An Evaluation of Homology as Evidence for Evolution

Atikur Rahman

Independent Researcher

Ar3670700@gmail.com

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Abstract

Biology has improved a lot over the centuries. The success of developmental biology is huge in every field of physiology, anatomy, paleontology, embryology. The term homology has not been used in biology for a long time. The need for homology in biology is understandable. I have discussed in this paper the necessity of homology in the field of biology and argued that it is unreasonable to refer to homology as evidence of Darwinism, both philosophically and biologically. This paper evaluates homology in the light of the philosophy of biology as evidence for evolution.

keywords: Philosophy of science, Homology, Taxa

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Introduction: Carolus Linnaeus, the father of modern morphology. He published the book Specia Plantarum in 1853. In it, he describes 6,000 plant species. He introduced the binomial nomenclature system and classified it. Later this method was also detailed in the animal kingdom. He wrote the famous book Systema Naturae. He edited and refined it and published ten editions. The 10th edition was published in 1858. Let it be said that morphology has originated from the publication of this book. He describes more than 10,000 species of animals and plants and classifies the species. He was a believer in Christian heresy. He also believed in the permanence of the species. Therefore, no one expected from him or morphology any danger such as skepticism from morphology, especially the idea of human creation. But the first problem arises from this knowledge. After reviewing the anatomical features, Linnaeus gave the man a homosexual name like other animals (Homo Sapiens) and included him in the same class as other mammals (Mammalia). From this one incident, the inseparable relationship of man with the living world became clear. According to cosmology, there can be no such relationship. A man was created individually, in the image of God. So there is no question of having a relationship with the animal kingdom. But there is no way to ask why this relationship exists from Linus's work and morphology data. And if there is a relationship, how far does it extend? Do humans have a genetic relationship with other organisms? Darwin (1859), in his book The Origin of Species, described the evolutionary relationship between different species and created the crisis of eccentric theory. But he did not say anything about human evolution in the book. "If we do not close our eyes, we will be able to recognize our ancestors based on current knowledge," he said.

A staunch supporter of Darwin's theory of evolution, his tireless preacher, known as "Darwin's Bulldog", Professor TH Huxley (183), a professor at the University of London, was the first to suggest in his book Man's Place in Nature that man originated as an ape. from (ape). He said that in the future, archaeologists might dig up fossils of ape-like anthropoids or human fossils that resemble pithecoid. Since the largest number of apes (gorillas and two types of chimpanzees) are still found in Africa, and since they closely resemble human anatomy and many other things, he suggests that humans probably originated in Africa. Many have questioned Darwin about this. But he did not want to say. The reason for his reluctance is not difficult to understand. He did not want to offend the people who believed in simple faith. And he was able to predict the reaction between the most influential church and the state power. However, in the end, Darwin (181) wrote his second famous book, The Descent of Man and Selection concerning Sex. In it, he supported Huxley and proposed the Africa Center of Human Origin. In 182 he wrote 'The Expression of the Emotion in Man and Animals. In this book, too, he mentions the alignment of human emotions with apes as evidence of the evolutionary relationship between them.

Huxley-Darwin's hypothesis about the origin of man from the ape was strongly opposed by Richard Owen, another eminent professor of anatomy at the University of London. He said that the human brain has a unique appendage. Whose name is Hippocampus? It is not in the app. Therefore there can be no common hereditary or evolutionary relationship between apes and humans. Huxley dismissed the idea of the hippocampus as a false and ridiculous delusion. It turned out that Huxley's idea was correct. The hippocampus has nothing to say. Although some later acknowledged the human relationship with the apes in evolution, they were reluctant to admit any relationship with the ape. In this context, the famous American paleontologist George Gelard Simpson is noteworthy. "The apologists are adamant that humans did not originate from a living ape. It's almost stupid. This means that humans did not evolve from apes or apes, but a common ancestor. The fact is that anyone who saw his ancestor would have called him an ape.

1. Brief History of Homology: In biology, homology is due to ancestry divided into a pair of structures or genes in different taxa Similarity. A common example of a homogeneous structure is the vertebral tip, where the wings of bats and birds, the arms of primates, the front flipper of a whale, and the tip of a four-legged vertebra like dogs and crocodiles all originate from the same ancestor. Structure Evolutionary biology explains adaptive homogeneous structures Descendants with changes from a common ancestor result in different purposes. The term was first applied to biology in 1843 by anatomist Richard Owen in a non-evolutionary context. Homology was later explained by Charles Darwin's theory of evolution in 1859, but it was first observed from Aristotle and it was. In 1555 Pierre Ballon analyzed. In evolutionary biology, the organs that develop in the embryo in the same way and from the same source, such as primordia from continuous sequencing of the same organism, are Gradually homogeneous. Examples include the leg of a centipede, the maxillary pulp and labial pulp of an insect, and the continuous vertebral spinous process in a vertebral column. Male and female reproductive organs are homogeneous if they develop from the same embryonic tissue, such as the ovaries and testicles of mammals, including humans.

Sequence homology between proteins or DNA sequences is similarly defined in terms of shared lineage. An ancestral division may be due to the occurrence of two species of DNA (earthlings) or a parallelogram. The homology between proteins or DNA is inferred from the similarity of their hierarchies. Significant similarities are strong evidence that the two sequences are related by evolution different from a common ancestor. The alignment of multiple sequences is used to discover homogeneous regions.

Homology in animal behavior remains controversial, but there is indicative evidence that the classification of dominance among primates, for example, is homogeneous. The homology was observed by Aristotle (approximately 350 BC), **[1]** and Pierre Ballon explicitly analyzed it in his 1555 Book of Birds, where he systematically compared the skeletons of birds and humans. The pattern of resemblance was interpreted as part of the static Great Chain that existed between the medieval and early modern times: it did not then appear to imply evolutionary change. In the tradition of German natural philosophy, homology was of particular interest for showing unity in nature. **[2]** In 1890, Goethe, in his essay "Metamorphosis of Plants" describing his follicle theory, showed that part of the flower originated from the leaf. **[3]** Serial homology of limbs was described in the late 18th century. The French zoologist Etienne Geoffroy Saint-Hilaire wrote his theory analogue ("homologs theory" in 1818).) Showed that the structures are divided into fish, reptiles, birds, and mammals. When Geoffrey goes further and seeks the equivalence between Georges Cuvier's embrace, such as the spine and the mollusk, his claim triggers the Cuvier-Geoffrey controversy of 1830. Geoffrey's principle of connection states that what matters is the relative position of the various structures and their connection to each other. Estonian embryologist Carl Ernst von Beyer referred to what is now called the Von Beyer Act in 1828, noting that related animals begin to develop as similar embryos and then deviate: thus, animals of the same family become more closely related and subsequently isolated. Is. Animals that are only in the same order and have fewer equivalents. Von Bayer's theory acknowledges that each taxon (such as a family) has its own distinctly divided characteristics, And the development of that embryo is parallel to the taxonomy of taxonomy: not like the reconstruction theory. The

physicist Richard Owen first used the term "homology" in biology in 1843 when studying the similarity of vertebrate fins and limbs, and defined it as "the same organ of different animals under each variety and function". 6] and contrasts it with the compound word "analogy" which he used to describe different structures with the same function. Wayne coded 3 main criteria to determine if features are equivalent: location, development, and composition. In 1859, Charles Darwin explained the homogeneous structure, meaning that the organisms involved shared a body plan from a common ancestor and that they were was a branch of a single tree of life. Charles Darwin explained the homogeneous structure, meaning that the organisms involved shared a body plan from a common ancestor and that they were was a branch of a single tree of life. **[4]**

Sequence Homology: Like the physiological structure, sequence homology is defined in terms of the lineage divided into protein or DNA sequences. An ancestral division can be caused by the occurrence of a species (earthlogs) or a parallelogram of two parts of DNA. The homology between proteins or DNA is usually inferred from the similarity of their hierarchs significantly cant similar strong evidence dance that the two sequences are related to the different evolution of a common ancestor. The alignment of multiple sequences is used to indicate which regions of each sequence are equivalent. Homologous sequences are orthologous if they are descended from the same ancestral sequence separated by the phenomenon of one species: when a species evolves into two different species, copies of a single gene of two resulting species are called

A multiple sequence alignment of mammalian histone H1 proteins. Alignment positions conserved across all five species analysed are highlighted in grey. Positions with conservative, semi-conservative, and non-conservative amino acid replacements are indicated. (Library of Congress)

orthologous. The term "orthology" was coined in 1970 by the molecular evolutionist Walter Fitch. Homogeneous sequences are paralogous if they are created by a duplicate event in the genome. For gene duplication events, if a gene in an organism is duplicated to occupy two different positions in the same genome, two copies are paralyzed. The paralogous gene often belongs to the same species. They can shape the structure of the whole genome and thus explain the evolution of the genome in many ways. Examples include the Homoeobox (Hawks) gene in animals. These genes not only mimic genes within chromosomes but also copy the entire genome. As a result, the HoxA – D clusters are best studied: HoxA – D clusters are spread across multiple chromosomes in most vertebrates.

Note:_____

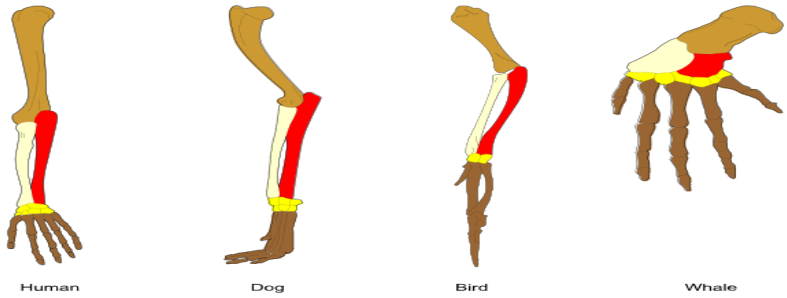
1. Panchen, A.L. (2007). Homology — History of a Concept. In Novartis Foundation Symposium 222 - Homology (eds G.K. Bock and G. Cardew)

2. Brigandt, Ingo, "Essay: Homology". Embryo Project Encyclopedia (2011-11-23). ISSN: 1940-5030 http://embryo.asu.edu/handle/10776/1754.

3. Sommer RJ. Homology and the hierarchy of biological systems. Bioessays. 2008 Jul;30(7):653-8. DOI: 10.1002/bies.20776. PMID: 18536034.

4. Staton, J.L. (2022). Homology in Character Evolution. In eLS, John Wiley & Sons, Ltd (Ed.). https://doi.org/10.1002/9780470015902.a0029391

Homology Deconstructed: One of the most common arguments used by evolutionists as proof of naturalistic evolution points to the existence of homologous structures among different animal types. This argument also manifests as an argument against special creation and/or intelligent design. The following paragraph from a popular source online sums up the matter succinctly Limb bones of five different types of animals Homologous structures are body parts with similar arrangements derived from a common ancestor but used for different functions. The human arm, the horse's forelimb, the whale's flipper, and the dog's front paw are all homologous structures that make use of the same basic bones and muscles. Why would an infinitely powerful designer choose to repeat the same design over and over in his creations? Why, in His infinite wisdom, could he not use a radically different design for each of his supposedly independent creations?1 It will not be our purpose here to discuss the scientific merits of the argument concerning homologous structures (see Related Articles, below). Rather, we will be defending and expanding upon a prior creationist defense made against this argument on strictly logical and philosophical grounds.



The principle of homology: The biological relationships (shown by colors) of the bones in the forelimbs of vertebrates were used by Charles Darwin as an argument in favor of evolution. (Britannia)

Elsewhere it has been capably pointed out that the argument from homologous structures commits a serious logical fallacy:

We can apply this analysis to a major evolutionary argument:

1) If organisms X and Y have a common ancestor, they will have homologous structures;
2) X and Y have homologous structures;
3) X and Y have a common ancestor.

This demonstrates that it is an example of the fallacy of affirming the consequent. The conclusion is not proven—the homologous structures could be due to a common designer, leaving a 'biotic message' that there is a single designer of life rather than many.2

This argument may be strengthened and reaffirmed through the understanding that the evolutionary argument from homologous structures hides an unsubstantiated presumption: That is, originality is a critical value that God would be compelled to follow. However, this presumption is the result of modern biases interpreting the biological evidence.

Rather, the suggestion of a 'biotic message' is quite accurate. Homologous structures, far from pointing away from a designer of infinite wisdom, would have indicated to readers of the Bible in their time a designer who did indeed possess infinite wisdom and mastery over His creation. It is only because modern persons have arbitrarily decided that a certain degree of what they see as 'originality' is a proper means value that the evolutionists' argument carries any apparent force.

Homology (analogy) based mutation proposal presupposition or proof?

Those who claim to have evolved by showing bone and genetic similarities should move away from their position. The thing they want to avoid is a common design. Because ancestry is not proved by mere resemblance, because the Creator can create identical animals with similar genes at will. (Peter J. Bowler 2003)

Biologist Wayne Mill describes this similarity in two parts, Homology, and Analogy. Homology means similarity based on structure or location. Analysis means similarity in action Whatever the work, whatever For example, the human hand, the forelegs of horses, and the wings of birds and bats are similar in structure. Based on this homology, the classification of the living world is done. Analysis, on the other hand, is a work in progress For example, there is no similarity in the wing structure of birds and species But in action. Both are used for flying Wayne thought it was the product of the Creator's general plan. (P. J. Bowler 2003)

The idea of homology, the most fundamental subject of biology, is still unresolved after so many years. There are many doubts and problems It is not possible to prove homology, it is just a conjecture. (Ernest Mayer 2002)

Conclusion: Scientists have made similar assumptions in physiology, anatomy, and embryology for the convenience of research. Homology has been used as irrefutable evidence of evolution for a very long time. Although the two organisms are completely distinct, they can have up to 95% similarities. That is why we cannot call him a close relative of his opposite individual. Homoplasy is a good example of this. Considering science and philosophy as two aspects, homology is as important as research, and taking it as evidence from one side is nothing but propaganda. The inference of analogy can never be considered the greatest proof of so-called evolution in conventional science. Because Darwinism is the theory of transformation. Not a theory of similarity.

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