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# **Darwin's theory is the mixture of Malthus's theory and Lyell's theory and Darwin use wrong Lamarck's theory as well as believe as a mechanism of evolution**

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**To cite this article:**

Md. Abdul Ahad. Darwin's Theory is the Mixture of Malthus's Theory and Lyell's Theory and Darwin Use Wrong Lamarck's Theory as Well as Believe as a Mechanism of Evolution. *American Journal of Life Sciences*. Vol. 2, No. 3, 2014, pp. 128-137.

doi: 10.11648/j.ajls.20140203.12

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**Abstract:** Darwin's theory of natural selection is a mixture of Lyell's theory and Malthus's theory and Darwin used wrong Lamarck's theory, theme of sociologist Herbert Spencer 'survival of the fittest' plus believes as the mechanism of evolution. Evidences are provided from his paper 1858, 'Origin of Species' and 'Descent of Man' his autobiography and different text books. Diverse literatures showed that Lyell declared in 'Principle of Geology' that the earth was evolved from the simple to the modern stage by slow and gradual (he utilized gradual 170 times) process by natural forces during millions of years. Darwin applied this view to natural selection. But he used 'living organisms' in lieu of the 'earth surface' and confirmed that all the living organisms evolved by slow and gradual process from a few previous simple organisms over millions of years. Furthermore, Darwin used Lyell's name and his idea gradual 27 times in 'Origin of Species' and 9 times in 'Descent of Man'. Malthus argued in 'Principle of population' geometrical increasing of human population and confirmed that as many more individuals are born can possibly survive. So, there is often struggle for existence and competition is compulsory. Darwin adopted this idea in his theory of natural selection but he used 'all living organisms' instead of 'Human'. Additionally, Darwin applied Malthus thought geometrical increase 11 times, struggle 84 times, existence 69 and competition 44 times in 'Origin of Species'. Thus, Darwin synthesized natural selection by the mixture of Malthus theory and Lyell's theory in 1889. Moreover, he applied wrong Lamarck's theory disuse 41 places in 'Origin of Species' and 15 places in 'Descent of Man'. He acknowledged that principles of natural selection is shadowed of forth principles of Lamarck and the problem of human evolution can never be solved by science. Man is considered with other some ancient, lower, and extinct form, Lamarck long ago came to this conclusion. Six classical World renowned persons (Darwin, Wallace, Malthus, Lyell, Lamarck and Spencer) direct related to development of 'natural selection' (Origin Species and Descent of Man) but four persons are academically nonscientist (Darwin, Malthus, Lyell and Spencer) even two main persons are academically clergyman man (Darwin and Malthus). Even, Darwin applied unscientific idea 'I believe' and similar theme 372 times in 'Origin of Species' and 264 times in 'Descent of Man'. However, believe is not science as believe in God is not science.

**Keywords:** Natural Selection, Geology, Paleontology, Soil, Evolution, Human, Population Increase, Inheritance of Acquired Structure, Faith.

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## **1. Introduction**

Evolution suggests that all species of living organisms have evolved from simpler organisms over a long period of time. Human beings, like all other plants and animals, have evolved from simpler organisms [39]. In addition, life arose by a natural process from non-living originators and achieved its present diversity (variety) including man [6].

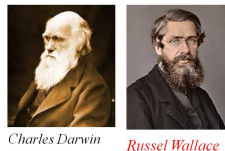
However, Darwin defines evolution as descent with modification through natural selection from a few common ancestors [10]. There are five modern theory of evolution such as Lamarck's Theory, Darwin's theory, Mutation Theory, Synthetic Theory (neo-Darwinism) and Sociobiology. Among these theories Darwin's theory is a

central theme of biology and all theories of evolution. It provides the best and satisfactory explanation for the evolution of plants and animals; this is the belief of most biologists [26, 33]. Furthermore, Darwin's name or rather his theory is almost a synonym for evolution [19, 6].

However, many biologists complain that Darwin exploit the ideology of Malthus's dogma and Lyell's dogma for the development of his theory natural selection. For instance, it is drew attention that Darwin was impressed by Malthus' observation regarding the ability of people to multiply faster than they could produce food. He extended Malthus (1766-1834) argument to other living organisms and deduced that there must be competition for resources [22]. Additionally, in September 1838, Darwin read Malthusian essay on population. Darwin realized that Malthusian logic also applied to the natural world, and this foundation inspired the conception of his theory of evolution by natural selection [5]. Moreover, it is argued that Darwin had read Lyell principles of Geology when beagle sailed from the Galapagos. Lyell's ideas together with his experiences on the Galapagos, Darwin had doubting the churches position that earth was static and had been central only a few thousand years ago. By acknowledging the earth was very old and constantly changing, Darwin had taken and important steps toward recognizing that life on the earth had also evolved [7]. It is also acknowledged that Darwin read Lyell before and during the voyage of the Beagle and became a convinced Lyellian. Many of Darwin's early papers—e.g., on the formation of coral atolls, on the parallel roads of Glen Roy—were deliberate attempts to explain geological features in a gradualism [3].

But these complain about exploit of Malthus's theory and Lyell's theory as a main base of Darwin's theory of natural selection is scattered; not so organized and with less evidence. So, the aims and objectives of this article is to give a clear and elaborate idea with concentrated information, most organized form as well as with strong evidences about the using of the ideology of Malthus's as well as Lyell's as a foundation of Darwin's doctrine 'natural selection'. It is seen from the review that there is no such type of article in present world. This thesis will be helpful to the evolutionary biologists, economists, sociologists, geologists, anthropologists and who think about evolution.

## 2. Darwin's theory of Natural Selection (Darwin-Wallace theory of Natural Selection)



Darwin went to Edinburgh University in October 1825 to study medicine but failed several times at undergraduates. He therefore enrolled Charles at Christ's College, Cambridge in 1827 for a Bachelor of Arts degree as the qualification required before taking a specialized divinity course and becoming an

Anglican parson. He enrolled for an ordinary Degree [[en.wikipedia.org/wiki/Charles Darwin's education](http://en.wikipedia.org/wiki/Charles_Darwin's_education)] i). So, he took the common pass BA. Even at the time he probably underestimated his proficiency, since he ranked 10<sup>th</sup> out of 178 candidates in the final examination [Origin of Species( reprint, edited by Gallen Beer 1996 )]. So, Charles Darwin's education gave him a foundation in the doctrine of Creation prevalent throughout the West at the time, as well as knowledge of medicine and theology [[en.wikipedia.org/wiki/CharlesDarwin'seducation](http://en.wikipedia.org/wiki/CharlesDarwin'seducation)]

However, after a five year Beagle voyage; in 1858, Charles Darwin, the father of modern evolution and Alfred Russell Wallace jointly published their theory 'Natural Selection' in the Journal of Linnaean Society of London (Zool.), In November 1859. Darwin published the book entitled 'The Origin of Species' in which natural selection is explained. Darwin became controversial by writing the book 'Origin of Species'. He wrote the book alone, exposed the public at large to the theory of natural selection. Wallace was still in Indonesia at the time of controversy. Darwin defended by publishing six editions of his book Origin of Species by adding his views from 1859-1872 (1st & 2<sup>nd</sup> 1859, the 3<sup>rd</sup> 1861, the 4<sup>th</sup> 1866, the 5<sup>th</sup> 1869 and the 6<sup>th</sup> 1872). Thus Darwin over take too much. As a result instead of Darwin-Wallace the theory of natural selection' is known as Darwin's theory of natural selection. Even, Wallace with draw his name and called Darwinism (or Darwin's theory) rather than the Darwin-Wallace theory and he always kindly proposed the term Darwinism for the theory of natural selection and also wrote a book entitled "Darwinism" in 1889. Moreover, in 1871 Darwin wrote 'Descent of Man' and further goes beyond Wallace.

Literature shows that the 'Origin of Species' (natural selection) is an epoch-making work and it ranks second only to the holy Bible. Natural selection could be compared only with such revolutionary ideas as Newton's law of gravitation and Einstein's theory. Darwin's theory served as an ordering principle of biology; dominates, integrates and influences in all branches of biology. Even it is a philosophical foundation of western society.

Nonetheless, Darwin's theory of Natural Selection' is based on the observations - (a) Over production (geometrical increase): All species have a high reproductive potential (2, 4, 8, 16.....). (b) Variation: The individual members within any plant or animal species vary from each other by small differences. (c) Competition: Since fewer organisms live to maturity that is producing, all creatures must face a continual struggle for existing for the limited resources. (d) Natural selection: The variations within a species provide some individuals with advantage and are better adapted to environments and produce more offspring than some others. (e) Superior traits: If an advantageous variation of superior traits will also live longer and leave more offspring, some of which may also inherit the variations. This phenomenon continues generations after generations and finally produces new species over millions of years [10]. The phenomenon continues generations after

generations and finally produces new species over millions of years.

However, Darwin's theory of natural selection is a mixture of Lyell's theory and Malthus's theory and Darwin used wrong Lamarck's theory, survival of the fittest plus believes as the mechanism of evolution. Evidences are provided from his paper 1858, 'Origin of Species' and 'Descent of Man' his autobiography and different text books.

### 2.1. Evidence of Use of Malthus's Theory in Darwin's Theory



Thomas Malthus

Reverend Thomas Malthus was educated at home. In 1774, he attended Jesus College in Cambridge; where he studied old languages obtain M.A. In 1797, he was an ordained priest of the Anglican Church. In 1805, Malthus was appointed as the first professor of political economy in England at the East India Company College, Haileybury [[encyclopedia/en/malthusThomas.pdf](http://encyclopedia/en/malthusThomas.pdf)]. He wrote the book entitled "An Essay on the Principles of Population" (in 1798), in which it is argued that there is a natural tendency of increasing of human population. He opined that population increases in the geometrical ratio (2, 4, 8, 16, ----) but food production is limited and increases in the arithmetical ratio (1, 2, 3, 4----), because it depends on fixed amount of land. For this reason, human species will face war, plague and famine due to food shortage [4, 23, 27, 32]. If population is unchecked, goes on doubling itself in every twenty-five years. So, population will become so large that there will be not enough space for all the people to even stand in the world. As a result, the means of survival, under this circumstance, will be difficult. Hence, competition is bound to survive [30, 31]. Thus, as many more individuals are born than can possibly survive. So, there is a frequently struggle for existence and competition is bound, He advised to check population increase by adoption of birth control; late marriage, avoid of poor relief etc. [[www.gutenberg.org/files/4239/.](http://www.gutenberg.org/files/4239/)].

"However, Malthus theory suffers various criticisms. Marx and Engels saw the nature of economic relations in Europe's industrial societies as the central problem population. In Marx's opinion, there was no special relationship between world population figures and the supply of resources (including food). If society were well ordered, increases in population should lead to greater wealth (such in China and India), not to hunger and misery [[en.wikipedia.org/wiki/Thomas\\_Robert\\_M](http://en.wikipedia.org/wiki/Thomas_Robert_M)]. Malthus never fully estimated the technological miracles of the 'Industrial Revolution'. Even he did not predict successive technical improvements in agriculture, which made possible a vastly increased yield from a fixed amount of land; nor did he forecast the decline in birth rates like Australia, Canada etc.[32]. So, Rejecting Malthus's theory, a group of European thinkers formulated 'Club of Rome models', known as neo-Malthusians [31]. Malthus is known as 'dismal person', 'gloomy person'[23] and his economy known as 'Poor economy/ Poor

Laws'[[en.wikipedia.org/wiki/Thomas\\_Robert\\_Malthus](http://en.wikipedia.org/wiki/Thomas_Robert_Malthus)]'".

However, Darwin adopted Malthus' idea exactly in his theory but he also used 'all living organisms' instead of 'Human'. Hence, Darwin applied Malthus' idea the Geometrical increase of population 11 times, struggle 84 time, existence 69 and competition 44 times in 'Origin of Species' [10]. Nevertheless, Malthus applied these terms Geometrical 5 times, competition 5 times, struggle 4, existence 30 times, respectively in his 'Principle of Population' at 1798 [[www.gutenberg.org/files/4239/.](http://www.gutenberg.org/files/4239/)].

However, evidence are provided from his Paper Published by Linnaeus Society, 'Origin of Species', 'Descent of Man' and different text books-

### 2.2. Evidence Use of Malthus's Theory from Darwin's Paper Published by Linnaeus Society, London

Darwin wrote in his paper published in by Linnaeus Society: "It is the doctrine of Malthus supplied in most cases with tenfold force..... Even slow breeding mankind has doubled in twenty-five years..... Malthus on man should be studied; ....Reflect on the enormous multiplying power inherent and annually in action in all animals; reflect on the countless seeds scattered by a hundred ingenious contrivances, year after year, over the whole face of the land; and yet we have every reason to suppose that the average percentage of each of the inhabitants of a country usually remains constant [9].

### 2.3. Evidence Use of Malthus's Theory from the Darwin's Book 'Origin of Species'

Darwin used Malthus' idea the 'Geometrical' increase of population 11 times, struggle 84 time, existence 69 and competition 44 times in 'Origin of Species' (but Malthus used these term 3, 30 and 4 times, respectively in 'Principle of Population,1798([www.gutenberg.org/files/4438.](http://www.gutenberg.org/files/4438)) and a few are mention here [10]-

i. "This is the doctrine of Malthus applied to the whole animal and vegetable kingdoms. As many more individuals of each species are born than can possibly survive; and as, consequently, there is a frequently recurring struggle for existence (*Origin of Species*, P.6)"

ii. "Each organic being striving to increase at a geometrical ratio that each at some period of its life, during same season of the year (*Origin of Species*, P.64)".

iii. "All that one can does, is to keep steadily mind that each organic being striving to increase as a geometrical ratio" (*Origin of Species*, P.65)".

iv. "As each species tends by its geometrical ratio of reproduction to increase inordinately in number; and as the modified descendants of each species will be enabled to increase by so much as they become diversified habits, most divergent offspring of any one species (*Origin of Species*, P.382)".

v. "A ratio of increase so high as to lead a struggle for life, and as a consequence to natural selection, entailing divergence of character and the extinction of less improved

forms. Thus, from the war of nature from famine and death, the most exalted object (*Origin of Species* p.395)".

#### **2.4. Evidence Use of Malthus's Theory from Darwin's Book 'Descent of Man'**

Darwin use Malthus's Theory in 3 place in his Book '*Descent of Man*' [14] such as-

i. "Civilized populations have been known under favorable conditions, as in the United States, to double their numbers in twenty-five years; and, according to a calculation by Euler, this might occur in a little over twelve years. At the former rate, the present population of the United States (thirty millions) would in 657 years cover the whole terraqueous globe so thickly, that four men would have to stand on each square yard of surface. The primary or fundamental check to the continued increase of man is the difficulty of gaining subsistence and of living in comfort. We may infer that this is the case from what we see, for instance, in the United States, where subsistence is easy, and there is plenty of room. If such means were suddenly doubled in Great Britain, our number would be quickly doubled. With civilized nations this primary check acts chiefly by restraining marriages. The greater death-rate of infants in the poorest classes is also very important; as well as the greater mortality, from various diseases, of the inhabitants of crowded and miserable houses, at all ages. The effects of severe epidemics and wars are soon counterbalanced, and more than counterbalanced, in nations placed under favorable conditions. Emigration also comes in aid as a temporary check, but, with the extremely poor classes, not to any great extent. There is reason to suspect, as *Malthus* has remarked, that the reproductive power is actually less in barbarous, than in civilized races (*Descent of Man* p.44-45)".

ii. "Malthus has discussed these several checks, but he does not lay stress enough on what is probably the most important of all, namely infanticide, especially of female infants, and the habit of procuring abortion. These practices now prevail in many quarters of the world; and infanticide seems formerly to have prevailed, as Mr. M'Lennan has shown, on a still more extensive scale (*Descent of Man* p.46)" [14]:

#### **2.5. Evidence use of Malthus's theory from different biological books**

Numerous authors declare in their biological books that

Darwin use Malthus's theory to formulate his theory natural selection but a few writings are mention here- i) Darwin observed that Malthus's reasoning was theoretically correct not only for humans but also for all other population of plants and animals [27]. ii) Darwin was greatly influenced by Malthus' book 'An Essay on the Principals of Population' (1798). Malthus stated that the human breeding potential far outstrips the limited supply of potential resources, leading to the competition of available goods and thus a struggle for existence. Darwin adopted Malthus'

ideas of competition and struggle for existence in his theory of organic evolution [26]. iii) Malthus's law finally provided the mechanism for natural selection. This law is an important step in the series of developments, which overcome the belief that human and environment are in harmony [21]. iv) Nevertheless, Darwin was greatly influence by the Malthus's idea that population increases exponentially while their food supplies only increases arithmetically. Malthus's writings impressed upon Darwin realization that under limited resources the usual circumstances in nature-not organism survive. There will be competition among organism to survive [30]. v) Before formulating the theory, he (Darwin) read an essay on human population growth written by Thomas Malthus. Malthus observed that although the reproductive potential of humans is great, many environmental factors, such as availability of food and living space, tend to keep the human population within bounds. Darwin applied these ideas to all populations of organisms. For example, he calculated that a single pair of elephants could have 19 million descendants in 750 years. He realized that other organisms have even greater reproductive then this pair of elephants; yet, usually the number of each type of organism remains about the same. Darwin decided there is a constant struggle for existence, and only a few members of a population survive to reproduce. The ones that survive and contribute to the evolutionary future of the species are by and large the better-adapted individuals. This so-called survival of the fittest causes the next generation to be better adapted than the previous generation [24].vi) Initially, Darwin was unable to find a natural process similar to artificial selection. However in 1798, he has read an essay by Thomas Malthus (1766-1834) entitled 'Essay on the principle of population'. Malthus believed that the human population has the potential to increase geometrically. However because resources cannot keep pace with the increase demand of a burgeoning population, the influences of population restraining factors such as poverty, wars plagues and famine, begin to be felt. It occurred to Darwin that a similar struggle to survive occurred in nature. The struggle when viewed over generations could serve as a means of natural selection. Traits that were detrimental for an animal would be eliminated by the failure of the animal containing them to reproduce [25]. vii) Darwin extended Malthusian idea of the struggle for existence to entire biological kingdom [21]. viii) Ideas of Lyell and Malthus were important to the development of Darwin's thought on how a species might change over time [38].

### **3. Evidence of Use of Malthus's Theory in Darwin's Theory from the Autobiography of Darwin**

About use of Malthus's theory Darwin wrote in his autobiography-

"On my return home in the autumn of 1836, I immediately

began to prepare my journal for publication, and then saw how many facts in duplicate the common descent of species. In July (1837) I opened my first notebook for facts in relation to the *Origin of Species*, about which I had long reflected and never ceased working for the next twenty years ....In October 1838, that is, fifteen months after I had begun my systematic enquiry, I happened to read for amusement 'Malthus on Population,' and being well prepared to appreciate the struggle for existence which everywhere goes on from long-continued observation of the habits of animals and plants, it at once struck me that under these circumstances favorable variations would tend to be preserved, and unfavorable ones to be destroyed. The result of this would be the formation of new species. Here then I had at last got a theory by which to work; but I was so anxious to avoid prejudice, that I determined not for some time to write even the briefest sketch of it. In June 1842 I first allowed myself the satisfaction of writing a very brief abstract of my theory in pencil in 35 pages; and this was enlarged during the summer of 1844 into one of 230 pages, which I had fairly copied out and still possess" [1,17,18,29,36,40; www.gutenberg.org/2010..... ].

#### 4. Evidence of Use of Charles Lyell's Theory in Darwin's Theory



Charles Lyell

Sir Charles Lyell was born in Scotland. He graduated B.A. second class in classics, December 1819, and M.A. 1821. After graduation he took up law as a profession, entering Lincoln's Inn in 1820. He completed a circuit through rural England, where he could observe geological phenomena. Lyell was a close and influential friend of Charles Darwin. Lyell saw himself as "the spiritual savior of geology, freeing the science from the old dispensation of Moses [en.wikipedia.org/wiki/Charles\_Lyell].

Charles Lyell declared in his 'Principle of Geology' in 1834 that the earth was evolved from the simple to the modern stage by slow and process by natural forces during millions of years. He utilized gradual 170 times his book [www.gutenberg.org/files/33224...]. Darwin applied accurate this view to natural selection. But he used 'living organisms' in lieu of the 'earth surface' and confirmed that all the living organisms evolved by slow and gradual process from a few previous simple organisms over millions of years.

However, evidence are provided from 'Origin of Species' and 'Descent of Man' and from the different text books -

##### 4.1. Evidence of Use of Charles Lyell's from the Darwin's Book 'Origin of Species' in 1859 and Descent of Man

He mention the name of Charles Lyell's 27 times and his term gradual 27 time in 'Origin of Species'. But "Lyell use the term gradual 170 times 'Principle of Geology' in 1830 [www.gutenberg.org/file/33224...]" and a few are stated at this juncture-

Darwin confirmed that "the elder De Candolle and Lyell have largely and philosophically shown that all organic beings are exposed to severe competition (*Origin of Species* p.52)". He also pointed out that "Sir Charles Lyell's noble views on the modern changes of the earth, as illustrative of geology; but human now seldom hear the action, for instance, of the coast-waves, called a slight and insignificant cause, when applied to the excavation of gigantic valleys or to the formation of the longest lines of inland cliffs. Natural selection can act only by the preservation and accumulation of infinitesimally small inherited modification, each profitable to the preserved being; and as modern geology has almost banished such views as the excavation of a great valley by a single alluvial wave, so will natural selection, if it be a true principle, banish the belief of the continued creation of new organic beings, or of any great and sudden modification in their structure (*Origin of Species* P.79). Thus the geological record will almost necessarily be provided alternating. I feel much confidence in the truth of these views, for they are in strict accordance with the general principles inculcated by Sir C. Lyell; and E. Forbes independently arrived at a similar conclusion (*Origin of Species* p.249). Moreover, he (Darwin) also pointed out that Sir C. Lyell in a striking passage has hypothesized, in language almost identical with mine, on the effects of great alternations of climate on geographical distribution (*Origin of Species* P.308)" [10].

##### 4.2. Evidence of Use of Charles Lyell's Theory from the 'Descent of Man'

Darwin applied 'Sir Charles Lyell's, opinion in the 'Descent of Man' 9 (nine) places [14] for example-

i) Sir C. Lyell had already ('Principles of Geology,' vol. ii. 1868, p. 489) in a striking passage called attention to the evil influence of the Holy Inquisition in having, through selection, lowered the general standard of intelligence in Europe (*Descent of Man* p.141).

ii) The break between man and his nearest allies will then be wider, for it will intervene between man in a more civilized state, as ....With respect to the absence of fossil remains, serving to connect man with his ape-like progenitors, no one will lay much stress on this fact who reads Sir C. Lyell's discussion, where he shews that in all the vertebrate classes the discovery of fossil remains has been a very slow and fortuitous process. Nor should it be forgotten that those regions which are the most likely to afford remains connecting man with some extinct ape-like creature, have not as yet been searched by geologists (*Descent of Man* p. 156- 157).

##### 4.3. Evidence of Use of Charles Lyell's from the Different Text Book

Charles Lyell's (1730-1875) put down the foundations of the modern science of geology. Geologist often use the slogan 'The present is the key to the past' to summarize the Lyell's idea. He wrote a book 'Principles of Geology' in 1830. In this book he mention that the surface features of

the earth (physical structure) such as mountains, rivers and rock formations change and evolve very slowly and gradually through the operation of natural forces. So, humans are not aware of its action. Consequently, the earth must be very ancient [34,39]. As a result, the mechanisms of natural selection to explain how all living organisms evolved are about the echo of Lyell's theory. There are numerous journalisms, which strongly support this but few writing mention here- i) The theory of gradual change over time also appears in Darwin's theory of evolution, applied to living organisms instead of the Earth itself. Lyell's Principles of Geology helped to encourage Darwin's thoughts on biological change. Without Lyell's work, Darwin may not have considered gradual changes as a biological mechanism [35]. ii) Darwin directly used this Lyell's idea of changing very slowly and gradually evolution of living organism through natural forces / selection [34]. iii) Darwin read the 'Principles of Geology' book by Charles Lyell and readily accepted the idea that the earth's landscape is gradually being altered through vast expenses of time and applied the idea on plants and animals. Emphasis on very gradual change of the features on the earth's surface strongly influenced Darwin's thinking. Later on, Darwin's theory of evolution by natural selection also suggests slow and gradual changes in populations of organisms- an echo of Lyell's idea [39]. iv) Darwin had no theory to work upon, as he greatly admired the geological work of Lyell, he finally determined to apply the same method to the species problem [16]. v) One development that helped foster sound thinking along evolutionary lines was the science of geology in the early nineteenth century. The geologist Sir Charles Lyell (1797-1875), in his principles of geology (1830), elaborated the theory of uniformitarianism, which stated that the causes that produced changes in the earth's surface in the past are the same that operate upon the earth's surface at present. Such forces over a long period of time could account for all the observed changes, including the formation of fossil-bearing rocks, and did not require catastrophes for an explanation of the geologic process. This concept of geology showed conclusively that the earth's age must be reckoned with in millions of years rather than in thousands. Charles Darwin was greatly stimulated by this important geologic work and was aided greatly by it in his own thinking on the processes of organic evolution [19]. vi) Darwin took the book 'Principles of Geology' written by Charles Lyell along on the voyage. He had read this unconventional book and readily accepted the idea that the earth's landscape is gradually being altered through vast expenses of time and applied the idea on plants and animals [29]. vii) Lyell's ideas provided Darwin with an important background of continuing gradual changes to review his own work [4]. viii) Ideas of Lyell was important to the development of Darwin's thought on how a species might change over time [38]. ix) Lyell's proposal became a vital building block in the development of Darwin dogma. He applied Lyell's work as transformation through forces to living organisms

[21]. Consequently, Darwin directly utilizes Lyell's theory and Darwin's theory is echo of Lyell's theory.

## 5. Lamarck's Theory as a mechanism of Darwin's theory



Lamarck

The first modern theory of evolution was forwarded by Jean Baptiste de Lamarck (1744-1829), a French botanist who proposed the theory of inheritance of acquired characteristics (structures), popularly known as Lamarckism. Lamarck began his career as a botanist but later became a zoologist. Lamarck published his theory in his book 'Philosophie Zoologique' (2 Vol. in 1809; translated as Zoological Philosophy). According to Lamarck's forth principle of inheritance of acquired structures is based use and disuse. He declared that "*The lack of use of an organ, become constant by the habits formed, gradually impoverishes this organ, and ends by causing it to disappear and even to destroy it. The frequent use of an organ become constant by habit increases the faculties of this organ, even develops it, and enables it to acquire dimensions and a power of action which it does not possess in animals which exercise less*". In 'Philosophie Zoologique' in 1809 Lamarck applied *disuse* 30 times and *use and disuse* (together) 18 times. In addition '*struggle for existence* 5 times, *struggle* 15 times, *competition* 11 times. However, few examples are placed here about *use and disuse* as a mechanism of evolution from his book '*Philosophie Zoologique*' that published in 1809:

i) Many insects which by the natural character of their order, and even of their genus, should have wings, lack them more or less completely from disuse. A quantity of Coleoptera, Orthoptera, Hymenoptera, and of Hemiptera, etc., afford examples; the habits of these animals do not require them to make use of their wings.

ii) "As regards habits, it is curious to observe the results in the special form and height of the giraffe (*camelopardalis*); we know that this animal, the tallest of mammals, inhabits the interior of Africa, and that it lives in localities where the earth, almost always arid and destitute of herbage, obliges it to browse on the foliage of trees, and to make continual efforts to reach it. It has resulted from this habit, maintained for a long period in all the individuals of its race, that its forelegs have become longer than the hinder ones, and that its neck is so elongated that the giraffe, without standing on its hind legs, raises its head and reaches six meters in height (almost twenty feet)

iii) Among the birds, the ostriches, deprived of the power of flight due to disuse of their wing, and raised on very long legs, probably owe to their singular conformation to analogous circumstances.

iv) The mole, which owing to its habits makes very little use of vision, has only very small eyes, which are scarcely visible, since they exercise these organs to a very slight

extent.

v) "The bird which necessity drives to the water to find there prey fitted for its sustenance, opens the digits of its feet when it wishes to strike the water and propel itself along its surface. The skin which unites these digits at their base, by these acts of spreading apart being unceasingly repeated contracts the habit of extending; so that after a while the broad membranes which connect the digits of ducks, geese, etc., are formed as we see them. The same efforts made in swimming—i.e., in pushing back the water, in order to advance and to move in this liquid—have likewise extended the membrane situated between the digits of the frogs, the sea-turtles, the otter, beaver, etc". [Lamarck, 1809, www.gutenberg.org/files/20556/...&.. archive.org/stream/Lamarck/the founde200556gut/...].

## 6. Evidences of Use of this Lamarck's Theory in Darwin's theory



Mechanism of evolution

Darwin uses Lamarck's forth principles to explain how evolution occurs (as the mechanism of evolution) and moved back towards a more Lamarckian position. Nevertheless, Evidences are provided form his book the 'Origin of Species' and 'Descent of Man' as well as different biological text books:

### 6.1. Evidence of Use of Lamarck Theory from the 'Origin of Species' Publish 1859

Darwin [10] applied Lamarck's idea 'disuse' as mechanism of evolution and declared 41 times in 'Origin of Species' for example-

i) Beer (1996) declared (in the introduction of the 'Origin of Species' that in the revision of the 'Origin of Species' during 1860, Darwin moved back towards a more Lamarckian position.

ii) *I believe* that the nearly wingless condition of several birds, which now inhabit or have lately inhabited several oceanic islands, tenanted by no beast of prey, has been caused by *disuse*. The ostrich indeed inhabits continents and is exposed to danger from which it cannot escape by flight, but by kicking it can defend itself from enemies, as well as any of the smaller quadrupeds. We may imagine that the early progenitor of the ostrich had habits like those of a bustard, and that as natural selection increased in successive generations the size and weight of its body, its legs were *used* more, and its wings less, until they became incapable of flight (*Origin of Species*, p.111).

iii) The eyes of moles and of some burrowing rodents are rudimentary in size, and in some cases are quite covered up by skin and fur. This state of the eyes is probably due to gradual reduction from *disuse*, but aided perhaps by natural selection (*Origin of Species*, p.112).

iv) On the whole Darwin thinks it may conclude that habit, use, and *disuse*, have, in some cases, played a considerable part in the modification of the constitution,

and of the structure of various organs, but hat the effect of use and *disuse* have often been largely combine with, and sometimes overmastered by the natural selection of innate variations (*Origin of Species*, p.117).

v) *Disuse* sometimes aided by natural selection, will often tend to reduce an organ, when it has become useless by change habit or under changed condition of life. It can clearly understand on this view the meaning of rudimentary organs. But *disuse* and selection will generally act on each creature (*Origin of Species*, p.347).

vi) Variability from the indirect and direct action of the external conditions of life, and from use and *disuse*; a ratio of increase so high as to lead to struggle for life, and as consequence of natural selection, entailing divergence of character and extinction of less-improved forms (*Origin of Species*, p.395).

### 6.2. Evidence of Use of Lamarck Theory from the 'Origin of Species' Publish 1872

Darwin writes in the 'Origin of Species' that Lamarck attributed somewhat to the direct action of the physical conditions of life, something to the crossing of already existing forms, and much to use and *disuse*, that is, to the effects of habit. To this latter agency he seemed to attribute all the beautiful adaptations in nature; — such as the long neck of the giraffe for browsing on the branches of trees. "We here see the *principle of natural selection shadowed forth principles of Lamarck* [11]



### 6.3. Evidence of Use of Lamarck Theory from the 'Descent of Man'

Darwin frequently applied the *Charles Darwin* Lamarck's idea 'disuse' to explain how human is evolved:-

a) Darwin pointed out (in the introduction of the *Descent of Man*) that it contains hardly any original facts regarding man. But as the conclusions, .... who so positively assert that this or that problem can never be solved by science. Man is considered with other some ancient, lower, and extinct form, is not in any degree new. Lamarck long ago came to this conclusion [12].

b) Darwin wrote (in the preface of second edition of his book 'Descent of Man') his critics frequently assume that he (Darwin) attributed all changes of physical structure .....that great weight must be attributed to the inheritance of the effects of use and *disuse* with respect both to the body and mind. Even in the first edition of the 'Origin of Species' he also emphasizes the use of Lamarck's [13].

c) Darwin applied 'disuse' 15 times; use and *disuse* (together) 5 times in the 'Descent of Man' as mechanism of evolution of human and a few are placed here from Darwin [14]:

i) "In order to understand the existence of rudimentary organs, it has only to suppose that a former progenitor possessed the parts in question in a perfect state, and that under changed habits of life those became greatly reduced, either from the simple *disuse*, or through the natural selection of those individuals which were least encumbered with a

superfluous part, aided by the other means previously indicated" (*Descent of Man*, p.26).

ii) "Homological structures, in the above and other cases, can be fully explained on mechanical principles, in accordance with their uses" (*Descent of Man*, p.24).

iii) "Effects of the increased *use and disuse* of parts—it is well known that the use strengthens the muscles in the individual, and complete *disuse*, or the destruction of the proper nerve, weakens them (*Descent of Man*, p. 32).

#### 6.4. Evidence use of Lamarck's Idea from the Different Text Book

Different author are confirmed in their Text Book that Darwin use Lamarck's idea for the mechanism of evolution and a few are placed here:

i) It is cited that the development and degeneration of organs is based on the *use and disuse* respectively but Darwin recognized this theory, which was originally proposed by Lamarck. Darwin accepted *Lamarck's theory* by exemplified the survival of the fittest by taking example of *Lamarck's Giraffe* with more or less similar explanation. According to Darwin, giraffe exhibited the great variations in the length of their neck and legs. Since, grass was scarce on the land the giraffes had to eat the leaves of tall trees. Naturally, giraffes with long necks and longer legs had an advantage over those with shorter legs and necks, because these could get food more easily and had better chances of survival. These forms fed, reproduced and become abundant. On the contrary, Giraffe with short necks starved and *gradually* became extinct [28].

ii) In addition, it has been cited that Darwin recognized four factors (or causes) of evolution such as- natural selection, the inheritance of acquired characteristics, the inheritance of acquired character due to direct effect of the environment and suddenly recurring variation in individuals [4].

iii) World renowned three American geneticists "E. D. Sinnott, L. C. Dunn, and T. Dobzhansky in 1988 in their 'Principles of Genetics' at page 9" pointed out that Darwin accepted the theory of inheritance of acquired characters of Lamarck's as an important factor in evolution.

## 7. Lamarck's theory is wrong and unnecessary

Darwin utilized Lamarck's theory a mechanism of evolution through natural selection as well as sexual selection (*Descent of Man*). But Literatures show that all biologists declared that Lamarck's theory is wrong and unaccepted. There is numerous writing about this but a few are placed here-

i) Alfred Russel Wallace, the co-inventor of natural selection is opposed Lamarck's theory. He (Wallace) declared that the hypothesis of Lamarck is quite *unnecessary* [37].

ii) Lyell *rejected* Lamarck's idea of organic evolution,

proposing instead *Centres of Creation* to explain diversity [en.wikipedia.org/wiki/Charles\_Lyell].

iii) Nowadays, we remember Lamarck chiefly for his *false* doctrine of inheritance of acquired characteristics [4].iv) Today biologists often associated the name of Lamarck, but we know Lamarck was *wrong* [38].

v) The study of chromosome as well as mutations *oppose* Lamarck's theory [2].

vi) Lamarck was *wrong* but he laid the groundwork of Charles Darwin [29].

vii) Johannsen (1857-1927), the Danish botanist in 1909 published the result of experiments with pure line inheritance on the size of beans, which *opposed* inheritance of acquired characteristics of Lamarck [15].

viii) Every serious attempt to test Lamarck's theory yielded *false* [8].

ix) To examine Lamarck's idea could be multiplied indefinitely but they all lead to the same conclusion, acquired characteristics are not inherited and false [16]

## 8. The Phrase 'Survival of the fittest' is not of Darwin own



H. Spencer

Survival of the fittest is the driving force or mechanism of natural selection. But this phrase is not of Darwin's own one as this term is absent in the paper published in 1858 by the Linnaeus Society and in 'The Origin of Species' 1859. It is affirmed that in modern times, it is the shortcomings as a description of Darwinian evolution. It is the keystone/ core of the theory of natural selection and the most important key factor. It has been declared that the process of natural selection soon became: 'survival of the fittest' [27]. Darwin called the above entire process of natural selection as survival of the fittest [29]. However, British sociologist and philosopher Herbert Spencer (1802-1903) first used the phrase – after reading Charles Darwin's 'Origin of Species' in 1864. Darwin first used it alongside "natural selection" in the fifth edition of *On the Origin of Species*, published in 1869, intending it to mean "better designed for an immediate, local environment [en.wikipedia.org/wiki/Survival\_of\_the\_fittes] .

## 9. Evidences of Use of Believe in Darwin's Theory

Darwin used unscientific idea believe 244 times and think 99 times and let us 29 times to support 'Origin of Species' and in 'Descent of Man' believe 190 times and thinks 74 times to sustain human evolution. But think ≈ believe≈ let us. So, Darwin used believe 372 times in 'Origin of Species' and 264 times in 'Descent of Man'. However, believe is not science as believe in God is not science. Hence, evolution is also based on believes.

*However, evidence are provided from 'Origin of Species' and 'Descent of Man':*



### 9.1. Evidence of Use of believe from the 'Origin of Species'

Darwin [11] declared:

i) Who can explain why one species ranges widely and is very numerous, and why another allied species has a narrow range and is rare? Yet these relations are of the highest importance, for they determine the present welfare, and, as *I believe*, the future success and modification of every inhabitant of this world (*Origin of Species*, p.4).

ii) When we look to the individuals of the same variety or sub-variety of our older cultivated ....which have varied during all ages under the most different climates and treatment, *I think* we are driven to conclude that this greater variability is simply due to our domestic productions having been raised under conditions of life not so uniform as, ... There is, also, *I think*, some probability in the view propounded by Andrew Knight, that this variability may be partly connected with excess of food (*Origin of Species*, p.8)..

iii) But hereditary diseases and some other facts make me *believe* that the rule has a wider extension, and that, when there is no apparent reason why a peculiarity should appear at any particular age, yet that it does tend to appear in the offspring at the same period at which it first appeared in the parent. *I believe* this rule to be of the highest importance in explaining the laws of embryology. These remarks are of course confined to the first appearance of the peculiarity, and not to the primary cause (*Origin of Species*, p.10).

iii) Amount of difference between the several breeds of the dog has been produced under domestication; *I believe* that a small part of the difference is due to their being descended from distinct species. In the case of strongly marked races of some other domesticated species, there is presumptive or even strong evidence, that all are descended from a single wild stock (*Origin of Species*, p.13).

iv) In order to make clear how, as *I believe*, natural selection acts, I must beg permission to give one or two imaginary illustrations. *Let us* take the case of a wolf, which preys on various animals, securing some by craft, some by strength, and some by fleetness (*Origin of Species*, p.70).

v) Now *let us suppose* that the ancient progenitor of our European cuckoo had the habits of the American cuckoo; but that occasionally she laid an egg in another bird's nest. .... And analogy would lead me to *believe*, that the young thus reared would be apt to follow *by inheritance* the occasional and aberrant habit of their mother, and in their turn would be apt to lay their eggs in other birds' nests, ....this nature, *I believe* that the strange instinct of our cuckoo could be, and has been, generated (*Origin of Species*, p.177)..

### 9.2. Evidence of Use of believes' from the 'Descent of Man'

*Descent of Man* [14] affirmed-

i) "No one has shown so well, how admirably such

homologous structures are adapted for their final purpose; and this adaptation can, as *I believe*, be explained through the natural selection (*Descent of Man* p.24).

(i) "Nevertheless, I did not formerly consider sufficiently the existence of structures, which, as far as we can at present judge, are neither beneficial nor injurious; and this *I believe* to be one of the greatest oversights as yet detected in my work" (*Descent of Man* p.61).

(ii) "*I believe* that the experiences of utility organized and consolidated through all past generations of the human race, have been producing corresponding modifications, which, by continued transmission and accumulation, have become in us certain faculties of moral intuition (*Descent of Man*,p.123)".

## 10. Conclusion

Darwin's Theory is a central theme of biology and all theories of evolution and nearly all scientists support it. But it is seen that Darwin's theory is the mixture of Malthus's theory and Lyell's theory and Darwin utilized wrong Lamarck's theory and idea of sociologists Herbert Spencer 'survival of the fittest' as well as believe as the mechanism of evolution. So, six (6) classical top most World renowned persons (Darwin, Wallace, Malthus, Lyell, Lamarck and Spencer) direct related to development of 'natural selection' (Origin Species and Descent of Man) but four persons are academically nonscientist (Darwin, Malthus, Lyell and Spencer) even two main persons are academically clergyman man (Darwin and Malthus). Furthermore, Malthus's theory is a theory of sociology (political economy) and Lyell's theory is a theory of evolution of soil (inert matter). So, use of these theories for evolution in case of living organisms is not so wise. Even though Lyell was a father of evolution of earth surface (geology), he himself did not believe organic evolution. In Darwin's word, "We see this in the plainest manner by the fact that all the most eminent palaeontologist/s, namely Cuiver, Agassiz, Barrande, Falconer, Forbes etc. and all our greatest geologists Lyell, Merchison, Sedgwick etc. have unanimously often vehemently maintained the immutability of species (*Origin of Species* p.251). Additionally, Darwin uses believe and similar theme numerous times to support his evolutionary theory but believe is not a science as believe in God is not a science. Hence, evolution is based on faith.

## Acknowledge

The writers is very much oblige to the authors as well as to the publishers that mention in the reference for using their information in this article.

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