such as human beings developed from single-celled animals over 5 billion years. Mathematicians say that life could not become that complex that quickly—even in 100 billion years.

Q3 What is the Big Bang Theory?

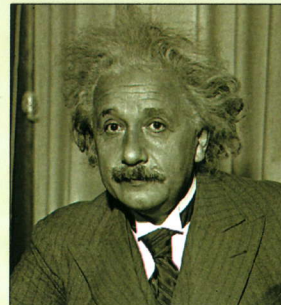


The Big Bang theory says that the entire universe began as a super-hot, super massive "explosive point," and that the universe continues to expand.

The first chapter of Genesis says that God created the universe out of nothing. The Big Bang theory also says the universe was created out of nothing.

If the universe was created the way the Big Bang theory says it was, we should see stars and galaxies moving away from each other (and away from us). We should also be able to detect cosmic background radiation from the Big Bang's fiery explosion. Both of these phenomena have, in fact, been observed as the theory predicts.

Q4 Is the Big Bang Theory good news or bad news for the theory of evolution?



ALBERT EINSTEIN

The Big Bang theory is bad news for the theory of evolution. Why? Darwin's theory requires extremely large amounts of time to produce the necessary changes in living forms. However, the Big Bang theory says that there was a beginning, a point in time when the universe was created, and that point was not long ago—not long enough for any organism to evolve. According to most mathematical calculations, a universe even 100 billion years old is not old enough for the development of a single cell.

The Big Bang theory appears to be consistent with the biblical account of creation in Genesis, which says that God created the world out of nothing.

Some scientists dislike the Big Bang idea precisely because it sounds too much like biblical Creation.

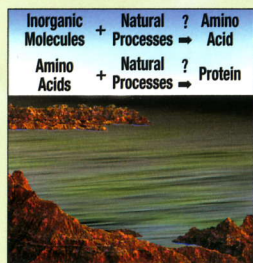
In the 1920s, Albert Einstein¹ said that the universe was infinitely large and infinitely old—with no beginning. Later, Einstein said this was "the greatest mistake of my life."² He finally accepted the necessity of a beginning.³

Beginnings, Origin of Life

"The current scenario of the origin of life is about as likely as the assemblage of a [Boeing] 747 by a tornado whirling through a junkyard."

—Sir Fredrick Hoyle⁴

Q5 Can molecules of non-living matter be transformed by a natural process into the organic building blocks of life (proteins)?



It is virtually impossible to produce important life molecules, such as proteins, from simple molecules. Proteins in all living things are assembled from the same basic "alphabet" of 20 amino acids. Each different type of protein is formed from a unique arrangement of these chemical "letters." To form a protein that actually works, the amino acid letters must be arranged in precise sequences, like letters in a sentence. This precise sequence creates a certain protein that has a specific function in the cell. The odds that all of these factors will occur on their own is statistically impossible.

Q6 Does the Miller-Urey experiment prove that organic life can be built by a natural process?



STANLEY MILLER

No, the conclusions drawn from the Miller-Urey experiment are no longer considered relevant by the scientific community.

Trying to simulate the conditions on ancient earth, chemist Stanley Miller put methane, ammonia, water vapor, and hydrogen (his "primordial soup" model) into a closed chamber and fitted the chamber with electrodes to simulate lightning. After boiling the fluids and sparking the resulting,

gases for about a week, Miller was pleased to discover several amino acids—the building blocks of proteins. The results took the world by storm. Electricity going through the primordial soup had *apparently* created building blocks of life. There were, however, two main problems with the experiment.

First, scientists agree that the atmosphere of early Earth was not at all like what the Miller-Urey experiment used. In fact, if Miller's experiment were performed with a realistic atmosphere, no amino acids would form.

Second, connecting amino acids to form a useful protein is a lot harder than just making an amino acid. Hooking amino acids together requires removing a molecule of water for each amino acid added to the chain, but amino acids are highly water-soluble (they dissolve in water). This means that although water is a necessary part of the Miller-Urey theory, the presence of water also keeps amino acids from forming proteins.⁵

Evolution of Life Forms

"More than 30 years of experimentation on the origin of life... have led to a better perception of the immensity of the problem... rather than to its solution."

—Klaus Dose, Origin-of-life researcher and the president of the Institute of Biochemistry at the University of Johannes Gutenberg in Mainz Germany⁶

Q7 Do all scientists accept Darwin's theory of evolution at the cell level?



ANIMAL CELL

No, most scientists still accept some version of the theory of evolution, but a growing number of scientists have become dissatisfied as they learn more facts about the complexity of life.

In the 1800s, when Darwin lived, most scientists thought the cell was a simple thing—a little lump of carbon compounds. They also thought that the creation of life was a fairly simple process.

New biochemical techniques and improved microscopes have revealed the complexity of those "simple lumps" called cells. We now know that cells contain thousands of different types of organic molecules. Because the design and function of the cell is extremely complicated, the creation and function of life are not simple.

Q8 Do the changes in Galapagos finch beaks, or changes caused through selective breeding, prove that evolution takes place?



GALAPAGOS FINCHES

We need to ask, "What kind of evolution are we talking about?" The changes in finch beaks is a great example of microevolution, not macroevolution. It is true that the effects of the drought changed the average beak size of some Galapagos finches. This is an example of minor variations being selected from genetic information (the "gene pool") already present in the finches' DNA (Deoxyribose Nucleic Acid).

After a severe drought in the Galapagos Islands in 1977, the plants produced many fewer seeds (bird food) than usual.⁷ During the drought, the big-beaked birds were more likely to survive because they were able to eat the large, hard seeds as well as any small seeds. The smaller-beaked finches were less likely to survive because they could not eat the larger seeds. But that is not the same as saying that the finches evolved bigger beaks.⁸ Big beaks and small beaks were present in the population before the drought. Big beaks and small beaks were present in the finch population after the drought. Furthermore, following a period of intense rain in the Galapagos, the average finch-beak size returned to its pre-drought size, and the so-called "evolutionary change" was reversed.

Selective breeding, or purposeful domestication, has been used to produce changes within species for thousands of years. By repeating this process (called selective breeding) over generations, one can modify the characteristics of the whole breed. These changes would be an excellent example of microevolution if it weren't for one thing: Intentional, deliberate, selective breeding is not a "natural force." Animal breeders are intelligent, purposeful agents, not natural "environmental factors."

The Fossil Record

Science textbooks remind us that some of the most important clues to Earth's past are fossils. If the Theory of Evolution were correct, then we should see proof in the fossil record that animals changed gradually from one animal to another. At this point, there is very little fossil evidence that animals evolved.

Q9 Does the fossil record support Darwin's theory?



FOSSIL TRILOBITE

No, Darwin predicted that if his theory were correct, there should be evidence that simple life forms gradually developed into more and more complex creatures.

Paleontologists (those who study fossils) generally state that the fossil record does not support Darwin's theory in two major ways:

- 1) Animal types tend to appear suddenly in the fossil record (not gradually, as Darwin predicted). Therefore, each animal type is "missing" the "link" to its former ancestor.
- 2) Animals tend to remain relatively unchanged throughout their time on earth (not slowly developing into new forms as Darwin predicted).

Q10 What is the "Cambrian Explosion" and does it prove Darwin's theory?



Scientists sometimes call this event the Biological Big Bang, because the fossils of at least 19—and perhaps as many as 50—radically new and complex animal groups, with radically different body types, appear suddenly on earth at one time. Scientists call this remarkable event the "Cambrian Explosion" because this dramatic appearance of major animal forms occurs in the fossil record from the Cambrian period.

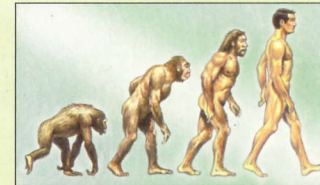
The Cambrian Explosion does not support Darwin's theory. In fact, Darwin predicted that we would find evidence that life began simply and progressed into big differences. Instead, fossils from the Cambrian layer show multiple animal types with huge differences appearing at once.

The Fossil Record

"Instead of finding the gradual unfolding of life, what geologists of Darwin's time, and geologists of the present day actually find is. . . [that] . . . species appear in the sequence very suddenly, show little or no change during their existence in the record, then abruptly go out of the record."

—David Raup, PhD - paleontologist and professor of Geophysical Sciences at the University of Chicago

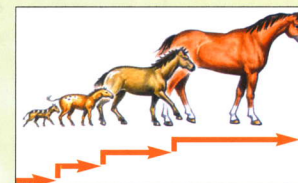
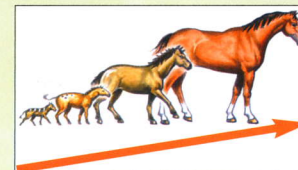
Q11 Was there a gradual transition of an ape to man or the Eohippus (primordial horse) to the modern horse?



Despite the illustrations in textbooks showing gradualism (a gradual transition) in the evolution of the horse, or evolution of ape to man, there is no evidence for it. In the case of ape to man, virtually every "missing link" or "find" has turned out to be ape-like and non-human, not a transitional kind of ape-man. A few "finds" were deliberate hoaxes.

Richard Leakey, world's foremost paleoanthropologist and son of Louis and Mary Leakey, said, "If pressed about man's ancestry, I would have to unequivocally say that all we have is a huge question mark. . . . If further pressed, I would have to state that there is more evidence to suggest an abrupt arrival of man rather than a gradual process of evolving."¹⁰

Q12 What is punctuated equilibrium and does it solve the problem of "missing links"?



Punctuated equilibrium is a more recent evolutionary theory proposed by Eldredge and Gould. This theory suggests that evolution occurs during short periods of sudden, drastic change with long periods of little or no change. Sudden major change means that fewer transitional forms would have existed. Since there were fewer transitional forms, they would be less likely to be preserved in the fossil record. Instead, the fossil record would only preserve the new forms of life, which remained stable over long periods of time. Critics say punctuated equilibrium does not solve the problem of "missing links" and it is basically an admission that there is no fossil evidence supporting Darwin's theory of Universal Common Descent—the theory that all life is connected to a common ancestor. Even Stephen J. Gould

(Paleontology, Harvard), wrote that "...all paleontologists know that the fossil record contains precious little in the way of intermediate forms [links from one animal type to another]; transitions between major groups are characteristically abrupt."¹¹

By embracing the theory of punctuated equilibrium, scientists have moved one step closer to the biblical perspective of creation. Fossil evidence shows the sudden appearance of all major categories of organisms.

Quotes from Scientists

"...I am quite conscious that my speculations run beyond the bounds of true science. ...it is a mere rag of an hypothesis with as many flaw[s] & holes as sound parts."

—CHARLES DARWIN TO ASA GRAY, CITED BY ADRIAN DESMOND AND JAMES MOORE IN DARWIN (NEW YORK: W.W. NORTON AND CO, 1991), PP. 456, 475

"To improve a living organism by random mutation is like saying you could improve a Swiss watch by dropping it and bending one of its wheels or axis. Improving life by random mutations has the probability of zero."

—ALBERT SZENT-GYORGI, NOBEL LAUREATE (MEDICINE, 1937)

"If pressed about man's ancestry, I would have to unequivocally say that all we have is a huge question mark. To date, there has been nothing found to truthfully purport as a transitional species to man...If further pressed, I would have to state that there is more evidence to suggest an abrupt arrival of man rather than a gradual process of evolving."

—RICHARD LEAKEY, WORLD'S FOREMOST PALEOANTHROPOLOGIST, IN A PBS DOCUMENTARY, 1990

"All of us who study the origin of life find that the more we look into it, the more we feel that it is too complex to have evolved anywhere. We believe as an article of faith that life evolved from dead matter on this planet. It is just that its complexity is so great, it is hard for us to imagine that it did."

—DR. HAROLD UREY, NOBEL PRIZE WINNER (CHEMISTRY, 1934)

"To suppose that the eye 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 confess, absurd in the highest degree."

—CHARLES DARWIN, *THE ORIGIN OF SPECIES* (LONDON: JOHN MURRAY, 1859)

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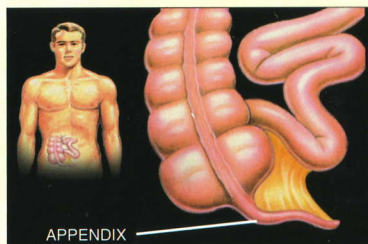
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Body Development

Science textbooks use images and diagrams in an attempt to show that animals are related to one another by a common ancestor. It is suggested that body development as well as DNA supports the theory of evolution. Some of the diagrams used in textbooks are guesses or have been proven to be fraudulent.

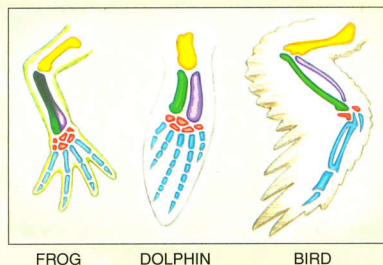
Q13 Does the presence of "vestigial organs," such as the appendix, prove that human beings evolved from earlier creatures?



No, recent studies suggest that the appendix, which was once considered vestigial (left over organs that once served a purpose in man's early ancestors) and is still considered evidence of evolution in most science textbooks, actually has an important functional role in the immune system. Furthermore, the tailbone or coccyx is also functional, serving as a point of attachment for muscles of the pelvic floor.¹²

In the past, some scientists have called the pituitary gland, the tear glands, the tear ducts, the spleen, and the pancreas "vestigial." In time, science has discovered that there are important functions for all of these organs or glands that at one point were considered vestigial. If science labels an organ vestigial, it does not necessarily mean that it is.

Q14 Do the similarities in the skeletons of amphibians, reptiles, birds, and mammals prove that these species came from a common ancestor?



No, there are two ways to look at these similarities, which are often referred to as homology.

- 1) Similarities exist because all organisms have the same ancestor and their differences are related to slight modification over time.
- 2) Similarities are related to an intelligent designer (God) who designed (created) different organisms with similar skeletons.

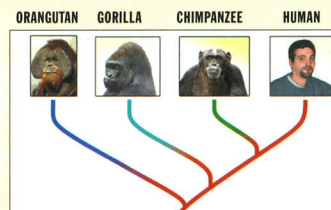
The problem with homology due to common ancestry is that the entire process has to occur naturally. One scientist compared this "descent with modification" to a succession of Corvettes lined up side by side. This scientist intended to illustrate that, like the fossil record, one can see the common similarities and the slight modification of each model every year. However, this illustration accidentally showed that the appearance of slight modifications over time was actually due to the intentional actions of the automobile designer.¹³

Body Development and DNA

"Then I woke up and realized that all my life I had been duped into taking evolutionism as revealed truth in some way."

—Colin Patterson, senior paleontologist at the British Museum of Natural History and author of the book *Evolution*¹⁴

Q15 Is it true that scientists can construct an evolutionary "family tree" based on DNA evidence?

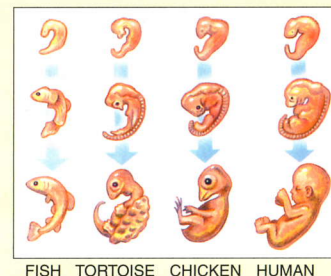


No, not consistently. For example, one study tried to figure out the "family tree" of the rabbit. One group of scientists studied 88 protein sequences trying to figure out the "family tree" of the rabbit. They said that the evidence showed that rabbits belonged with primates instead of rodents.¹⁵ Even more perplexing, another study found that a DNA analysis of the same protein analyzed by two

different laboratories produced two different "family trees!"¹⁶ Improved understanding of DNA was thought to put evolution on firmer ground, but that simply has not been the case. Instead, biochemistry has raised challenging new questions.

At this time, one can not totally determine the relationship between different species by examining DNA. For example, scientists discovered that two almost identical species of fruit flies have only 25% of their DNA in common.

Q16 Do the similarities between embryos prove that certain species share a common ancestor?



No, similar appearance does not necessarily prove common ancestry. Earnest Haeckel, one of Darwin's most loyal supporters, said that an embryo's process of development from egg to newborn was proof of Darwin's theory. He proposed his famous law of biogenesis which states that the embryo's step-by-step process of development in the womb goes through (or repeats) the evolutionary history of the species. He produced a series of woodcut drawings showing how very similar the embryos of different species look as they develop.

Actually, embryologists have known since at least 1894 that Haeckel's evidence was faked, but their public challenges were lost beneath the overwhelming popularity of Haeckel's inaccurate drawings. An international team of scientists compared Haeckel's drawings to photographs of actual embryos at various developmental stages, and proved decisively that Haeckel had distorted the evidence. Another critical point is that both Darwin's and Haeckel's comparisons left out the earliest stages of embryo development, where vertebrate embryos differ. The stage Haeckel labeled the "first" was a latter stage of development for some of the embryos.

Some argue that pictures showing human embryos with gill slits proves that we go through an ancestral fish stage before we finally develop into humans. These pictures show a series of folds, made up of ridges and clefts. These folds develop into other structures as the embryo develops, but they are never even close to being gills. They merely appear as a series of parallel lines. These arguments do not prove that species share a common ancestor.

Quotes on Evolution

"So many essential conditions are necessary for life to exist on our earth that it is mathematically impossible that all of them could exist in proper relationship by chance on any one earth at one time."

—Dr. A. Cressy Morrison, past president of the New York Academy of Sciences

Darwin's Own Comments

"If it could be demonstrated that any complex organ existed which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down."

—CHARLES DARWIN, *THE ORIGIN OF SPECIES* (1859)

"Not one change of species into another is on record...we cannot prove that a single species has been changed."

—CHARLES DARWIN, *MY LIFE & LETTERS*, VOL. 1. (1905), p. 210

On Darwin's Theory

"To Darwin, the cell was a 'black box'—its inner workings were utterly mysterious to him. Now, the black box has been opened up and we know how it works. Applying Darwin's test to the ultra-complex world of molecular machinery and cellular systems that have been discovered over the past 40 years, we can say that Darwin's theory has 'absolutely broken down'."

—MICHAEL BEHE, BIOCHEMIST, *DARWIN'S BLACK BOX* (1996)

On Very Big Gaps

"The number of intermediate varieties which have formerly existed on earth must be truly enormous. Why then is not every geological formation and every stratum full of such intermediate links? Geology assuredly does not reveal any such finely graduated organic chain; and this, perhaps, is the most obvious and gravest objection which can be urged against my theory."

—CHARLES DARWIN, *THE ORIGIN OF SPECIES*

"...all paleontologists know that the fossil record contains precious little in the way of intermediate forms [links from one animal type to another]; transitions between major groups are characteristically abrupt."

—STEPHEN J. GOULD, "THE RETURN OF HOPEFUL MONSTERS," *NATURAL HISTORY*, NEW YORK: AMERICAN MUSEUM OF NATURAL HISTORY (1977) p. 24

"...continuous transitional sequences [showing the evolution of a form without any missing links] are not merely rare, but are virtually absent."

—GEORGE GAYLORD SIMPSON - PROFESSOR OF ZOOLOGY AT COLUMBIA UNIVERSITY AND CURATOR OF THE DEPARTMENT OF GEOLOGY AND PALEONTOLOGY AT THE AMERICAN MUSEUM OF NATURAL HISTORY

On Life Evolving

"To postulate that the development and survival of the fittest is entirely a consequence of chance mutations seems to me a hypothesis based on no evidence and irreconcilable with the facts. These classical evolutionary theories are a gross over-simplification of an immensely complex and intricate mass of facts, and it amazes me that they are swallowed so uncritically and readily, and for such a long time, by so many scientists without a murmur of protest."

—SIR ERNST B. CHAIN, NOBEL LAUREATE (MEDICINE, 1945)

"It [Haeckel's illustration] looks like it's turning out to be one of the most famous fakes in biology."

—DR. MICHAEL RICHARDSON, EMBRYOLOGIST AT ST. GEORGE'S MEDICAL SCHOOL

"When confronted with the marvels of life and the universe, one must ask why and not just how. The only possible answers are religious. For me that means Protestant Christianity, to which I was introduced as a child and which has withstood the tests of a lifetime. But religion is a great backyard for doing science. In the words of Psalm 19, 'The heavens declare the glory of God and the firmament showeth His handiwork.' Thus scientific research is a worshipful act in that it reveals the wonders of God's creation."

—ARTHUR L. SCHAWLOW, NOBEL LAUREATE (PHYSICS, 1981)

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Websites that may be helpful for additional information on creation include:

1. Access Research Network—<http://www.arn.org>
2. American Scientific Affiliation—<http://asa.calvin.edu>
3. Campus Crusade—<http://www.origins.org/menus/links.html>
4. Institute for Creation Research—<http://www.icr.org>
5. Reasons to Believe—<http://www.reasons.org>
6. Rose Publishing—<http://www.rose-publishing.com>

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