**Notes on Evolution and Nogar’s Argument from Order in Evolution to God, the Source of Order/Purpose**

**Evolution**

**The Fact of Evolution**

**Geology in the early 1800’s had discovered that there were geological strata of rocks which revealed from earlier time periods species that did not exist at that time. When we go back into geological time, the species are simpler. However, as we come up through the time periods there are fossils of increasing complexity. So, for geologists, biologists and physical anthropologists, it is the fact that there has been a change in species from the past to the present.**

**Hypotheses Offered to Explain the Fact of Evolution**

**Lamarckianism**

**In the eighteenth century,**[**Buffon**](http://evolution.berkeley.edu/evolibrary/article/%3C?%20echo%20$baseURL;%20?%3E/history_06)**and other naturalists began to introduce the idea that life might not have been fixed since creation. By the end of the 1700s, paleontologists had swelled the fossil collections of Europe, offering a picture of the past at odds with an unchanging natural world. And in 1801, a French naturalist named Jean Baptiste ( Pierre Antoine de Monet, Chevalier de) Lamarck took a great conceptual step and proposed a full-blown theory of evolution.**

**Lamarck is best known for his Theory of Inheritance of Acquired Physical Characteristics, first presented in 1801 (Darwin's first book dealing with natural selection was published in 1859): If an organism physically changes during life in order to adapt to its environment, those changes are passed on to its offspring. Acquired physical characteristics are inherited, he hypothesized.**

**Of course, children learn the learn the language and culture of their parents and pass that on to their children, but Lamarck is not talking about the passing on of acquired cultural behaviors such as new words or inventions, but of the passing on of acquired physical characteristics.**

**Darwinism**

**Darwinism is a theory of biological evolution developed by the English naturalist Charles Darwin (1809–1882) and others, stating that all species of organisms arise and develop through the natural selection of small, inherited variations that increase the individual's ability to compete, survive, and reproduce. [Wikipedia]**

**12 February 1809 – 19 April 1882) Darwin was an English**[**naturalist**](https://en.wikipedia.org/wiki/Natural_history)**,**[**geologist**](https://en.wikipedia.org/wiki/Geology)**and**[**biologist**](https://en.wikipedia.org/wiki/Biologist)**, best known for his contributions to the science of**[**evolution**](https://en.wikipedia.org/wiki/Evolution)**.  He established that all species of life have descended over time from**[**common ancestors**](https://en.wikipedia.org/wiki/Common_descent)**, and in a joint publication with**[**Alfred Russel Wallace**](https://en.wikipedia.org/wiki/Alfred_Russel_Wallace)**introduced his scientific theory that this**[**branching pattern**](https://en.wikipedia.org/wiki/Phylogenetics)**of**[**evolution**](https://en.wikipedia.org/wiki/Evolution)**resulted from a process that he called**[**natural selection**](https://en.wikipedia.org/wiki/Natural_selection)**, in which the**[**struggle for existence**](https://en.wikipedia.org/wiki/Struggle_for_existence)**has a similar effect to the**[**artificial selection**](https://en.wikipedia.org/wiki/Artificial_selection)**involved in**[**selective breeding**](https://en.wikipedia.org/wiki/Selective_breeding)**.**

**Darwin published his theory of evolution with compelling evidence in his 1859 book**[***On the Origin of Species***](https://en.wikipedia.org/wiki/On_the_Origin_of_Species)**, overcoming previous scientific rejection of earlier concepts of**[**transmutation of species**](https://en.wikipedia.org/wiki/Transmutation_of_species)**.  By the 1870s, the scientific community and much of the general public had accepted**[**evolution as a fact**](https://en.wikipedia.org/wiki/Evolution_as_theory_and_fact)**. However, many favoured**[**competing explanations**](https://en.wikipedia.org/wiki/The_eclipse_of_Darwinism)**and it was not until the emergence of the**[**modern evolutionary synthesis**](https://en.wikipedia.org/wiki/Modern_evolutionary_synthesis)**from the 1930s to the 1950s that a broad consensus developed in which natural selection was the basic mechanism of evolution. In modified form, Darwin's scientific discovery is the unifying theory of the**[**life sciences**](https://en.wikipedia.org/wiki/Life_sciences)**, explaining the**[**diversity of life**](https://en.wikipedia.org/wiki/Biodiversity)**. [Wkip[edia]**

**Nogar’s First Book: *The Wisdom of Evolution***

1. **What is the thesis of Nogar's first book?**

**The thesis of Nogar's first book was an argument for God's existence as the cause of the purpose and order in this evolutionary universe.**

1. **What is the thesis of his second book?**

**The thesis of his second book was a rejection of the argument from order, because the world is not just order and goodness, but also disorder and evil.**

1. **Why does Nogar say that without accepting God as the source of evolution human action will be neither fully free nor fully intelligent? Explain why you think he said so.**

**I understand that without an understanding of God, man cannot be fully free and intelligent in his own humanity. Developing a clear understanding of the creator, designer, and maker of all that is within the universe is essential to being a free part of it.**

1. **What are the two premises and the conclusion of Nogar's argument for God as the source of order in evolution?**

**(1) Contrary and discordant things cannot, always or in most cases by parts of one order except under someone's government, which enables all and each to tend to a definite end.**

**(2) However, in the progress of evolutionary prehistory, and continuing in the present we find that things of diverse natures and processes come together and correlate under one order, and this not rarely or by chance but always or for the most part.**

**(3) Therefore, there must be some continually existing being by whose providence the world is continually governed.**

**Or in other words:**

**(1) All developing Orders reaching towards a goal are under the continuing guidance of an Orderer.**

**(2) Evolution is a developing Order reaching towards a goal.**

**(3) Therefore, evolution occurs under the continuing guidance of an Orderer.**

1. **If the premises are true, does the conclusion follow with necessity, that is, is the argument valid in the logician's sense? Explain.**

**Yes, it is valid, having the logically valid form of:**

**(1) All Y’s have Z’s. like All humans are mortal.**

**(2) X is a Y. like Socrates is a human.**

**(3) Therefore, X has a Z. like Therefore, Socrates is mortal,**

1. **What is the evidence or analysis for the truth of the first premise?**

**There are many examples of developing orders, like the writing of a sentence which must have a sentence writer who orders and guides the words toward the goal of a complete sentence that makes sense. Another example, a teacher is the orderer of a lecturer and all its parts into order to achieve the goal of teaching the students. The co-ordination of diverse elements and processes toward a definite end can be merely an accidental occurrence or chance effect.**

1. **What is the key objection to this first premise?**

**Evolutionary development and adaptation, opponents of Nogar say, is made possible by enormous waste in nature, caused by a built-in process of trial and error. Mutation and natural selection suffice to explain all the order and design among organisms.**

1. **How does Nogar answer this objection? Do you agree with his answer? Why or Why not?**

**Nogar agrees that there are chance events in nature and in the trial and error development of species through mutation and natural selection. Yet he argues that the discordant systems of nature are manifestly coordinated into a larger system that is harmonious. I agree that in the cyclical patterns of life and death in nature, it is important for one to take into account the entire picture, or the system as a whole.**

1. **What is the evidence for the second premise?**

**The most important and manifest evidence in natural prehistory is the difference between the direction of the processes of the living and the non-living world. In the non-living world, the second law of thermodynamics applies: in every exchange of energy, within a closed system, entropy or chaos is on the increase. Evolutionary prehistory manifest two major discordant and contrary sweeping developments of nature, one is in the direction of randomness and the other is in the direction of orderliness, and together they result in a harmonious evolutionary world with stable physical, chemical, and biological laws**

1. **What argument from Simpson, Nogar’s good friend, did Nogar accept after he had completed and published his first book?**

**Nogar adopted the argument that unless we can show that the world is not infinite in time and space, and not self-sufficient, then we cannot show that the creative force of Divine Intelligence is present, directing our evolutionary world. Given enough time and space over 13 billion years and billions of galaxies and billions of planets, chance could have given rise to life on earth and its evolutionary development into what we have now.**

**One of the most fundamental questions in astronomy is that of just how many galaxies the universe contains. The landmark Hubble Deep Field, taken in the mid-1990s, gave the first real insight into the universe's galaxy population. Subsequent sensitive observations such as Hubble's Ultra Deep Field revealed a myriad of faint galaxies. This led to an estimate that the observable universe contained about 200 billion galaxies.**

**The new research in astronomy shows that this estimate is at least 10 times too low.**

**Conselice and his team reached this conclusion using deep-space images from Hubble and the already published data from other teams. They painstakingly converted the images into 3-D, in order to make accurate measurements of the number of galaxies at different epochs in the universe's history. In addition, they used new mathematical models, which allowed them to infer the existence of galaxies that the current generation of telescopes cannot observe. This led to the surprising conclusion that in order for the numbers of galaxies we now see and their masses to add up, there must be a further 90 percent of galaxies in the observable universe that are too faint and too far away to be seen with present-day telescopes. These myriad small faint galaxies from the early universe merged over time into the larger galaxies we can now observe.**

**"It boggles the mind that over 90 percent of the galaxies in the universe have yet to be studied. Who knows what interesting properties we will find when we discover these galaxies with future generations of telescopes? In the near future, the James Webb Space Telescope will be able to study these ultra-faint galaxies, said Conselice. [https://www.nasa.gov/feature/goddard/2016/hubble-reveals-observable-universe-contains-10-times-more-galaxies-than-previously-thought]**

**Nogar’s Second Book; *The Lord of the Absurd***

**Nogar still accepts the logician’s view that the argument presented in the first book is logically valid, that is, if the premises are true in the presented logical format, then its conclusion must be true.**

**However, Nogar challenged the truth of the two key premises in that argument.**

1. **For the first premise about all developing order needing a continuing orderer: Give some details about Nogar's questioning of the human assumption that the world is an order, is a cosmos, whether we investigate the world in astronomy or in subatomic physics.**

**Nogar supports the notion that when science asks questions about the origin and development of the cosmos as a whole, the unity of time and space, the resulting system of explanation is largely extrapolation, far beyond accessible data for empirical proof and largely the product of pure hypothesis. Likewise unpredictability and chaotic events dominate the world of physics and microbiology.**

**For the second premise, that evolution is a developing order, Nogar notes that 99% of all species that have ever lived are now extinct—That is a lot of waste. Furthermore, in his empathetic identification with the Anaszi woman in the Southwest about 800 to 1,000 years ago whose child probably died in her arms of a blow to the child’s skull. Where is there order, beauty or purpose in that tragic event?**

1. **Why does Nogar say that we do not so much need a God who made the world in the beginning and who made it evolve as that we need a God whom people can believe in and trust in their present lives?**

**It is important for us to recognize a God that we can perceive in our daily lives, one whom we can believe in, trust and love in this fragile existence of our earth.**

**Nogar is adapting as a faith approach the famous third way of Aquinas for proving the existence of God, that our radical contingency that we live but could die at any moment shows us a faith need for belief in God as the necessary Being who sustains us in existence.**

1. **Why does Dobzhansky reject Aristotle's and Chardin's spiritual explanation by appeal to purpose inherent in the species as an explanation of those activities that seem to have such 'wisdom' in them?**

**Dobzhansky would appeal to the kind of evidence noted in Walter Cannon's book, *The Wisdom of the Body*, in which he discussed the phenomenon of homeostasis. Homeostasis is a general name for the physiological mechanisms by which a living body responds to changes in its environment in such a way that it continues to live and function normally. The maintenance of a constant body temperature in man and in other warm-blooded animals is an obvious example of homeostasis. Another example is the maintenance of a remarkably constant concentration of salt in the blood. If too much salt is taken in, the kidneys remove the excess via the urine; if the salt intake is low the kidneys let very little salt escape in the urine. Perhaps the most remarkable of all is the formation of antibodies and antitoxins which localize or eliminate infections.**

**The "wisdom" of life has impressed, and often dazed, observers from Aristotle to our day. This "wisdom" appeared to be a built-in purpose. Aristotle called this purpose of a species its final cause which Theists believe has been implanted by God as the Divine orderer of evolution.**

**But an understanding of this wisdom in scientific terms was far from easy come by, and verbal pseudo-solutions like Aristotle's have been invented again and again. The most persistently recurring of the pseudo-solutions is to say that this adaptiveness, this obvious and striking purposefulness of body structures and functions, is due to some inscrutable principle, for which the fancy names "purpose," "life-force," or "soul," have been coined or else, the adaptiveness of the living body to its environment has been without further ado declared an intrinsic property of living matter. This is precisely the pseudo-solution proposed for the so-called "First Law" stated by Lamarck: "By continued use, an organ in animals becomes greatly strengthened and enlarged to an extent which is proportional to the amount of its use. On the other hand, by continued disuse, an organ becomes weaker and deteriorates, finally disappearing.'**

1. **When does the lack of the inherent purposefulness in living things become strikingly evident?**

**When an organism is thrown into a new environment, especially one that is hard to adapt, this lack of purposefulness becomes more apparent. Orchids don’t survive outside at the South Pole; they just die.**

1. **What is Dobzhansky's main point, and why does he hold it?**

**The main point is that the appeal to purposeful intentions does not explain the evolution of any living species in the science of biology. The science of biology gives no warrant for the belief that the evolution of life as a whole had as its purpose the production of man. Evolution has no pre-determined plan except the preservation of life itself**

1. **What is science right about and what wrong about, in Whitehead's view?**

* **(1) Scientists are correct about their methodological assumptions about how to do science through hypotheses that can be tested experimentally. But**
* **(2) they are wrong in completely excluding purpose as an explanation. In scientific research, one can find only that which one's methods and instruments are capable of finding. If one proceeds on the basis of the postulates of physics and chemistry, you only find what can be stated in physical or chemical terms. If one investigates an object with a pair of scales and weights, one only gets the weight of the object. There may be other interesting things about it, but one is entitled to claim as scientifically valid knowledge only what one's instrument and method are capable of giving to the investigator.**

**How does Whitehead attempt to refute the materialist (purposeless) explanation of the behavior of living things?**

**The scientists are correct that no reactions between the material components of an animal body have been observed which in any way infringe the physical and chemical laws applying to the behavior of inorganic material. But this is a very different proposition from the doctrine that no additional principles can be involved. The two previous propositions are only identical on the supposition that the sort of physical principles involved are sufficient to determine definitely the particular activities of each physical body. The first proposition was that "no reactions in a living body break the laws which apply to inorganic bodies." This is identical with the proposition "no additional principles are involved" only if the laws which govern inorganic matter completely explain all activities of all species of living matter.**

**Whitehead is convinced that there is a mass of evidence which needs to be explained by the additional principle of purpose. The conduct of human affairs is entirely dominated by our recognition of foresight determining purpose, and purpose issuing in bodily conduct. This bodily conduct does not violate the laws of physics and chemistry and yet the purposeless laws of physics and chemistry hardly constitute an explanation of human purpose determining bodily conduct. The additional principle of "purpose" is needed to explain human purpose. The evidence is massive. Almost every sentence we utter and every judgment we form, presuppose our unfailing experience of purpose in our lives. The evidence is so overwhelming, the belief so decisive, that it is difficult to know where to begin in demonstrating it. For example, as I type out these notes, I intend to deliver it in class and place in on the WWW. Cut the explanatory principle of purpose, and this intention of mine is without meaning.**

1. **The genetic fallacy is an incorrect method of argument that mistakenly evaluates the last stages of a reality only by what is present at its earliest stage in its origin. How does Whitehead argue that the naturalist explanation of evolution might be committing the genetic fallacy?**

**It is a mistake to regard what is earlier in development as more real than what follows. The genetic method, which traces things back to their beginnings, is very useful if it does not cause us to neglect the more advanced stages. Of course, the whole process must be taken into account if we cannot explain later stages adequately or fully by the earlier stages. If we could see the earth as it was many millions of years ago, we would be impressed by the fact that no life was present. Later we might see life but no evidence of intelligent or free life. Of the first view, we would say that only mechanical forces were present. It would be observed still later that living organisms were present. Eventually the process produced humanity, with self-conscious purpose and deliberate creativity.**

**Aristotle once asked how one should study an oak tree. Where shall one start? Shall he start with the acorn or the young sapling, with the tree in its maturity or in its period of decay? Clearly all the processes belong to the concept "oak tree," and a mere description of its parts or a cross section of it at any one period does not describe the unity of the organism. For Aristotle, reality was a process of emergent evolution from potentiality to actuality. The later stages of an evolutionary process indicate most clearly the nature of the principles [especially the purposes placed in evolving realities by the Divine Orderer] that have been present throughout the process. (Titus, *Living Issues in Philosophy*)**