

Short Communication

Parallelism of the Evolution of Social Insects and Humans: A Hypothesis

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Abstract

Social insects have eradicated the instincts inherited from their solitary ancestors that were harmful to communities. The elimination of these instincts was accomplished by natural selection, the units of which were communities. Man has not yet eradicated the instincts inherited from their solitary animal ancestors that were harmful to communities. But their eradication is underway. And it is also being accomplished by natural selection, the units of which are societies. Completion of evolution in this direction will probably lead to the disappearance of human instincts harmful to society, as they have disappeared in social insects. This will happen after a period of time measured not by historical standards, but by geological.

Introduction

Civilizations are temporary entities. They appear and disappear. The fate of modern civilization has been intensively discussed in the last century and especially in the current one. What awaits modern civilization in the future worries many authors [1]. There is an assumption that not only modern civilization will perish, but also humanity. According to V.F. Levchenko [2], it will “leave the stage”.

Man is not only a social creature but also a biological one. Like all biological species, he is subject to evolution. The works on the future of man available to the author are devoted either to a discussion of the fate of modern civilization or to the evolution of man in the direction of adaptation to the conditions of the environment changed by him. They cover periods of time measured by historical standards. The article is devoted to a discussion of the fate of humanity in the geological future.

The ancestors of social insects lived alone. The transition to community life occurred due to the transformation of instincts. This transformation was completed many tens of millions of years ago. Communities arose in ants and termites about 100 million years ago. Bees and wasps began to live in communities later, but also long before the appearance of man on Earth [3]. The author of this article will not discuss the initial stages of the transformation of instincts. This transformation was completed in stages. At first, some members of the community, enjoying the benefits of membership in it, used it as a source of livelihood, without bringing anything to it

in return. Let’s call them “egoists”. The behavior of “egoists” reduced the cohesion of the community, and therefore its adaptability and reliability of existence.

The distant ancestors of man were animals that also lived alone. Man has not yet gotten rid of all the instincts of their solitary animal ancestors, which prompt him to commit acts harmful to society. Some people, enjoying the benefits of membership in society, use it as a source of livelihood, without bringing anything to it in return. Let’s call these people “egoists”. “Egoists” reduce the cohesion of society, and, therefore, its adaptability and reliability of existence. The purpose of the article is to present a hypothesis according to which human evolution will go along the path of getting rid of “egoists”. This deliverance will go through natural selection, the units of which will be societies. Societies in which there are fewer “egoists” than in others will have an evolutionary advantage.

Humanity is evolving along the same path that social insects evolved

Human instincts are divided into biological and social. Biological instincts are instincts inherited from solitary animal ancestors. They cause the desire for self-preservation, nutrition, reproduction, and protection of territory. Social instincts cause the desire to be useful to people and society. The ratio of the energy of social and biological instincts varies

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from person to person. It is genetically determined for each person [4,5]. Let's call people whose energy of social instincts is greater than the energy of biological instincts "altruists"

"Altruists" care less about their well-being than "egoists". They are worse off financially than "egoists". More of them die during wars than "egoists". Egoism is necessary for survival in society. The share of egoists in society is growing, and "altruists" are decreasing [6,7]. Mutations that enhance the energy of atavistic biological instincts are supported by natural selection, of which humans are a minority. More and more "egoists" are born. Relationships between people are becoming less and less humane [8]. Societies are degrading. The degradation of societies is their aging. The aging of society is similar to the aging of an organism. It also ages due to internal processes occurring within it, and these processes also reduce the reliability of its existence.

Aging of an organism shortens its lifespan and thus accelerates natural selection, i.e., population evolution. And acceleration of population evolution allows it to keep up with changes occurring in the environment. The aging of society shortens its lifespan and thus accelerates human evolution. And acceleration of human evolution allows humankind to keep up with changes occurring in the environment. The shorter the lifespan of societies, the more effective natural selection, the units of which are societies, the faster human evolution proceeds, and the more successfully it adapts to environmental changes. If societies did not degrade, their lifespan would be longer. Human evolution would proceed more slowly. This would make it more difficult for them to maintain the reliability of their existence.

Aging of the organism is its senile involution, that is, the replacement of cells that used to perform the functions of organs (liver, lungs, etc.) with connective tissue cells that are unable to perform them. The older the organism, the greater the proportion of its organ cells replaced by connective tissue cells, the worse its organs function, the weaker the adaptability of the organism, the lower its ability to ensure the reliability of its existence, and the more likely its death from old age.

"Altruists" are analogs of the body's cells that ensure the functioning of its organs and maintain the reliability of its existence. "Egoists" are analogs of connective tissue cells that contribute to the senile involution of the body. The older the society, the greater the proportion of its "altruists" replaced by "egoists", the lower its adaptability and the more likely its cessation of existence. The aging of the organism is the adaptation of the population, and the aging of society is the adaptation of humanity. The aging of societies ensures a reduction in the duration of their existence, accelerates the evolution of humanity, and increases its adaptability.

The degradation of societies is the growth of the proportion of people whose instincts drive them to immoral behavior. These instincts will be eradicated from humanity. Their

eradication will occur in the same way as it happened with social insects, that is, by natural selection, the units of which will be societies. Those societies in which the proportion of "egoists" is especially high will be eliminated. Societies in which the proportion of "egoists" is lower than in others will have an evolutionary advantage. The consequence of this will be a decrease in the proportion of "egoists" in humanity and an increase in the proportion of "altruists". The energy of atavistic biological instincts harmful to society will weaken, and the energy of useful social instincts will increase. This process is already underway. In South America, there were human sacrifices. In ancient Rome, people entertained themselves with gladiator fights. Until recently, there were tribes of cannibals. Now these customs are unacceptable. Man is becoming more and more humane and his humanity will continue to increase. Eventually, atavistic antisocial instincts in man will be completely eradicated.

Human evolution is slower than that of social insects. The duration of the existence of social insect communities is months or years, while the duration of the existence of human societies is centuries or millennia. These processes will take time for humanity measured not by historical standards (centuries and millennia), but by geological standards (millions of years).

Discussion

The builders of communism in the USSR wanted to direct the efforts of all people to the well-being of society. To achieve this goal, they re-educated people. However, most people continued to care about their own well-being. A. Markov [9] was right when he argued that it is more profitable to be an egoist than an altruist. E.O. Wilson [10,11] was also right when he argued that the ultimate causes of human actions are not instilled rules of behavior, but human biology, his instincts. A person cannot break free from the framework of biology. The history of mankind unfolds within them [12]. Therefore, the USSR, ruled by communists, suffered a crumb.

But the societies of Antiquity and Classical times that did not strive to build communism also collapsed. Their collapse was caused by people's excessive concern for their own well-being to the detriment of concern for the reliability of society's existence. And this collapse occurred at a late stage of these societies' existence, when they were degrading, that is, growing old. The aging of society and the replacement of some societies by others increases the adaptability of humanity and the reliability of its existence. The aging of societies is the adaptation of humanity.

In communities of social insects, individuals' concern for their own well-being at the expense of concern for the reliability of the community's existence has not been described. Their communities have already undergone natural selection. All communities in which concern for the well-being of its members was more important than the well-being of the



community have been eliminated. “Egoists” have not been described in communities of social insects.

Man has only just embarked on the path of eradicating “egoists” from their societies. This eradication is carried out through the struggle between societies. Systems of not only the organismic but also the supraorganismic level, including humanity, have the ability to adapt to the environment. Natural selection, the units of which are societies, is the adaptation of humanity, aimed at increasing the reliability of its existence. The collapse of societies that have lost this struggle is a great misfortune for its members. But it is the path to increasing the reliability of humanity’s existence.

Conclusion

A hypothesis about the future of humanity is proposed. It opposes the opinion of some authors who believe that humanity will not be able to adapt to changes in nature caused by its activities and will die out.

References

1. Balatsky IV. Will Acapolysis happen? Bull Russ Acad Sci. 1998;68(9):822-7.
2. Levchenko VF. Evolution of the biosphere before and after the appearance of man. St. Petersburg: Science; 2004. 166 p.
3. Zherikhin VV. Using paleontological data in environmental forecasting. In: Environmental forecasting. Moscow: Science; 1979. p. 113-32.
4. Astaurov BA. Homo sapiens et humanus. Man with a capital letter and the evolutionary genetics of humanity. Novy Mir. 1971;1:214-24.
5. Shevtsova VM. Genes and social evolution. Moscow: URSS Publishing House; 2015. 282 p.
6. Laverycheva IG. Altruism and egoism as the basis of moral certainty. Bull St. Petersburg Univ Ser 6. 2008;1:196-208.
7. Laverycheva IG. Altruism and egoism from a natural science point of view. Biosphere. 2016;8(3). Available from: <https://cyberleninka.ru/article/n/altruizm-i-egoizm-s-estestvennonauchnoy-tochki-zreniya>
8. Tarasov BN. Where history is heading: metamorphoses of ideas and people in light of the Christian tradition. St. Petersburg: Aletheia; 2001.
9. Markov A. Human evolution in two books. Monkeys, neurons, and soul. Book 2. Moscow: AST Publishing House; 2022. 512 p.
10. Wilson E. About human nature. Moscow: Kuchkovo Pole; 2015.
11. Wilson EO. Planet of ants. Moscow: Alpina Non-Fiction Publishing House; 2022. 211 p. (Animal Series).
12. Harari YN. Sapiens: a brief history of humankind. Moscow: Sinbad; 2019.