Prospect of Astrobiophilosophy for the next generation and the future.
Where do we come from? Where are we now? Endless practices before becoming a wonderful global citizen

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Abstract
The proposal for a new human lifestyle based on astrobiophilosophy is presented in this article. Astrobiophilosophy is fundamentally based on the theory of quantum mechanics. Academic knowledge can be described in the following hierarchy of sciences: physics, chemistry, biology, psychology, and philosophy.

All living organisms on Earth have their origin in the environment of the planet and, after their death, these organisms again form part of the environment. Based on scientific evidence, it has been observed that the cycle of life on Earth depends on the circulation of atoms and molecules through processes such as biogeochemical cycles.

Earth can be described as a high-dimensional environmental giant life which has survived for 3.8 billion years. Human beings should take the role of pilot for this spaceship Earth and always participate in the endless practice to be wonderful global citizens.

Key Words
astrobiophilosophy, hierarchy of sciences, theory of quantum mechanics, cycle of life, high dimensional environmental giant life

1 Introduction
The COVID-19 pandemic caused by the new coronavirus SARS-CoV-2 highlights the reality of the fragility of modern human culture. Our way of life, politics, culture, and scientific progress are currently in a state of flux.

I plan to live for 120 years by maintaining my health. However, the pandemic has seriously threatened my health as I am 79 years old and as the virus is said to pose a serious threat to older people, if I get infected by the virus, I will be highly vulnerable. As a cautionary measure I have put all my affairs in order. If my health is seriously undermined by COVID-19, I don’t want to use life-supporting equipment such as ECMO (extracorporeal membrane oxygenation).

We, as human beings, need a novel philosophy based on the innovative aspects of life sciences that will deal effectively with the pandemic to ensure a sustainable future. The new philosophy should be easily accepted, understandable, have universal appeal, and be applicable to all age groups.

When I was a lecturer at Kitasato University, every year I would give an introductory lecture to first-year students regarding the natural sciences involving physics, chemistry, biology, psychology, and philosophy. With these in mind, I have developed a new philosophy that includes aspects of each of the above fields and have named it “astrobiophilosophy.”

2 Hierarchy of academic disciplines
In Japan, academic disciplines are vertically classified. However, I disagree with this categorization as I believe they should be stacked up progressively, starting with ancient human culture and moving ultimately to philosophy. I would like to propose an arrangement of academic knowledge in a pyramidal
structure to understand the relationship between physics, chemistry, biology, and psychology (Fig. 1).²,³

Physics covers the investigation of the universe including topics such as the beginning of the universe, that is, the Big Bang, as well as the composition, laws, and evolution of the universe. It also examines the energy, elementary particles, atoms, molecules, and principles of natural phenomena and is therefore placed at the base layer of the proposed pyramidal structure of academic disciplines (Fig. 1).

Chemistry is the study of structures, functions, and the reactions of substances composed of atoms and molecules. These substances are supported by elementary particles and, therefore, chemistry can be explained on the basis of physics. Consequently, it is placed in the layer above physics in the proposed pyramidal structure.

Biology is the study of living organisms that are composed of molecules such as proteins, nucleic acids, sugars, lipids, etc. As genetic materials, nucleic acids (DNA and RNA) play a central role in the development of life. Proteins play important roles in the formation of the structure of living organisms as well as the process of metabolism through the action of enzymes. The cell, the structural unit of all living organisms, is separated from other cells with membranes which mainly consist of lipids, proteins, and sugars. Lipids and sugars constitute the sources of energy for living organisms and all of these chemicals are biomolecules. Heredity, metabolism, birth, growth, and death are basically biochemical reactions. Furthermore, it goes without saying that the workings of a living organism are based on physical laws. Therefore, biology, constituting a limited special domain of chemistry, is placed in the layer above chemistry.

The discipline of study related to the mind and behavior of humans is called psychology. As psychology is controlled by brain functions, it falls into the domain of biology and is placed in the layer above biology. Various fields such as literature, music, art, politics, economy, sociology, mathematics, and religion can be found in the domain of psychology. The mind and feelings of humans play an important role in these fields. As mathematics is a study that is theorized by the human brain, it is placed in the domain of psychology. In reality the boundaries between physics and chemistry, chemistry and biology, biology and psychology, and so on are blurred because of the complicated relationships between these disciplines.

I have set astrobiophilosophy above psychology in the hierarchy of academic knowledge because philosophy should be the central axis that runs through the middle of the disciplines of physics, chemistry, biology, and psychology. The highest layer of the hierarchy of disciplines is X-civilization, which will be the future civilization based on astrobiophilosophy.

3 Life phenomena are chemical reactions

A chemical reaction occurs whenever there is a change in the energy level of the electron cloud between multiple atoms (Fig. 2). The nucleus is located at the center of an atom and is surrounded by an electron cloud. A comparison of the volume of the electron cloud with that of the atomic nucleus shows that it is one trillion to one quadrillion times larger than that of the nucleus. When a chemical reaction occurs, the nuclei remain essentially unchanged, while the electron clouds change their structure. All phenomena related to life observed on Earth originate from the vast space of the electron clouds of multiple atoms.

The existence of electron clouds was discovered around 100 years ago, which then led to the theory of quantum mechanics and realized innovative bioscientific development⁴. Furthermore, through the discovery of semiconductor technology, civilization is now evolving from an information technology revolution to a world run by artificial intelligence (AI). Yuval Noah Harari sounded the alarm bell that human society will be taken over in the near future by its own AI⁵.

Stephen W. Hawking predicted that due to uncontrolled industrial production and consumer activities that soon the human race will need to emigrate to other planets to ensure its own survival⁶. Such a negative outlook regarding the future of Earth has been increasingly adopted in recent years, however, I doubt that the future of Earth will be as grave as has been predicted. We have not yet discovered the significance of the world of the electron cloud which has hidden limitless possibilities. The solutions to difficult and urgent problems of modern
society such as issues relating to energy including nuclear energy, conservation of the environment, inadequate food supply and medical care, human rights issues, discrimination, religious conflict, and populism can be derived from the electron cloud. On the other hand, it is also important to note that nuclear fission for nuclear power generation is very dangerous to all living organisms on Earth.

4 The Nobel Prize for academic disciplines

Alfred Nobel had a highly developed scientific foresight. His motivation for establishing the Nobel Prize can be explained by his history: a chemist, engineer, and industrialist, throughout his life. Nobel was also interested in literature and poetry, and he formed a friendship with Bertha von Suttner, an author, who was also known as the "generalissimo of the peace movement". The Nobel Prize is awarded in the following categories: Physics; Chemistry; Physiology and Medicine (a category in biology); Literature (a part of psychology); and Peace (a prize related to human civilization, that is, related to all disciplines). These five domains represent the hierarchy of the disciplines stated in this study (Fig. 1). The Nobel Prize in Literature is awarded to the writer who has produced "the most distinguished work of an ideal tendency" based on the prescript in Nobel's will. The Nobel Prize in Economic Sciences was established in 1968 via a donation from Sveriges Riksbank (Sweden's central bank) to the Nobel Foundation in memory of Alfred Nobel on the occasion of the bank's 300th anniversary.

5 Education and understanding of the implications of hierarchy for the young generation and official members of government and parliament

It is not necessary for psychology experts to understand chemistry and physics in detail, but they must have an understanding of the hierarchical structure of fundamental sciences. At the very least, through compulsory elementary school and junior high school education, individuals should be educated in the wider implications of this hierarchy. It is also important for official members of the government and politicians associated with educational administration to understand the hierarchy.

6 The cycle of life and the high-dimensional environmental giant life

If we view Earth from space, it is easy to understand that Earth is a planet comprised primarily of water (which supports living organisms). All living organisms on Earth ingest nutrients such as sugars which are the products of photosynthesis. Photosynthesis is the process by which carbon dioxide, water, and certain inorganic salts are converted into carbohydrates such as sugar and starch by plants, algae, and certain bacteria by using photoenergy. During this process, oxygen is released from the plants and photoenergy is converted into chemical energy that is ultimately used for all activities of all organisms on Earth. Animals obtain the necessary nutrition from plants which thrive as a result of biogeochemical cycles. The nutrients produced by plants move from small animals to large animals, and this process is commonly known as the food chain. Human beings are at the top of the food chain and their diet consists of many kinds of animals, plants, and microorganisms. After the death of living organisms, their bodies are destroyed by chemical and biochemical degradation and transformed into small molecules like water, carbon dioxide, and so on, becoming a part of the environmental components: atmosphere, ocean, and land. Subsequently, the atoms of the degraded organisms become the components of the next new generation of living organisms. The cycle of life on Earth is dependent on the biogeochemical cycles that are based on the transformation of atoms and molecules. Life on Earth up until now has presented multifarious evidence regarding the cycle of life (Fig. 3). Compared to Earth's age, each organism's life lasts for less than an instant. This miraculous phenomenon of the cycle of life can be explained by the change in the energy level of the electrons among the electron clouds of the atoms present in all substances.

Earth can be described as a planet that has supported life for the past 3.8 billion years and consists of an atmosphere, ocean, and land. This blue planet, a high-dimensional environmental giant life filled with a mind-boggling variety of organisms, is floating in the true black space of the universe (Fig. 4).

7 Becoming a wonderful global citizen

It is important to consider whether or not we should
maintain the continuous practice of becoming wonderful global citizens throughout our lives. This is because the practice of attempting to become global citizens might lead to failure. When faced with failure, people need to apply the experiences gained from the failed attempt to their new attempt of achieving their objective. We might become more evolved and wonderful global citizens after engaging more in practices that assist our development, and when we die, we will then be content with our attempts to practice being wonderful global citizens during our lives.

Life on Earth has existed due to its favorable environment, and based on scientific evidence, we can assume that Earth has harbored life for the past 3.8 billion years. Every human being should take the responsibility of safeguarding Earth’s future. It is my sincere hope that the top leaders of each field stay alert and become active participants in the changes occurring in a post-coronavirus world.

Human beings should work hard to acquire knowledge, interact with others, and experience various troubles and hardships to learn the purpose of their lives. I suggest that the definition of the term “wonderful global citizen” would be imagined differently by each person. In my case, my view of wonderful
global citizens is as follows: all humans should get along well together despite differences in culture, nation, race, religion, sex, and wealth; they must have respect for racial variety and guarantee fundamental human rights for everyone; and there is rich biological diversity in the world. Wonderful global citizens should despise war, respect all living organisms, protect water and air from pollution, and lead fulfilling lives. I consider wonderful global citizens as humans who are always trying to broaden their minds, enlarge their hearts, and cultivate spirituality.

Wonderful global citizens could make Earth a peaceful planet (Fig. 5).

8 Conclusion

The phenomenon of life is caused by changes in the electron clouds of atoms. All phenomena related to life could be theoretically described as chemical reactions. The reason why so many phenomena related to life have not yet been understood as chemical reactions is because in many respects, science is still immature. Human beings still have a long way to go to achieve a sustainable and peaceful environment on Earth. In support of this scientific knowledge, the search for the final meaning of a human being’s life is the main intent of “astrophilosophy”. This philosophy is in its initial phase, and this philosophical concept will slowly mature hereafter. I would be grateful to receive candid criticism and advice from experts in various fields.

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