Evolution theory and intelligent selection

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Darwinism is the form of the evolution theory that maintains, as Charles Darwin wrote at the end of the Author's Introduction of the first edition of the Origin of Species [1], that "Natural Selection has been the main but not exclusive means of modification" of species in the history of life. By Neo-Darwinism I refer to the believe system of Richard Dawkins ([2]-[6]) and his supporters who, while fully aware of horizontal gene transfer in bacteria and archaea through plasmids and recombination, gene transfer by retroviruses and some parasites in animals and plants, an eukaryotic cells being a symbiosis of the original cells perhaps of archaeonic origin with bacterial mitochondria and chlorophylls (for all these, see e.g. [7]), punctuated equilibria [8], neutralism and all other non-Darwinian mechanisms, still maintain that natural selection is the main way of evolution. The original Neo-Darwinism of the time between the World Wars, combining Darwinism with Mendelian genetics, but unaware of the DNA, is then conveniently called Middle-Darwinism.

I reread Darwin's book, five books by Dawkins, Quammen's and Eldredge's books from my book shelves and got the impression that they rather well represent the view that is offered to the general public of the evolution theory. This view includes the claim that the evolution theory, mainly but not exclusively Darwinian, is the scientific theory of evolution, and that it has been verified, while attempts to introduce any intelligence to complement blind mechanisms of evolution is by the definition a heresy and worthy of the deepest disapproval.

Charles Darwin in his book impresses his readers by his deep knowledge, considering the time of writing, of zoology, botany and breeding. On this basis he draws very speculative and unfounded hypothesis, notably the claim that small modifications by some blind mechanisms in a long time can create the species that we see, and he often hides against attacks to his ideas behind the cover that, in his time, naturalists were totally ignorant of so many things.

Sadly, today, when biologists are not as ignorant as in Darwin's time the problems that Darwinism had in the early years have not disappeared. They have only become more apparent. Darwin did not know e.g. of enzymatic pathways. Middle-Darwinists still did not know of DNA, but Neo-Darwinists, like Dawkins, certainly know of DNA and that enzymes are proteins that are encoded from DNA. It is very difficult to see how even a single enzyme can evolve into a new enzyme that differs by, say, one third of base pairs. Yet, this has happened: for instance, the protein coding part of the lactase encoding gene has pre-forms that resemble genes of chicken in about one third of base pairs. Natural selection cannot have caused this change because if an enzyme is modified by several mutations, it almost certainly does not catalyze any useful reaction and it becomes a pseudogene. As the original gene is still needed, this development requires (or at least this seems to be what happens) that the original gene becomes first duplicated and one of the copies mutates. Natural selection can act only on active genes, not on pseudogenes. A pseudogene mutates randomly, and we can calculate a reasonably good estimate how probable it is to accumulate the necessary number of changes. Thus, one enzyme can be obtained through random mutations in a long time, but not by natural selection. The problem comes from enzymatic pathways that have more than one enzyme. Their evolution in this way seems highly improbable. I found a possible way how enzymatic pathways might have evolved without any intelligent mechanism, but it requires a new cell-based mechanism that has not yet been found. Maybe such a mechanism will be found.

Yet, evolution of enzymatic pathways is not enough. If we take any complicated process, such as milk production and consumption in mammals, we see that the mechanism is

extremely complicated. There are five major pathways. The enzymatic pathway for lactose synthesis is just a small part of the first major pathway. The system includes the Golgi apparatus and hormonal controls. Mammals evolved some 200 million years ago and milk of different mammalian subclasses (monotreme, marsupial, placental) is quite different. Milk also differs, though to a lesser extent, in different species. Clearly, milk production has evolved, and there has been a common origin. However, this evolution has been relatively fast and it is only an article of faith to state that this system has evolved along small modification involving only non-intelligent mechanisms. Neo-Darwinists, or anybody else, cannot propose any such chain of small modifications. Problems are apparent enough: mammalians evolved from mammalian-type reptiles, which presumably laid eggs and fed their young with solid food that contained all necessary nutrients. Present mammals feed their young with milk and their milk contains all necessary nutrients. Early form of milk presumably was something simple and did not contain all nutrients. Thus, what was it useful for as the young still had to bee fed with solid food? Milk should not have acquired necessary ingredients in consecutive steps because milk that did not contain all necessary ingredients could not replace solid food.

There are many such examples. Darwin confesses that he cannot imagine how bats evolved their wings, but suggests that first bats did not fly, they only glided. Dawkins gives the same suggestion, and also he does not want to elaborate the idea. But it is a problem. It is easy to imagine how a squirrel, feeding on plant food, may benefit from gliding from a tree to tree. It is harder to see how an insect eater, somewhat similar to a shrew, as the ancestor of a bat must have been, can hope to catch insects after having developed skin folds that certainly hindered chasing insects.

Dawkins claims to explain examples of this type. In several books he describes the evolution of an eye, elaborating the idea of Darwin in [1] how many different types of eyes have evolved through small modifications. Dawkins refers computer simulations where simulations optimize parameters of a preset function and in a relatively short time converge to a very good eye. The problem with this proof is that it starts with ready genes that have parameters to be adjusted. The genes already have built light sensitive cells and for some curious reason there is a gene that can make a hollow to the part where the photosensitive cells are, and another gene that has filled the hollow with transparent material where the reflection coefficient can be adjusted by setting a parameter. This setting is directly from Darwin, but where did those genes come from? Later Dawkins mentions that actually the gene for doing all this has existed in very early life. Thus, evolution of the gene is not explained in any way. The claim that there exists a way of small modifications is simply an article of faith.

Common origin of all life and evolution of species is quite well established. The question is only of the mechanism of the evolution, notably whether it requires some form of intelligence or not. Darwin claims to have many arguments that show that there cannot be any Creator.

One Darwin's argument is that the Creator would not have reused the solutions in earlier creations while making a new one. Thus, if all animals and plants can be organized into a tree, it shows that the species were not created. This is a rather weak argument and actually rules out the case that species were created by a set of independent creators, who did not copy from each other or themselves. As the genome corresponds to a computer program where the machine code is on the range of a gigabyte, every human creator-programmer would reuse all parts he can rather than writing every time from the scratch. Especially, a programmer would reuse the extremely clever embryonic development. Darwin's argument that similarities in embryonic development between classes and similarities of embryonic forms to early life forms cannot be explained in a creation theory is false. We should expect exactly that kind of similarity it any reasonably intelligent programmer had created the genetic code for different species. We also should expect that there would be relict organs:

unless the embryonic stage is redesigned, it produces what it used to produce. The unnecessary parts can be hidden, like the remains of the limbs of a snake, or reduced in size and inactive, like male nipples. Darwin does give male nipples as an argument against creation, though it is difficult to see why an intelligent programmer had designed a totally different embryonic development program for males and females. Of course, they would be mostly the same, with only necessary differences, ignoring minor issues like male nipples.

All Darwin's arguments are against a particular type of Creator: one who makes fixed species out of molecules and designs different species to different areas. Darwin's Creator is omnipotent and totally good, and can work miracles. Programmers have some intelligence, yet they do not work miracles, not are they omnipotent or totally good, and they work with a strict time schedule, while a genetic scientist, when creating a new species (which incidentally is possible, or will soon be possible) would use only possible mechanisms for changing the genome and skip the miracles. Restriction to possible methods does not reduce the scientist unintelligent. Indeed, evolution of species could just as well have happened with some intelligence guiding natural mechanisms as without guidance. The only way to distinguish between them would be to check if some modifications can with reasonable probability be made without intelligence.

Dawkins addresses one problem of this type, though Darwin in [1] does not dare to do so: evolution of life from non-life. In some other text Darwin suggests a warm pond. Dawkins mentions the bond but prefers RNA-based early life, yet concludes that also this theory remains so highly speculative that he takes refuge in the anthropocentric argument that the probability of the birth of intelligent life from non-life (by the mechanism that the make of the argument proposes, here, a non-intelligent mechanism) must be extremely small as otherwise we would see UFOs from other stars, but our existence proves that it happened. The problem with this argument is that the mechanism that Neo-Darwinists propose need not be the only possible one. Indeed, all suggested mechanisms are too highly improbable.

Charles Darwin proposed two different selection mechanisms, natural selection and sexual selection, and apparently thought that neither requires any intelligence. His example of sexual selection was the choice of female peacocks for more impressive tails causing male peacocks to possess tails that are a disadvantage in the fight for survival, but increase the number of offspring. Why Darwin considered female choice not to be an intelligent choice may be explained by the time when he lived. Indeed, his opponents did not point out that female peacocks probably choose for beauty, just like Darwin's male colleagues, all quite intelligent, would often select a beautiful woman. Darwin's opponents considered this sexual selection by females as just the opposite to an intelligent choice, a female whim. Today we have gender and even the most macho male scientists agree that females are (I guess they would agree only on nearly) as intelligent as males, but Dawkins explains the choice as a result of genes. Thus, female peacocks have a gene that makes them prefer long tails in a male. In a similar way, some people have a gene that makes them like Mozart, while other have a gene that makes them like Rolling Stones. Human males possess a gene that makes them like beauty, while human females lack this gene, as they do not select males for beauty. Instead human females have a gene for status.

It is very good to have genes for everything. Dawkins actually does support this view, at least for animals. Otherwise one would have to admit such an odd entity as free choice and what it implies, i.e., mental capabilities that we cannot build to a computer program. A peacock female surely is not intelligent in comparison to Darwin, but it is highly intelligent in comparison to Dawkins life form program. Dawkins prefers to think of life organisms as robots, but they are not robots. If it were possible to create consciousness, feelings (like fear and aggression that are felt, not as behavior patterns) and senses, like the feeling of pain, in a computer program, we can safely assume that it had been done already. What hinders it is that

complexity of a program is like books in a library and a processor is like a robot taking a book, reading a letter, and doing simple operations according to it. This cannot lead to any subjective feeling experience of consciousness, feelings or senses. There is nothing in a program that can feel anything. Instead we know that all vertebrates and some invertebrates feel pain. We know that all mammals and birds, and probably many other animals, are conscious, though not as clever as we think we are. We also know that snakes feel fear and aggression. As these mental capabilities cannot arise from robotic life, they most probably always existed. That is, they existed before there was life on the Earth. If something cannot be born of nothing, it has always been. An explanation for the origin of life that does not include these capabilities is immediately in suspect as it will not manage to explain how these capabilities appear later in evolution.

Let us look at the mechanism that Darwin needed for evolution in small steps. There are two parts: 1) mechanisms for making changes in the genome, and 2) mechanisms for making carriers of modified genome so populous that new modifications can occur in carriers of earlier modifications. The second step is mandatory since if the modified genome does not become common, modifications cannot accumulate into a chain of small modifications.

There are at least five ways for step 2: a) natural selection, b) sexual selection, c) fast growth without much competition, d) bottleneck, and e) genetic drift. Darwin considered only the two first. Maybe a retrovirus pandemic could be a sixth way.

The problem with natural selection is that it requires a chain of modification where every intermediate stage is an improvement. This usually limits the usefulness of this mechanism to a small number of mutations. In enzymes it may be nearly impossible to find any changes, thus many protein coding parts of enzyme encoding genes have not changed at all, or very little. We get a direction to higher survivability from this mechanism,

Sexual selection has the aspect that it is related to mental capabilities, usually unconscious, but still mental. Therefore we can get a direction to higher values from this mechanism: more beauty, more intelligence, more altruism, more caring, and so on. If the individuals select by such criteria, then these entities are quite real. They simply are not entities from the robot world of Dawkins.

Fast growth may be the main mechanism in evolution. After a major extinction there is low competition and all flowers can blossom for some time. We avoid the condition that a mutation must be always an improvement. It is possible to first to get worse and later to get better: this is the only way to find other local maxima. Any mutated individual can grow to a large enough population if competition is sufficiently low. Later there is screening by natural selection for better forms. The direction is given by natural selection.

A bottleneck is usually thought of as random selection of a small population, but it is not necessarily random: if only few individuals survive, or pass to a new area, then characteristics and actions (including mental characteristics) of these individuals determine if they belong to the small group of survivors. Here is as much possibility for intelligent choice as in sexual selection. This mechanism can give a direction.

Finally there is genetic drift. It is random and does not give a direction.

We have two mechanisms out of five for step 2 that can result to intelligent selection. Darwin did not describe what the mechanism of variation in step 1 could be. He just stated that there is always possibility for positive variation that natural selection can use, a position that in my opinion is incorrect: the probability of positive mutations decreases fast and we get the result as in Eldredge [8]: after short bursts of change species tend to stabilize for a long time. Darwin also believed that use and lack of use of an organ leads to inherited changes. This Lamarckistic view in the original form has been discarded, but horizontal gene transfer is in a sense Lamarckistic. Neo-Darwinists, like Dawkins, do propose a theory how small modifications to genome are made: by mutations. Mutations have a role, but they are not the

only way. There is gene transfer and there is symbiosis. I suspect that there is a cell-based immunosystem-type mechanism that is active in all cells, including germ cells, and it can create new RNA by combining short sequences taken from the genome and inverse transcribe them to the genome. Such a mechanism would help to explain the evolution of enzymatic pathways, and much more, but the mechanism is yet to be found. However, there is an accepted mechanism of jumping genes, which is something similar.

As a conclusion I notice that there is no verified scientific theory of evolution. The Neo-Darwinistic theory, as presented by Dawkins, is not sufficient. People are simply cheated in this issue, and when it is taught in the school, people believe. There are new discoveries that modify the evolution theory, mainly in bacteria, but also in vertebrates, like transfer of genes. Yet, these still suffer from the initial religious goal of the evolution theory to explain evolution without intelligence. It has to be the blind watchmaker, else we are lost.

This goal may seem odd considering that Darwin writes at the final chapter in [1] (it is not from the first edition of the book but from Darwin's text Historical Sketch of the Recent Progress of Opinion on the Origin of Species, third edition). In a footnote of this final chapter Darwin writes that the evolution theory started 1794-95 by three people simultaneously: Geoffroy Saint Hilaire, Erasmus Darwin and Johan Wolfgang Goethe. Notice that Erasmus Darwin, Darwin's grandfather, and Goethe were Freemasons. St. Hilaire was Deist and a member in the secret Order of Sophisians, a Masonic secret society of participants in Napoleon's Egyptian campaign. Masons were not atheists, as Dawkins is. They were Deists, against the interpretations by the Christian Church, but still Deists of their own religion. Science, at that time, had rather recently developed (or evolved?) from alchemy, and the roots of alchemy include Middle Platonism and Gnosticism.

It is indeed a Gnostic view to consider the Creator as an Eternal Being. Eternal Beings are Platonic ideas, like Wisdom, Beauty. Certainly Natural Selection (which Darwin writes in capital letters) is an Eternal Being, a principle, just like mathematical identities are Eternal Beings, not born, but found, eternally true. Gnostics did not think that the Eternal Being who created the world, Yaldabaoth, was God (see e.g. [9], it is just Nag Hammad texts). They did believe in God, but in God that seldom interferes with events of this world (except for sending Jesus, Wisdom). Yaldabaoth had other names: Sakla (the mad one) and the blind god. Sakla was the Eternal Being who claimed that there is not other god than he. This can well be compared with Dawkins, the first prophet of Sakla, stating that there is no other creator than the blind watchmaker. But for the early creators of the evolution theory this was a lie: there is God, their God. This may explain why the Protocols of the Learned Elders of Zion, a Masonic document, probably written by Theosophists around 1897 for creation of Anti-Semitism, lists Darwinism as one of the false isms that they (Masons) have propagated. Masons could not be atheists, and they had a plan for the new world. Sadly, Charles Darwin was taken by this lie. Or it may be that Darwin shared the belief of these Deists. In the end of the first version of [1] Darwin writes "life...having been originally breathed into a few forms...". Dawkins, an atheist, thinks Darwin added this sentence to calm down critics, but the Gnostic idea is exactly that Sakla did not manage to create beings that were really alive (meaning, having a feeling soul/self, insects Sakla probably could create) and Wisdom, Sophia, breathed life to Sakla's creations. Thus, humans, like other higher animals, have their real origin not in this world, but are trapped in this world ruled by Sakla. As Darwin's grandfather and father were Masons, it is very possible that he meant exactly what he wrote here. While this Gnostic idea is not what Jesus probably meant, it was a natural Hellenistic interpretation of Christianity.

If there ever is written a scientific theory of evolution, I would expect to see some role to catastrophes (not like in Cuvier's theory, but like in [10]). Catastrophes would connect the evolution theory to the theory of times, which was the main scientific achievement of the ancient world, and it is not so bad as a theory. I would expect there to be probability

calculations that show that the proposed mechanisms can indeed do what is claimed, and I would not be surprised if there are my cell-based immunosystem-like mechanisms that build DNA as a response to alien proteins in the cell. Finally, I would expect that the religious view of banning all intelligent mechanisms because they remind some people of the Yahwe-cult, but that the theory would acknowledge the fact that many animals have mental states and can do choices. This fear of free choice is very common in science: for instance in psychology it is maintained that intelligence is influenced by environment and genes, own actions are forgotten. Or, they are in the non-shared environment. Why not say, own choices.

If such a theory is ever made, I think it is very likely that it does not conclude that there is no meaning in the evolution history. Usually, even if you cannot see the meaning of something, there is some sense in it.

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