From Booze to Beechnuts

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Abstract

The foundation of this paper is the generation of all life by evolution. Based on this assumption, everything has to be compatible with Darwin's theory. I discuss some issues that concern living beings and ask some rhetorical questions. The answers are provided through speculations. I present arguments for evolution and some general thoughts. I show that certain properties of living beings are compatible with evolution. Except for those in the chapter 'Homosexuality' all arguments are my own ideas. All points are only personal views.

1 Introduction

I assume that all life on Earth was generated through evolution. Of course, this assumption cannot be proven. Some questions about the properties of living beings are discussed. Basically, I ask how something like 'evolution' could create certain traits, for instance, why some people have an interest in mathematics.

2 Prejudices

In the first question, I discuss prejudices. I believe that the tendency for people to have prejudices is innate. Of course, I cannot prove this.
A humorous example comes from the German comedian Johann König. In his show, he described the situation: 'Imagine that you return home, and there is a lion in your apartment.' Even if you have never had bad experiences with a lion, when you see its claws and teeth, you will naturally be cautious and that's a good decision! The animal could be dangerous.

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Although some lions may be friendly, it is wiser to be suspicious and careful. Such a prejudice could save your life.

I believe that prejudices are innate, as they have been advantageous for millions of years, despite occasionally leading to incorrect judgments. They enable humans to respond with remarkable speed in potentially dangerous situation. However, in modern society, some of theses inherited predispositions may no longer be appropriate or beneficial.

3 Booze

Everybody knows the effects of alcohol. The production of wine and beer has been part of human culture for thousands of years. In the past, beer may have been an important source of food. It was also considered a high-quality beverage compared to water, which was often polluted.
The human liver has the ability to break down alcohol, but only ethyl alcohol (C_2H_5OH). The related substance, methyl alcohol (CH_3OH) is toxic. Fortunately, during fermentation, fungi almost always produce nearly ethyl alcohol.
Where does this difference come from? In other words, why can the liver break down ethyl alcohol but not methyl alcohol? A possible explanation is that people in ancient times ate fruits in autumn that had fallen to the ground. These fruits often began to ferment naturally and therefore contained small amounts of alcohol. Those who were able to digest the fermented fruits survived, while other may have died of hunger. This trait was then passed on to the next generations.
As a result, humans can digest small amount of ethyl alcohol, but of course, not a bottle of vodka everyday. Eventually, people discovered the pleasant effects of alcohol, and learned how to intentionally produce it through fermentation.

4 Acorns and Beechnuts

In this chapter, I discuss the question of why oaks and beeches have relatively large fruits, acorns and beechnuts, compared to willows or poplars. Large fruits require a significant amount of material, so why do these trees invest so much in producing them ?
In my opinion, the answer lies with animals. The Eurasian red squirrel (Sciursus vulgaris) and the jay (Garrulus glandarius) use acorns and beechnuts as winter food store. The German names ‘Eichhörnchen’ and ‘Eichelhäher’ even refer to this connection. Naturally, these animals prefer large fruits. During autumn, they stockpile up to a thousand food catches. While they remember most of them, some are forgotten. From these forgotten stores, new trees can grow. In this way, these trees spread and increase in number.
Therefore, evolutionary pressure favors the production of larger fruits. In contrast, willows and poplars rely on the wind for seed dispersal.

5 Mathematics

Some people have a talent for mathematics, and some of them also enjoy it. For instance, the German mathematician Gauß began working with mathematics in his youth. I ask: why has evolution produced people who enjoy mathematics, even though its practical applications might only appear in the future? I estimate that less than one percent of all mathematics ever created is actually applied. Hence, people cannot know in advance whether their mathematical work will be used. Yet these individuals cannot be deterred from engaging with mathematics. Why has evolution made them this way? The answer may lie in the past.

Many years ago, during the Stone Age, people often faced starvation. Some individuals began creating traps, such as loops, to catch animals. In doing so, they may have survived, passing their genes on to the next generations. Those who lacked this ability may have perished.
Making loops is a highly complex process. To catch animals, one has to anticipate what would happen if an animal steps in to the trap, which requires substantial abstract reasoning. (Apart from that, it is a cruel death for the trapped animal, which could last hours or even days)

I personally had an insight while in a hospital. I lay in a room with a few televisions without sound, so as not to disturb other. To hear the audio, two small speakers were provided. First, you had to plug the speakers in using two cables. Sometimes the cables were tangled, and I could not untangle them without help.

I believe that creating loops was a clever hunting strategy for those capable of doing so. This ability may have been crucial for survival, which could explain why some people today derive joy from abstract thinking.

6 Sex

Bacteria reproduce by cleavage, so for them, a single sex is sufficient. Why, then, do highly developed animals generally have two sexes? The answer lies in the rearrangement of genes. When animals reproduce sexually, their genes are shuffled, creating genetic diversity. Therefore, having two sexes is clearly advantageous compared to only one, as it makes evolution possible.

Some people argue that there is a third sex. I believe this is unlikely, as there is no clear evolutionary reason for its development.

7 Sweat

Before the advent of farming, a key factor for survival in the Stone Age was successful hunting. I imagine that young people began training for hunting at an early age. One essential requirement was the ability to run for extended periods. Because the body easily overheats, evolution produced sweat glands. Through perspiration, hunters could cool their bodies, allowing them to run longer and increasing their changes of a successful hunt. The evolution of sweat glands may have been a crucial development for human survival.

8 Sugar and Salt

In this chapter, I discuss the fact that, in general, people enjoy sweet and salty foods (usually not together, except in ketchup). The reason for the preference for sweet foods is that nearly all natural sweets are healthy, with one possible exception of honey. Of course, this does not apply today, but millions of years ago, sweet foods were mainly available in the form of fruits during autumn. In those times without cookies or chocolate, the only way to consume sweet foods was to gather ripe fruits. Occasionally, one might find a beehive and be able to eat honey, likely enduring some painful bee stings in the process.

Living near the coast made access to salt easy, as local foods contained enough of it. The difficulty arose when people settled far from the coast, where obtaining sufficient salt could be a problem. Salt is essential for successful hunting, since sweating causes the body to lose not only water but also salt (NaCl). Therefore, evolution has favored the development of an appetite for salty foods.

9 Homosexuality

This chapter contains ideas that are not my own. I have read them elsewhere.

Here, I ask why homosexual people exist, even though they do not reproduce directly. The answer may be that groups of people are more peaceful if a minority of members is homosexual. For a man, another homosexual man poses no threat, as he unlikely to attempt to take his wife. The same applies to women. Life in the Stone Age was extremely challenging, and survival depended on living and cooperating in groups. This required certain social behaviors, as it was important to regard others as allies rather than rivals. One way to foster a feeling of cohesion was through common activities, such as dancing or making music together. A book that discusses this topic is [1].

I assume that the genes contributing to homosexuality are not only present in homosexual individuals but may also exist in other members of the group.

10 Pedophilia

This chapter deals with the phenomenon known as 'Pedophilia'. I only discuss a possible genetic basis for it. I do not consider the power imbalance between an adult and a child, and I do not take any position on the morality or legality of the behavior.

One million years ago, a child could play anywhere, usually under the supervision of two people (typically the parents). They did their best to protect the child, but could not watch everything. Behind every bush could hide a lion, ready to kill and eat the child. The probability of survival increased significantly when a third person also looked after the child. The third person might have been an uncle, an aunt or even a completely unrelated individual, who has fallen in love for the child, or had only a sexual interest in them.
The similar situation could occur today, without the threat of a lion, but I believe that the impact on survival probability would be minimal.

Similar to the previous chapter, I presume that the genes influencing pedophilic tendencies may not be present only in pedophiles, but also in other members of the group.

11 Nails

You are probably a neat person and cut your nails regularly. This is necessary because fingernails and toenails continuously grow. In this chapter, I ask why this is necessary. Why do nails grow faster than they are worn down? The answer is that the growth rate is just right. Of course, this does not apply today. but in the Stone Age, life was so demanding that nails grew at a rate sufficient to compensate for natural wear. I speculate that the growth rate was perfectly adapted to those conditions. Today, nails grow somewhat faster than necessary.

12 Oceans and Rivers

The number of species in rivers and lakes is nearly twice as large as the number in the sea, even though freshwater habitats cover a smaller area. This may be because salty water is less suitable for life. whereas freshwater provides more favorable conditions for the emergence of new species.

13 Migratory Birds

Some birds are migratory, such as the White Stork (Ciconia ciconia), while others are stationary, such as the Greenfinch (Chloris chloris). Why has evolution produced these differences? Migration appears to be a disadvantage, as it is a dangerous journey. I believe that, initially, there were no migratory birds. In the north, weather conditions were as harsh as today, but

animals learned that summers could be mild and favorable. Some birds, capable of migration, began to fly to warmer areas in autumn. In spring, they returned to raise their offspring, as warmer climates also provided more food. I believe that, over time, this behavior become encoded in their genes. Some birds adapted to survive harsh winter conditions and therefore had no need to migrate, remaining stationary.

14 Witches

In the Middle Ages, Christianity was very intolerant. It was common practice to burn people at the stake if they were suspected of being in league with the devil. Most of the victims were women. For instance, the mother of Johannes Kepler, the man who discovered that celestial bodies move around each other in ellipses was accused of being a witch. Fortunately, her son managed to have her absolved of the accusation.
Burning 'witches' brought satisfaction not to the victims, of course, who suffered a horrible death, but to others, who probably felt justified. Many likely thought 'God is very fair: The bloody witch gets what she deserves'. Some may have felt pity for the accused, but they could not show it, as this would have been dangerous. It was safer to hide one's emotions: otherwise they themselves might have been accused of being in league with the devil.

15 Chimpanzees

It is well-known that chimpanzees are social animals, and their young are very cute. Researchers have been surprised to discover that chimpanzees are also effective and successful hunters. They hunt and eat smaller apes. Some chimpanzees remain on the ground to block escape routes, while others climb in to the treetops to capture and kill the prey. After a successful hunt, they share the catch with those who stayed on the ground.

In this way, chimpanzees can obtain meat, which is normally rare in their primarily plant-based diet. This success is possible because the apes cooperate and are intelligent. Chimpanzees have learned that cooperation greatly enhances their personal abilities. I believe that, over time, this trait has become encoded in their genes: in other words, evolution has selected for social competence, as individuals lacking this ability would have been less likely to survive.

16 Milk

Some Asian people cannot digest the lactose in milk, while a large proportion of Europeans can do so without problems.The ability to drink milk was a significant advantage when humans began domesticating livestock. Survival no longer depended entirely on successful hunting, which allowed people to have more children due to steady food supply. Of course, in modern times, this ability is less important, as few people face starvation, and most do not rely solely on livestock farming.

17 War

War is regarded as a major problem among human societies. Many attempts have been made by politicians to resolve conflicts between states, and some have been unsuccessful. I believe that risking one's life is a profoundly social act, since life is the most valuable thing we can give. To sacrifice one's life for others whether for the 'crown', the 'nation', a belief, or another cause is a distinctly social behavior. This differentiates humans from most animals, which generally do not risk their own lives for others.

18 Medical Science

Fortunately, many human societies provide medical care; for example, I would not survive without it. On the other hand, humans are products of evolution, and medical science operates contrary to natural selection. In nature, individuals with anomalous behaviors or appearances often die, as nature is cruel and merciless. Most creatures experience violent deaths, and it is rare for animals to die for old age. Evolutionary progress occurs through death, although it would be sufficient to prevent certain individuals from reproducing.

19 Cuckoos

The cuckoo (Cuculus canorus) is a well-known migratory bird, famous for its call and infamous for its reproductive strategy. Newly hatched cuckoos push eggs and chicks of other birds out of the nest. If they survive the fall, they still die from hypothermia. This strategy is a clever evolutionary adaptation, allowing cuckoos to proliferates as long as most other birds follow a different reproductive strategy. Although this behavior may seem 'mean' from a human social perspective, evolution has shaped these conditions.

20 Enemies

Enemies play an important role in human societies. The concept of a powerful adversary can be psychologically useful. Having an enemy image allows people to distinguish between 'good' and 'bad' and creates a sense of unity within a group. For instance, Adolf Hitler considered the Jews 'bad'. The tendency to form an enemy image appears to be a general property of humans, shaped by evolution.

21 Spiders

Nearly everyone finds spiders disgusting. Both the slow, hairy ones and the quick ones. I strongly believe that this aversion is innate, since animals like butterflies tend to evoke sympathy instead. Why has evolution produced this fear, given that Europe has no dangerous spiders? This suggests that humans did not originally develop in Europe (It is only possible to survive here with a heat source due to the harsh weather), but in regions where dangerous spiders exist, such as Africa.

22 The Peacock Paradox

In this chapter, I discuss peacocks (Pavo cristatus), and magpies (Pica pica). Even Darwin wondered about the 'Peacock Paradox'. Male peacocks have spectacular plumage, while females are inconspicuously colored. The paradox is resolved by sexual selection; female peacocks choose males with the most eye-catching feathers for breeding.

Similarly, magpies are conspicuous birds. They are among the most visually striking birds in Germany, with their black and white feathers and long tails. Unlike camouflage, their appearance is highly visible. Interestingly, female magpies look similar to males. I am not sure why; perhaps at magpies, appearance is not genetically linked to the sex.

23 Corruption and Crime

In this chapter, I examine why governments cannot fully stop corruption, even though it causes significant damage to society. Corruption benefits both the person giving money for a service and the person receiving it. In this sense, it can be seen more as a social behavior than a crime. I believe that this behavior has been shaped by evolution, as it provides advantages to both parties. Of course, today governments must continue to fight corruption, as in modern societies its harm outweighs its benefits.

Similarly, delinquency will not disappear entirely, as successfully committing a crime provides an advantage to the criminal.

24 Fascism

Two famous dictators behaved in a similar way. Both il Duce (the leader) Benito Mussolini and der Führer (the leader) Adolf Hitler, stood above the crowd and delivered speeches, while many others stood below and hailed them. I believe this behavior is more a social act than a moral failing. People tend to unify behind a seemingly wise leader, who (usually male) promises to guide them toward a bright future.

I think this tendency is innate and has been shaped by evolution. The leader makes all the important decisions; some of which may be terrible. Unfortunately, leaders are often motivated by a desire for power rather than wisdom, which can lead to dictatorship instead of a promised bright future. I also believe that, in general, the majority of people may not be well-suited for democracy.

AFTERWORD

As I stated in the Abstract, the notes above represent my personal opinions. Therefore, I have refrained from providing additional references. Furthermore, I have always made an effort to write as concisely as possible.

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References

[1] William H. Calvin: *The River That Flows Uphill* (2001)