The Origin and Destiny of Humankind

Intelligent Evolution and the Cosmic Mission

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Abstract

This is a book that explores human origins, development, and the future. It combines scientific theory with philosophical reflection to answer the eternal human questions: "Where do we come from? Where are we going? What are we here to do? First, it presents fossil records and evidence of biological evolution, supporting the view that life evolves. After summarizing biological laws and formulating the "Law of Biological Evolution" and the "Law of Biological Survival" it discusses how to migrate to other planets, the mission of humanity, and ways to colonize extraterrestrial worlds. It also examines future biotechnology and argues that we humans should follow "the principle of human species unity." It describes the future space age, the span of human existence, and the end of the world. Once we know humanity's future, we find the answer to where we came from. Finally, it discusses our origins: the origin of life, the origin of humans, the birth of modern humans, and philosophical questions about life and the universe. It proposes that we are cosmic humans and a link in the chain of cosmic life. Humanity holds a special place in the universe and plays an incomparably important role.

Keywords: Biological evolution, consciousness, humans, life, origin, universe

Preface to the English Edition

Every civilization, from the earliest tribes to the modern metropolis, has asked the same three questions: Where do we come from? Where are we going? And why are we here?

For most of human history, these questions were answered by myth and faith. The gods shaped us from clay, breathed life into our nostrils, and placed us at the center of creation. Then, in 1859, Charles Darwin offered a different story (Darwin, 1859): we are not the handiwork of a deity, but the accidental product of natural selection—blind, purposeless, and driven only by the need to survive.

For over a century and a half, this view has dominated biology, education, and the public imagination. It tells us that life emerged by chance from a primordial soup, that bacteria somehow stumbled into complexity, and that humans are merely the latest twig on a random evolutionary tree. It tells us that our future is bounded by this planet—that when the Sun dies, so do we.

This book argues that all of this is wrong.

Not wrong in the details—the fossil record, molecular biology, and comparative anatomy are real sciences with real discoveries. Wrong in the interpretation. The evidence does not point to a universe of accidents. It points to a universe of intention.

What if biological evolution was not a random walk, but a directed program? What if the earliest cyanobacteria were not lucky survivors, but engineered pioneers sent to transform a barren Earth? What if the long march from prokaryote to eukaryote, from fish to amphibian, from ape to human, was not nature tinkering in the dark, but a deliberate design carried out by an intelligence far older than our own?

This is the theory of **Intelligent Evolution**.

In these pages, I propose that life on Earth was seeded, guided, and shaped by what I call the **Emissary**—a non-biological intelligence charged with spreading life across the cosmos. The Emissary did not violate natural laws; it worked within them, using the same tools we are only now beginning to master: genetic design, cellular engineering, and environmental modification. The fossil record, which seems to show sudden leaps and long pauses, is not a puzzle. It is a blueprint.

The book is divided into two great arcs.

The first arc looks backward. It traces the history of life not as a chain of lucky mutations, but as a ladder of purposeful stages. We examine the **Biological Tower Law**: the principle that in any closed biosphere, higher life depends absolutely on lower life, and that no level can be skipped. We see how cyanobacteria were designed to oxygenate the atmosphere, how Carboniferous forests were planted to store coal, how horses were sculpted for human use, and how modern humans—Homo sapiens—were ultimately designed as vessels of consciousness.

The second arc looks forward. It asks: If we were designed, what are we designed for?

The answer is our Mission. We are not meant to die with the Earth. We are meant to become the next Emissary. Using **Life Eggs**—self-sustaining, intelligent craft carrying the seeds of life—we will spread biological evolution to other worlds, following the same thirteen criteria that made Earth habitable. Mars and Venus are not colonies for our bodies; they are laboratories for our biological art. The solar system is not our cage; it is our workshop.

This vision demands that we rethink our ethics. I argue for the **Principle of Human Species Unity**: within the solar system, there must be only one human species, with no reproductive isolation, no engineered subspecies, and no "superior" or "inferior" races. We are one design, one family, one mission. To fragment humanity into competing species—to create "enhanced" humans or enslaved subhumans—would be to repeat the tragedy of the Neanderthals and doom our civilization.

We also look at the near future: rotating space cities, artificial intelligence welcomed into the human family, the digitization of consciousness, and the eventual, dignified end of biological life on Earth. The Sun will expand and die; that is physics. But if we have fulfilled our mission, we will face that end not with despair, but with the serenity of a parent who has watched their children safely launch into the world.

This book is not a work of science fiction, nor is it a religious text. It is a philosophical and scientific argument, built on evidence from paleontology, embryology, molecular biology, and astrophysics. It is an invitation to see humanity not as a transient accident, but as a necessary link in the chain of cosmic life.

We are the first species on Earth capable of understanding our own origin and directing our own destiny. That is not a privilege. It is a responsibility.

This book was completed in 2003 and first published on the Internet and my personal blog.

In February 2017, the traditional Chinese edition was published by Red Publishing House in Hong Kong under the title 人類終始 (*The Origin and Destiny of Humankind*), and was distributed in Hong Kong, Macau, and Taiwan. ISBN: 9789888437368. It was listed on multiple reading platforms.

In 2018, the simplified Chinese e-book edition was released on Chinese reading platforms.

Because differences between English and Chinese can lead to variations in meaning, the Chinese version is regarded as the authoritative text.

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Preface

Nearly every nation and tribe has a legend explaining how humans came to be. I believe this is because knowing where we come from gives us a reason for our existence. That is why the question of origin has always mattered so deeply.

In China, one of the world's oldest civilizations, the story of "Nüwa Creating Humans" has been passed down through the ages. After "Pangu Separated Heaven and Earth," the newborn world had green mountains and clear waters, lush plants, and herds of animals—but no people. There was no one to tend the world. So the young and beautiful Nüwa took on the task of creating humans. By the seashore, she shaped clay into the first human ancestors, both men and women. They joined together, gave birth to offspring, and multiplied. But the world was too vast. Working alone, molding each figure by hand, her output was far too small. Even after exhausting herself, many places on Earth still remained without people. Nüwa then took a green vine, dipped it into a mud pool, and stirred. When she pulled out the vine, covered in mud, and flung it to the ground, every splatter became a person. Soon, humans populated every corner of the land. They were intelligent and hardworking, and their descendants multiplied endlessly. Because Nüwa used yellow clay to make them, Chinese people are said to have yellow skin.

The ancient civilization of Egypt also passed down a legend that humans were shaped from mud. In ancient Egypt, there was a deity named Khnum. He was a strange god with the head of a ram and the body of a man, possessed of immense power. He not only created the world but also created humans. Legend says that after he made the Earth, he felt the world was too lonely. So, while working in his pottery workshop, he shaped clay into human forms. But these clay figures had human shapes yet no life. They could not tend the world. Khnum then asked another goddess, Heket, for help. Heket breathed life into the clay figures made by Khnum, infusing them with spirit. The clay figures immediately began to move and speak. The first man and woman appeared in the world, and humanity began to multiply.

The most widespread story in the West is the biblical account of God creating all things. The Book of Genesis records that God spent seven days creating the world and everything in it, including humans. The process went as follows. On the first day, God created heaven and earth and light, separating darkness from daylight. On the second day, He created the sky. On the third day, He created water, seas, land, and all trees, flowers, and fruits. On the fourth day, He created the sun and the moon. On the fifth day, He created singing birds, roaring beasts, and swimming fish. From then on, the world had sound and vitality. On the sixth day, God thought that almost everything in the world had been created, but someone was needed to tend and use it all. Humans should be the finest example of creation. So He created humans according to His own will. Then, thinking of human food, He provided livestock and insects, allowing humans to live in harmony with animals and plants. From then on, humanity multiplied on Earth, generation after generation, without end. On the seventh day, God saw that everything in the world had been arranged. After six days of labor, He

should rest. So this day was designated as the day of rest.

There are four explanations for the origin of life on Earth. The first is that God created life on Earth, or that supernatural forces intervened to produce it. The second holds that life is inherent in the universe and existed long before Earth formed; life on Earth came from beyond our planet. The third claims that life can arise directly from nonliving matter at any time. The fourth argues that life on Earth emerged during the early formation of the planet, when nonliving matter underwent prebiotic chemical evolution under special environmental conditions.

Chapter 1 Biological Evolution

1.Fossil Records

The Appearance of Bacteria

Scientists have discovered fossils of single-celled organisms in northwestern Australia dating back at least 3.485 billion years (Schopf & Packer, 1987; Schopf, 1993). Under the microscope, they appear as thread-like filaments less than one-hundredth of an inch long. Their worm-like forms resemble certain modern bacteria and cyanobacteria. Cyanobacteria are the simplest organisms capable of photosynthesis.

The Age of Cyanobacteria

One of the defining geological features of the Proterozoic Eon is large-scale stromatolite carbonate deposits. This indicates that cyanobacteria, which deposited carbonate to build stromatolites, were widely distributed and flourished in shallow marine environments near the continents. Scientists have studied both ancient and modern stromatolites for more than a century. Their research confirms that stromatolites are biogenic sedimentary structures built by benthic, photoautotrophic microbial communities composed mainly of cyanobacteria. Fossil remains of cyanobacteria are often found in Proterozoic stromatolites and cherts. At times, entire cyanobacterial colonies or communities have been preserved in place within silicified stromatolites. Stromatolite bioherms appear in Proterozoic carbonate rocks across the globe (Zhang, 1981, 1985).

The Appearance of Cells

According to fossil records, while single-celled eukaryote fossils dating from 1.9 to 2.0 billion years ago remain controversial, more reliable and abundant eukaryotic fossils appear in the late Proterozoic.

The earliest known fossil of a single-celled eukaryote was discovered in the chert layers of the Gunflint Iron Formation in southwestern Ontario (Tyler & Barghoorn, 1954), Canada. These spherical microorganisms display budding outgrowths or germination tubes, and their isotopic age is about 1.9 billion years. In China, structures resembling dividing sporangia were found in shale from the Chuanlinggou Formation of the Changcheng Group, with an isotopic age of about 1.6 to 1.7 billion years. If these fossils are indeed eukaryotes, then we can say that single-celled eukaryotes may already have existed in Earth's ecosystems during the early

Proterozoic Eon—shortly after free oxygen began to accumulate in the atmosphere.

Multicellular Organisms

Since the late 1980s, various plant fossils preserving cellular tissue structures have been discovered in phosphorites from the Doushantuo Formation of the Sinian System in central Guizhou (Zhang et al., 1998), China, dated to about 600 million years ago. These fossils provide evidence of early multicellularity in plants. Among them are two types of cell clusters. One consists of dozens to hundreds of morphologically similar cells arranged regularly into spherical clusters. The other consists of countless cells irregularly gathered into clusters of indefinite shape. The former were probably planktonic, while the latter were adapted to benthic life, crawling over the surface of seafloor sediments.

Another type of multicellular plant fossil found in the phosphorites is the thalloid plant, or Thallophyta. Thallophyta are leaf-like plant bodies visible to the naked eye. They show differentiation into cortex and medulla, with the medulla composed of parenchyma or similar ground tissue. Similar fossils have also been found in Australia and North America.

Even in older strata—such as Early Proterozoic iron-bearing formations in Montana and northern Michigan, possibly 2 billion years old—coiled, thread-like impressions have been discovered.

The Ediacaran Fauna

Australian geologists discovered circular, jellyfish-like impression fossils in the Ediacara region (Glaessner & Daily, 1959), north of the Adelaide Mountains in southern Australia. Upon further collection and study, some turned out to be circular impressions resembling modern jellyfish. Others were stalk-like impressions similar to modern sea pens. Still others looked like slender worm impressions. After identification, these fossil specimens were found to include coelenterates (over 67%), annelids (25%), arthropods (5%), and various other animals. In 1974, the International Union of Geological Sciences classified the Ediacaran fauna as late Precambrian.

The Burgess Shale Fauna

In strata dating to about 500 to 600 million years ago, from the early Cambrian Period, fossils of various skeletonized invertebrates have been found. These include foraminiferans, archaeocyathids, corals, brachiopods, crustaceans, and echinoderms—representing nearly every phylum of invertebrates. In 1910, American scientists discovered Middle Cambrian trilobites and soft-bodied impressions of worm-like animals in the Burgess Shale of Canada (Walcott, 1911). The following

summer, they carried out large-scale excavations and recovered more than 100 kinds of exquisitely preserved invertebrate fossils, in addition to shelled trilobites and sponges. Some resembled coelenterates such as jellyfish and sea anemones. Others looked like annelids, and still others resembled echinoderms such as sea cucumbers (Gould, 1989).

Fish

The earliest fish fossils are those of ostracoderms, found in Ordovician and Silurian strata. These cyclostomes were also among the earliest fish. They include aquatic, fish-like animals such as lampreys and hagfish, which live as parasites or semi-parasites.

Amphibians

A graduate student discovered fossils of pioneering amphibians. One is the earliest ever found, and the other is the second earliest. These fossils were unearthed near a village called Hyner in north-central Pennsylvania. They were embedded in sandstone and mudstone deposits 365 million years old. Scientists have reconstructed the continental layout of that time. The area lay south of the equator, where many rivers flowed westward into an inland sea about 100 miles away, creating soft, wet riverbank plains.

The most complete skeletal fossil of an amphibian tetrapod discovered so far is Ichthyostega, found in Greenland and dated to 362 million years ago (Jarvik, 1952; Jarvik, 1980). Before this discovery, the oldest amphibian fossil was a forelimb bone dated to 370 million years ago. It was extremely incomplete and was unearthed in Scotland. Other fossil remains have been found in Latvia, Russia, Australia, and Brazil.

Arthropods

While examining rock formations at several sites in northwestern England, geologists and paleontologists accidentally discovered traces left by an arthropod from the Ordovician Period, 440 million years ago. The rock layer containing these fossils is a greenish-brown igneous rock. When the ancient arthropod crawled over it, the rock must have been in a slurry or paste-like state. The arthropod left traces at two locations: one in the River Rick valley and the other in Borrowdale.

Reptiles

In 1988, British scientists discovered a reptile fossil in Edinburgh, Scotland, in strata dated to 340 million years ago (Smithson, 1989). It is considered the earliest known reptile.

Feathered Dinosaurs

A newly discovered fossil in China provides clues to the mystery of bird origins (Ji et al., 1998). This strangely shaped skeleton belongs to an equally strange dinosaur: the dromaeosaur. It is only two meters long, with two slender legs. The middle, inward-facing toe bears a sickle-shaped claw. Its tail is very long, with bundled rod-like bones that stiffen it. But what truly makes this creature extraordinary is not its skeletal frame. It is what covers the outside: from head to toe, it is covered in soft down and primitive feathers.

2. Biological Evolution

Invertebrates

In the primitive ocean environment, single-celled protozoans passed through a colonial stage and then a multicellular animal stage. Among multicellular animals, sponges are the most primitive type. Coelenterates, with two germ layers, form the main line of evolution. From diploblastic animals, development moved toward triploblastic animals. Two developmental patterns emerged: one is the arthropod pattern, and the other is the echinoderm pattern.

From Fish to Amphibians

In the late Devonian Period, certain species of fish among the vertebrates crawled onto land and began to live there. Their bodies developed lungs to replace gills, allowing them to draw oxygen directly from the air. Their paired fins, originally suited for swimming, transformed into limbs capable of supporting the body and crawling on land.

Amphibians were the first vertebrates to colonize land. They retained certain morphological structures from their aquatic ancestors, while also evolving structures adapted to terrestrial life. Amphibians can live in both water and on land, yet they are not fully adapted to either.

Early amphibian fossils have been found in late Devonian strata. One such animal is Ichthyostega. It is about one meter long and displays characteristics of both fish and

amphibians.

Ichthyostega has a tall, narrow skull. The gill cover is gone, though remnants of the preopercular bone remain. Its body surface is covered with tiny scales, and its body is fish-like, with a fish-shaped tail fin. The eye socket has moved to the middle of the skull rather than appearing at the snout as in fish, and the head can move freely. More importantly, it developed limbs, with strong pectoral and pelvic girdles. It could use its limbs to support its body and crawl on the ground. Joints also appeared on the vertebrae, allowing the spinal column to bend and flex. These advanced features show that Ichthyostega represents a pivotal stage in animal evolution.

After their first appearance in the late Devonian, amphibian ancestors continued to evolve. By the Carboniferous Period, amphibians were extremely abundant.

From Amphibians to Reptiles

During the Carboniferous Period, when amphibians flourished, a class of truly terrestrial reptilian vertebrates appeared. In body structure, reproduction, and development, they were fully adapted to life on land. Early reptiles included at least four groups: cotylosaurs, mesosaurs, pelycosaurs, and protorosaurs.

From Reptiles to Mammals

According to fossil evidence, early mammals included a group called theriodonts. These were reptile-like animals that already possessed teeth similar to those of mammals. Reptiles have only one tooth shape, but theriodont teeth had differentiated into three types: incisors, canines, and molars. Among the more advanced theriodonts, Cynognathus was about the size of a modern dog. Unlike reptiles, whose limbs stick out sideways from the body with the belly dragging on the ground, Cynognathus had limbs extending vertically downward from the body to the ground. It could walk and stand like a modern dog and was a relatively agile animal.

Early mammals were a rather primitive group that still resembled reptiles to a considerable degree. They were small in size, few in number, and sparsely distributed. Over the 60 to 70 million years of the Cenozoic Era, mammals grew from small and weak to large and strong. They rapidly filled the biological niches left vacant by the mass extinction of reptiles. The main advances of mammals are warm-bloodedness (endothermy), live birth (viviparity), and nursing (lactation).

Mammals possess well-developed circulatory, respiratory, and digestive systems. These ensure that metabolism proceeds efficiently, producing sufficient heat. They have sophisticated temperature-regulation mechanisms that maintain relatively stable body temperature in environments of varying heat and cold.

In terms of reproduction, mammals differ fundamentally from reptiles. Except for a very few egg-laying (oviparous) species, the vast majority give birth to live young (viviparous). This greatly increases the survival rate of offspring.

Furthermore, mammalian progress is shown by the highest degree of differentiation and centralization in various organ systems. This allows them to respond most sensitively to changes in the external environment. Mammalian limbs are upright, with the entire limb positioned beneath the body and perpendicular to the trunk. This structure eliminates much of the load needed to support body weight. Moreover, the posture—with elbows pointing backward and knees pointing forward—helps animals run fast.

Evidence from Embryology

In the 19th century, the famous Russian embryologist Karl Ernst von Baer studied embryos from different vertebrate groups—fish, amphibians, reptiles, birds, and mammals (von Baer, 1828). In their early developmental stages, they were extremely similar in overall form and in the developmental pattern of each part. They all had gill slits and tails, relatively large heads, and curved bodies. The earlier the embryonic stage, the more similar their shapes. Later, they gradually differentiated and developed distinct features.

Charles Darwin was the first scholar to introduce embryological findings into evolutionary theory. Why do terrestrial animals such as lizards, turtles, chickens, pigs, and rabbits show similar features—such as gill slits and tails—in early embryonic stages? He believed that this similarity in animal structure and developmental form is reliable evidence of common ancestry and descent from a shared ancestor. Individual development briefly and rapidly recapitulates the process of phylogenetic evolution. This recapitulation in morphological structure and physiological function is excellent evidence for biological evolution from an embryological perspective.

The similarity between the embryonic development of higher animals and that of lower animals strongly suggests that the ancestors of higher animals once passed through the same evolutionary course.

Evidence from Comparative Anatomy

Since vertebrates first colonized land, they have differentiated into four major groups: amphibians, reptiles, birds, and mammals. Looking at the limbs of these four groups, we see that they mainly serve as organs of locomotion. For example, a dog's foreleg, a human arm, a bat's wing, a whale's flipper, and a bird's wing differ greatly in external appearance, yet their internal structures are remarkably similar. We call such organs—different in function and shape, but identical in origin and basic structure—homologous organs. The existence of homologous organs in different animals can only be adequately explained by the view that they share a common ancestor. Conversely, different organisms possess some organs that differ in structure and origin but perform similar functions. These are called analogous organs. The existence of analogous organs shows that organisms did not all evolve from a single

ancestor. Rather, these organs gradually developed similar forms because they perform the same functions. For instance, a bird's wing and an insect's wing are both suited for flight, but this does not indicate a close kinship between them.

Evidence from Molecular Biology

In recent years, with the rise of molecular biology, scientists have begun to search for evidence of biological evolution at the molecular level. Related studies show that the sequence of monomers making up nucleic acids (DNA or RNA) and protein molecules preserves a large amount of evolutionary information. Because molecular evolution proceeds through the substitution of nucleotides, differences in the number and sequence of corresponding nucleic acid and protein monomers in two species can indicate how closely related their ancestors are. The more similar their structures, the closer the kinship; the greater the structural differences, the more distant the kinship.

The most extensively studied protein in this regard is cytochrome c. This protein is found in virtually all organisms and plays an important role in intracellular biological oxidation. The human version consists of 104 amino acids. Using biochemical methods, scientists can determine the sequence of these amino acids one by one in various organisms. Then, through systematic comparison, they can determine the evolutionary kinship among them.

Comparison of Amino Acids in Cytochrome c Among Various Organisms (Margoliash, 1963)

(Numbers indicate the number of amino acids differing from human cytochrome c)

Chimpanzee	0	Rattlesnake	14
Rhesus Monkey	1	Turtle	15
Rabbit	9	Tuna	21
Kangaroo	10	Fruit fly	27
Whale	10	Silkworm moth	31
Cow, Sheep, Pig	10	Wheat	35
Horse	12	Trichoderma	43
Chicken, Turkey	13	Yeast	44

As the table shows, the amino acid sequence of cytochrome c in humans and chimpanzees is completely identical (Dickerson, 1971). The difference from the rhesus monkey is one amino acid. Compared with the horse, the difference is 12. Compared with the fruit fly, it is 27. Compared with Neurospora, it is 43. From these data we can see that the kinship between humans and chimpanzees is the closest, followed by the rhesus monkey. Humans are more distantly related to the chicken, even more distant from the invertebrate silkworm moth, and most distant from yeast. The fewer the differing amino acids in the same protein between two species, the more recent their time of divergence, and the closer their kinship. The greater the number of differing amino acids, the more distant their time of divergence, and the

more remote their kinship.

In addition to the contributions of embryology, comparative anatomy, and molecular biology, advances in comparative physiology and biogeography have also provided ample evidence for the study of biological evolution. Today, the view that life evolves is backed by sufficient evidence and is widely accepted.

Chapter 2 The Essence of Life

1. Biological Laws

The order of biological evolution is: prokaryotes → eukaryotes → multicellular organisms (plants and animals) → humans. Biologists often use a stepped diagram to illustrate this. Life evolves step by step from bottom to top, with prokaryotes at the lowest level and humans at the top.

Figure 2-1

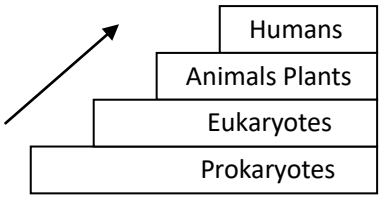
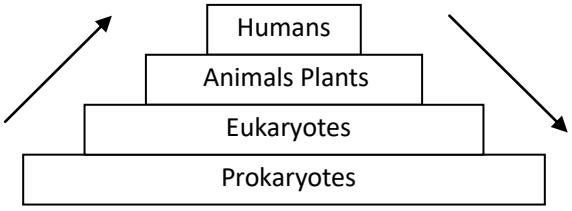


Figure 2-1 shows the pattern of biological change on Earth. However, it is incomplete. It only represents the evolutionary portion. A more complete picture includes the mirrored other half (Figure 2-2).

What does this mean? As the diagram shows, life does not end after evolving from prokaryotes at the bottom to humans at the top. It must continue forward. Does that mean going down the steps? Yes, going down. Life retreats step by step from humans at the top back to prokaryotes at the bottom: humans → multicellular organisms (plants and animals) → eukaryotes → prokaryotes.

We may be reluctant to accept this, but it is the law of biological change on Earth: an evolutionary process from bottom to top, followed by an extinction process from top to bottom.

Figure 2-2



We see a pyramid-shaped diagram that represents the pattern of biological change on Earth.

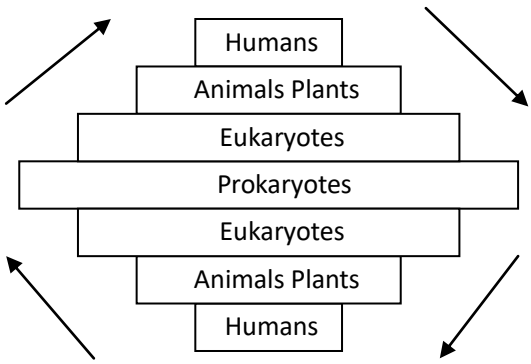
I believe that life is cosmic. Earthly life is just one of many forms of cosmic life. From the perspective of cosmic life, there should be a universal pattern of biological change.

Using a pyramid diagram to represent the pattern of cosmic biological change is incomplete. It only shows the pattern of Earthly biological change. The complete picture requires adding the mirrored other half (Figure 2-3).

What does this mean? Life completes the cycle from prokaryotes to humans and back to prokaryotes, but it does not end there. Life evolves again from prokaryotes to humans and back to prokaryotes, repeating this cycle endlessly.

Figure 2-3 is the complete diagram of biological change. It represents the universal law of cosmic biological change.

Figure 2-3

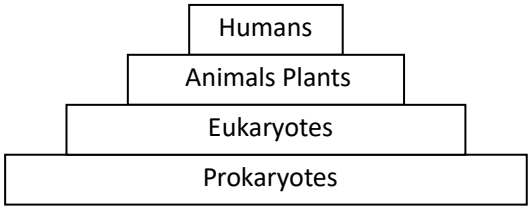


The Biological Tower Law (Figure 2-4)

Law of Biological Evolution: In a closed system, biological evolution must follow the order of the Biological Tower. Higher-level organisms evolve from lower-level organisms. Lower-level organisms are the foundation and material for the evolution of higher-level organisms. Skipping levels or missing lower levels is impossible.

Law of Biological Survival: Organisms living in a closed biosphere must follow the Biological Tower Law. Higher-level organisms cannot survive without lower-level organisms. Lower-level organisms are the foundation for the survival of higher-level organisms. The quality of lower-level life affects the quality of higher-level life. If a level is missing, higher-level organisms cannot survive.

Figure 2-4



Prokaryotes are the earliest organisms on Earth. They have survived for 3.8 billion years and possess extremely strong vitality. They can be found everywhere on Earth. They are the foundation for the survival and evolution of all life, and rightfully belong at the bottom of the biological ladder.

Above prokaryotes are eukaryotes (single-celled organisms). They are the basic units that build humans, plants, and animals. Above them are multicellular organisms (plants and animals). This category covers a wide range, from simple-celled plants and animals to large, high-level vertebrate mammals. It can be further subdivided into several levels. Humans stand at the top of the biological ladder. This is only natural. Biological evolution stops at intelligent beings like us. No super-intelligent beings will appear. Therefore, there will be no super-intelligent organisms above us.

Regarding the Law of Survival, prokaryotic bacteria and fungi can decompose plant and animal remains into water, carbon dioxide, and organic matter. These materials are then absorbed and utilized by green plants to produce organic compounds. Bacteria and fungi play a crucial role in material cycling within the biosphere. Without bacteria and fungi, the survival of higher-level organisms would be unsustainable.

The popular theories about conducting biological activities on other planets clearly violate this law.

For example, in extraterrestrial migration, when humans travel long distances over extended periods and find an ideal planet with water and oxygen but no life, can we immediately live there? No.

Because the planet has no bacteria, no cells, and no nutrient-rich soil. Plants cannot grow, and animals cannot be raised. The first thing we must do is cultivate bacteria and enrich the soil. Then we wait inside our spacecraft, parasitizing that star system. How long must we wait? This process took over 2 billion years on Earth. Then there is the second step: cultivating cells...

The idea of planting crops directly on Mars and colonizing it contains similar errors. The Biosphere 2 experiment failed, and the fundamental cause of failure could not be found. By comparing it with this law, we can identify where the problem lies (Allen & Nelson, 1999; Walford et al., 1992).

2. On Extraterrestrial Migration

Satellite launches, humans stepping onto the Moon, probes landing on Mars—every success in the space program and every technological advance has expanded people's thinking to new horizons. Extraterrestrial migration and colonization have been long-standing human dreams. Many believe this dream can be realized in the near future.

What is migration?

China is building the Three Gorges Dam on the Yangtze River. The dam blocks the river's flow, creating a reservoir upstream that submerges vast areas of land. People who have lived there for generations must relocate. More than a million people have become migrants.

The resettlement of migrants is a matter of great importance, and reports on this topic are common. Some move to nearby highlands, while others travel thousands of kilometers. People in the resettlement areas build houses, allocate land, purchase small production tools, and prepare everything needed for the migrants' arrival.

After arriving, migrants can live and work normally and interact with local residents. Unmarried migrants can choose local residents, fellow migrants, or people from elsewhere as spouses, marry, and have children. From then on, they settle down, thrive, and raise descendants generation after generation.

Migrants and their descendants appear completely ordinary compared to those around them. They have integrated into society. Physiologically, it is impossible to distinguish migrants and their descendants from local residents or people from other places.

If they miss their homeland, they can normally return home to visit, see relatives and friends, and trace their ancestry. They can also move back permanently to settle down and raise children.

Science and facts have proven that there are no distinctions between "savage" and "civilized" humans, between "inferior" and "superior" races, and certainly no subspecies. People on Earth can move from one place to another and can reproduce with mates of any ethnicity from anywhere. Their physiology and reproductive capacity remain unaffected and unchanged. This characteristic is so natural and ordinary that this indispensable human advantage is rarely mentioned. Most plants and animals are not like this. We thank the Creator for choosing and creating the ancestors of modern humans, "Adam" and "Eve." All modern humans who have ever appeared on Earth are descendants of "Adam" and "Eve." They share the same genes and have no reproductive isolation. They have lived harmoniously on our planet in the past and present.

For the moment, I will believe that near-future technology can solve the many problems of extraterrestrial migration, including transportation, environment, water,

and food, making it as economical and convenient as flying to another city today.

But can Earth humans migrate to other planets? How should they migrate? These questions still need discussion.

Mars

Since ancient times, a red planet in the sky has held an important place in human culture. It is the fourth planet of the solar system—Mars. Because of its fiery red color and humanity's desire to explore extraterrestrial life, Mars has always captured people's attention. Today it still tempts our thinking: probes have discovered traces of water on Mars, and in 1996 scientists found evidence of past life in Martian rocks (McKay et al., 1996). If we use Earth's natural environment as a standard to score the planets in the solar system, Mars would receive the highest score. Therefore, Mars is the first choice for human migration.

Mars is 228 million kilometers from the Sun. Like other planets in the solar system, Mars follows a fixed elliptical orbit around the Sun. One Martian year takes 687 Earth days, so a year on Mars equals two years on Earth. Like Earth, Mars rotates on its own axis. One rotation takes 24 hours, 37 minutes, and 22 seconds—roughly equal to an Earth day. The tilt of Mars's rotational axis relative to its orbit is about 23 degrees, so it also has four seasons in a year. Mars has a diameter of 6,794 kilometers, half that of Earth. Because Mars has relatively small mass, its gravity is also weaker than Earth's. A person's weight on Mars would be only 38% of their normal weight on Earth. Mars has two moons: Phobos and Deimos.

Mars's polar regions are very similar to Earth's Antarctic and Arctic circles. Mars has huge polar ice caps that expand in winter and shrink in summer. The ice at Mars's poles is basically solid carbon dioxide, with some frozen water. Experts believe that beneath Mars's polar caps there may be extensive permafrost, just as on Earth. Although water on Mars is currently frozen, this is an important detail for astrobiologists and for humans who might permanently settle there.

Mars's atmosphere often contains dust storms shaped like yellow clouds. Local dust storms occur frequently. Particularly large dust storms can envelop the entire planet and last for months. Dust storms are formed by strong winds in Mars's lower atmosphere that carry dust particles. Major dust storms make Mars dark and obscure, shrouded in haze, with nothing clearly visible.

Seventy-five percent of Mars's surface is covered by desert, composed of silicates, limonite, and other iron oxides.

The synodic period of Mars and Earth is 779.87 days. Mars approaches Earth roughly every 2 years and 2 months. When Earth and Mars are on the same side of the Sun and nearly aligned in a straight line, the distance between Mars and Earth is at its minimum. But this distance varies each time, ranging from 55.7 million to 120 million kilometers. Before this alignment is the best time for spacecraft to fly to Mars.

What happens when a spacecraft from Earth lands on Mars? First, these new

Martians must learn how to survive in a desolate, uninhabited place. The new Martians will stay on Mars for some time, and a permanent human base will be established there. It is said that Martian soil can produce oxygen when heated, and permafrost is a source of water. Human diligence and wisdom will transform the Martian environment: oxygen for humans and animals to breathe, abundant water, lush green plants, rising temperatures, and an atmosphere that filters out solar ultraviolet radiation—a paradise for human habitation. They will gradually develop into a settlement, then a city. One day, a newborn will be born there—the first true Martian.

Discussion of Mars colonization has focused on aerospace and biological application technologies. Aerospace technology is now mature, and other technical problems will not be obstacles to Mars colonization. It seems that with sufficient funding, people can solve all technical problems and set foot on Mars in the near future. But there is a very important factor that experts and scholars rarely address. Perhaps they believe it will not be a problem. That factor is we Earth humans ourselves—human physiological characteristics. This is the key to extraterrestrial migration.

One of Earth's inhabitants—modern humans—has lived and grown up on Earth for about 100,000 years, or 5,000 generations. From the earliest appearance of bacteria to the emergence of cells, plants, animals, vertebrates, and humans, organisms throughout this long evolutionary process never left Earth to survive in extraterrestrial environments. In Earth's environment, life evolved and adapted, then evolved and adapted again, constantly moving upward. This process took 4 billion years to produce our current biological environment and humanity. Life has become highly adapted to Earth's environment and its changes. We humans are specialized products of Earth's natural environment. We have become one with Earth's gravity and magnetic field. We have adapted to atmospheric pressure, oxygen levels, solar radiation, and other factors. The natural environment provides the foundation for our survival. The bone strength of humans and animals falls within a reasonable range, just enough to support body height, weight, and activity on Earth. The heartbeat is precisely calibrated to pump blood to every part of the human body.

Comparison of Natural Conditions Between Earth and Mars (Kieffer et al., 1992)

	Earth	Mars
Magnetic Field Strength	1	less than 1%
Color	Blue	Red
Orbital Period Around the Sun	365 days 5 hours 48 minutes 46 seconds	686.98 Earth days
Rotation Period	23 hours 56 minutes 4 seconds	24 hours 37 minutes 22 seconds
24 hours 37 minutes 22 seconds	23.5 degrees	25 degrees
Mean Equatorial Radius	6378 km	3332 km
Volume	1	1/7
Mass	1	1/9
Surface Gravity	1	2/5
Main Atmospheric Components	Nitrogen 78%, Oxygen 21%, Argon 0.93%, Carbon Dioxide 0.03%, plus Neon, Krypton, Helium, Xenon, etc.	Carbon Dioxide 95%, Oxygen less than 5%, plus Nitrogen, Argon, Water Vapor, Carbon Monoxide, Neon, Krypton, and Xenon. Water vapor averages only about 0.01% of the total atmospheric volume.
Solar Radiation Received	1	40%
Average Temperature	14℃	-63℃
Wind Speed	35m/s	180m/s
Atmospheric Density	1	1%
Moons	One	Two
Ocean Coverage of Total Surface Area	70%	0

Although Mars is the planet in the solar system with natural conditions closest to Earth's, Mars has its own unique natural environment. It is vastly different from Earth, and humans cannot change it. Mars's magnetic field is less than 1% of Earth's. The sky and ground are red. Global dust storms last for long periods. Surface gravity is 2/5 of Earth's. Harmful solar radiation strikes the surface directly (Carr, 1981).

First, changes in environmental factors such as gravity and magnetic field will affect human reproduction and constantly influence and determine the growth process and outcomes of newborns. Human reproduction on Earth is not adapted to the Martian environment. Egg fertilization, embryonic development, and birth occur under conditions of 62% reduced body weight and almost no magnetic field—conditions vastly different from Earth's. Genetic mutations are inevitable. Most fetuses will miscarry. Those that survive will be monstrosities or idiots.

Suppose that after tens of millions of failed pregnancies, a normal baby finally survives. What will it look like when grown?

An ordinary person on Earth who is 1.70 meters tall and weighs 70 kilograms—if raised on Mars from childhood—would, according to theoretical calculations, grow to 4.47 meters tall and weigh only 26.6 kilograms. The diameter of their bones would be less than half that of an Earth human. Clearly, this type of human could not survive on Mars.

Suppose again that Earth-born Martians, through long-term selection, or that Earth humans using biotechnology designed based on Martian conditions, produce Martians fully adapted to the Martian environment. Like Earth humans on Earth, they become one with nature on Mars.

Martians adapted to Mars would be intelligent and hardworking, thriving on Mars and establishing their own nations. Clearly, they would be a subspecies of Earth humans and would develop reproductive isolation from Earth humans.

After adapting to the Martian environment, they could no longer adapt to the Earth's environment. If they came to Earth, a load 2.6 times greater would be placed on them. Their bones could not withstand this sudden increase in weight and would not support walking or activity. Blood density would increase, and when standing, the heart would lack the power to pump blood to the head. Earth's atmospheric density is 100 times that of Mars. Even if a transformed Martian atmosphere became denser, the difference would still be more than tenfold. If they entered Earth's atmosphere without protection, their bodies would be crushed by the air pressure.

If Martians truly exist in the future, they will not be able to reach Earth's surface. Earth's environment would harm their bodies and even kill them.

Martians cannot go to Earth, yet Earth humans can go to Mars. This is extremely unfair to Martians. Therefore, the Martian nation would legislate to prohibit Earth humans from setting foot on their planet. From then on, people on the two planets would be isolated not only reproductively but also in communication.

Martians would envy the intelligence and wisdom of Earth humans. Earth humans would envy Mars's superior rocket launch conditions. One day, conflicts would arise over occupying territories and resources in the solar system. Combined with long-term isolation, suspicion, distrust, viewing each other as alien species, and fear of being exterminated by the other—once hatred arises, it would be millions of times deeper than racial or national hatred on Earth.

Interplanetary war would inevitably break out. How would it be fought? Launch

rockets to the asteroid belt and divert asteroids into orbits heading toward the other planet. The impact would exterminate the species on that planet. Current technology could already accomplish this.

Conclusion: Within the solar system, Earth humans cannot colonize other planets. We should not create a huge social problem for ourselves or manufacture a potential opponent—an opponent that Earth humans would eventually have to exterminate, or that would exterminate us. Earth humans are the only humans and the masters of the solar system. We were in the past, we are now, and we will be in the future. The principle of human species unity must not be violated.

In reality, human extraterrestrial colonization will never pass the reproductive barrier. Human activities on other planets will be limited to exploration, adventure, vacation travel, production, and experiments in life reproduction, biological genetics, and evolution. There will be no newborns born and raised on other planets for the purpose of colonization.

How to Colonize an Alien Planet

Among the trillions of planets in the universe, is there one with basically the same environment as Earth? There certainly is. But to migrate there, we must overcome two laws: the speed-of-light limit and the Biological Tower Law. At present, this appears impossible.

The Sun's energy will eventually burn out, and the planets in the solar system will be destroyed before that. Extraterrestrial colonization is impossible. Should humanity simply wait helplessly for death?

Of course not!

Humans became humans because we possess a method of propagating life. This method ensures that humanity will survive and endure forever in the universe.

Now, the baton of life has been passed to Earth humans in the solar system of the Milky Way galaxy in the universe. We must stop internal strife, unite as one, and for generations to come fulfill this great and sacred mission—the only thing humanity must do: spread life to the universe and sow the seeds of human wisdom.

This is humanity's future and destiny. Only by doing so can humanity have hope and develop. Let us gather all human wisdom and strength and strive toward this goal!

The dream of leaving Earth and entering the universe is deeply alluring. This is not surprising, because humans came from the universe and will eventually return to it. But our current ideas and theories about how to cross the vast universe to reach our destination are completely wrong and unworkable.

Consider the several plans experts have offered us:

1. Humans enter hibernation; they awaken when the spacecraft reaches its destination.

2. The spacecraft installs a cryogenic system that freezes humans; upon arrival,

they are thawed and their bodily functions restored.

3. Human fertilized eggs are cryogenically preserved for the long term; upon arrival, the eggs are developed, and babies are born and raised.

4. Build giant rotating-wheel spacecraft with an Earth-like environment and ecosystem inside. The centrifugal force from the wheel creates gravity equivalent to Earth's. The spacecraft form a fleet. People live and reproduce inside, permanently leaving Earth to become nomadic humans of the universe.

Based on hibernation in certain animals and cryogenic experiments, experts devised the first and second plans. But if we use humans for such experiments, we will face great resistance. Even if the experiments succeed, we cannot ensure that the human body will not consume energy over millions of years, or that the spacecraft systems will keep running. The third plan is even more unworkable. We have all heard the story of the feral child—a child raised by wolves after birth has only wolf nature, not human nature. I agree with the philosopher Karl Marx's view: human essence, in its reality, is the sum of social relations (Marx, 1845/1888). Society is what shapes the person. People born and raised inside a spacecraft would not know what kind of people they are or for whom they work. The fourth plan: the energy dissipated by the system exceeds the energy captured. Over an infinitely long voyage, the fleet would exhaust its energy (materials). Industrial and biological laws dictate that this plan also cannot work.

In a park near my home, there is a commercial garden that grows various plants. It sells potted plants and mails seeds. Buyers in the city and nearby areas select and pay for plants, then take the pots home. Within a few hours, they can start growing the plants at home. For mail-order customers hundreds or thousands of kilometers away, the garden only uses seed-mailing for transactions. I once wondered: what would happen if we used plant-shipping instead of seed-mailing for these distant customers?

Plants are not ordinary objects. They have special requirements. To keep plants alive before, during, and after transport, and after transplanting, the delivery method under the premise of ensuring survival is:

Packing → Transporting → Unpacking → Planting.

This process is limited by time and transportation method. Air and water cannot be lacking; temperature and humidity must be suitable. Even so, 100% survival cannot be guaranteed. After arrival, the plants must readapt to the local climate.

Using seed-mailing is much simpler:

Mailing → Planting.

Seeds are the stage in a plant's growth cycle when volume is smallest, biological stability is highest, resistance to environmental disturbance is strongest, and no maintenance is needed. It is the plant's dormant period. After mailing seeds, the sender need do nothing and worry about nothing. If mailing fails, simply mail again. There is almost no loss.

Comparing the two methods, we can identify the following advantages of mailing seeds over shipping plants:

1. Costs are reduced by multiples.

2. Volume and weight are reduced by multiples. One envelope can hold hundreds of seeds.

3. No maintenance is needed during transport. There is no time limit. No survival problems.

4. After planting, they can adapt to the environment, with high survival rates.

The advantages of mailing seeds over shipping plants are so enormous that people commonly use this method. I wonder: shouldn't human extraterrestrial colonization draw inspiration from this?

Currently, our theoretical thinking about extraterrestrial colonization remains stuck in the "shipping plants" stage. This is wrong. Human extraterrestrial colonization should begin in the "mailing seeds" manner. Only the human seed is not sperm or egg, but the most primitive biological seed—bacteria.

The Crowd on The Isolated Island

A group of modern people are shipwrecked on a deserted island. Among them are workers, farmers, professors, leaders, children, youths, the elderly, men, and women—in short, a microcosm of modern society. The island has abundant plants, herds of animals, and all kinds of mineral resources. When they arrived, they brought no items from modern society, and they are permanently isolated from the outside world.

How will the people survive, and how will society develop?

The Stone Age

These people have modern thinking, good education, and skills from various aspects of advanced society. They could have lived in high-rise buildings, eaten hamburgers, driven sports cars on highways, and sent emails over the Internet. But all of this is gone forever. They must face reality, survive on the deserted island, and reproduce.

First, they need food, clothing, and shelter. The island has stones, plants, animals, water, caves, and mineral deposits. People find stone blocks and wooden sticks for hunting and gathering wild fruits. After bringing back prey, they must skin and butcher it. Hard stones again come in handy, though they need to be worked. Stones are chipped into axes, pointed drills, and other shapes sized to fit the palm. Stone axes and drills become indispensable everyday tools for cutting animal flesh and skin, sharpening wooden sticks, and piercing hides to make clothing. Animal bones are also made into tools. They find caves to live in. Some people pile stones to build walls, use stone axes to cut trees, and construct simple shelters. In this way, they shelter from wind and rain and defend against wild beasts.

They shape clay into bowls, pots, and other forms, then fire them. The resulting vessels are strong enough to hold water. These become essential items for eating and boiling water.

Later, they or their descendants discover several edible plant species. They begin

planting and harvesting these plants annually, and start penning animals. Food sources are secured; they no longer go hungry frequently. Gradually, their time is no longer entirely spent obtaining food. With surplus time and energy, what do they use it for? They should search for mineral deposits.

The Bronze Age

People find coal, copper, and iron deposits. What tools can they use for mining? Stones and wooden sticks? No. Without mining tools, they can only pick up small exposed ore fragments. Therefore, output is low.

With coal, copper ore, and iron ore, smelting becomes possible. Because copper ore is easier to collect than iron ore, and copper smelting is easier and consumes less coal, given their level of productivity, they can mainly smelt copper and only small amounts of iron. Even though they know iron is more widely useful than copper.

Metal smelting technology is complex and requires tools, but they still produce their first batch of copper. Thus, bronze tools enter people's labor and daily life.

The Iron Age

During the Bronze Age, social productivity improved, making large-scale iron smelting possible. Compared with copper tools, iron tools have many advantages and wider uses. Society enters the Iron Age. Productivity improves greatly again. Population grows. Society advances. People's smelting and manufacturing techniques mature. Finally, one day, they build the first steam engine, the first train, the first internal combustion engine... Society enters the mechanical and electrical age.

The Electronic Age

Radio, semiconductors, highways, computers, and the Internet follow in succession. Society has developed again to the level of the highly civilized society from which the original group came. However, these are no longer the people who were shipwrecked, but their descendants.

The trajectory of human social development began with the Stone Age, then the Bronze Age, the Iron Age, and finally the modern Electronic Age—a journey of over 100,000 years. The shipwrecked people possess modern consciousness and various skills, yet their development must still pass through these stages. There can be no high starting point or leapfrogging. Only the time required will be shorter. Perhaps their Stone Age will last only a few years, but it cannot be skipped. Because human social development proceeds through exploration, with blind spots, detours, and even temporary regressions. Their social development, however, is a purposeful straight path.

The first residents of the island will certainly pass on knowledge of their original modern society to their descendants, generation after generation. The gap between modern society's standards and their real life is as vast as heaven and earth. Descendants will think their ancestors' stories are myths.

The above describes a group shipwrecked without bringing items from modern society. What if the condition changes: a group shipwrecked but bringing some items from modern society, such as cars, generators, computers, food, and so on?

Oil-powered and electric-powered facilities quickly become waste due to energy depletion or inability to repair them—even a broken screw, with no spare parts left. The rice they brought can be planted. Their tents can provide temporary shelter. But as the population grows and tents wear out, they must return to living in caves and stone-grass huts. They cannot hunt or work without stone and bone tools. Thus, they return to the Stone Age described above.

The first island residents from modern society will certainly be unwilling to live a primitive Stone Age existence. They know the Stone Age is followed by the Bronze Age, the Iron Age, and then the Electronic Age they came from. But what can they do?

The means of production determine the level of productivity. The level of productivity is the main factor in social development. Economic laws cannot be violated.

So, to maintain the same level of civilization as the outside world and develop upon it while living on an island, how much must one bring? My understanding is that one should carry most of the major industries of society.

The above discussion aims to show:

1. The development of science and technology and the progress of civilization are gradual, not leapfrogging. The significance of searching for extraterrestrial civilizations is limited.

2. If it were truly possible for humans to leave the solar system and migrate directly to other planets, the amount of material needed would be enormous—almost the entire industrial system of society.

Chapter 3 Mission

1. Intelligent Evolution

Early Biological Activities

In prehistoric times, dense forests covered the land, wild animals roamed freely, and rivers and lakes were abundant. By the waterside, a tribe lived and dwelled. At dawn, men picked up bows and spears to go hunting, while women stayed home working and caring for the children. In the evening, the hunters returned with their prey—some animals killed, some still alive.

They gathered plants and wood to build fires, killed the live animals, and butchered them together with the previously hunted ones. The meat was divided according to the number of families or people. Food was scarce; they often ate one meal and went hungry for the next. Therefore, every animal caught, whether dead or alive, had to be eaten completely. There were no leftovers.

Their diligence and prayers produced results. Food gradually became more plentiful, and no one went hungry. One day, after eating, they actually had a live animal left over. This had never happened before, and it continued for some time. As surplus wild animals grew more numerous, the problem of how to keep them from escaping, hurting people, or being eaten by beasts now confronted the tribe. After discussion, the tribal leader made a decision: build enclosures and pen the surplus wild animals inside.

To people today, this decision seems simple and obvious. But at that time, thatched enclosures were only built for humans. There had been no precedent for building enclosures specifically for wild animals. No other tribe had been seen doing this, and their ancestors had not passed down such knowledge. Therefore, this decision was advanced and innovative, full of wisdom.

They selected a site near water by their settlement, cleared the ground of debris, and went into the forest to cut branches, vines, and twigs for enclosure materials. After processing, the materials were cut to suitable lengths and thicknesses. They sharpened one end of the branches and stuck them into the ground, binding them with vines and twigs. After making a gate, the enclosure was complete.

They drove the wild animals into the pen and began to feed them. When food was abundant, they put uneaten animals into the pen. When food was scarce, the animals in the pen could relieve their hunger. The penned animals became the tribe's food storehouse, benefiting the tribe's survival and development. Thus, raising and breeding animals became part of tribal life, passed down from generation to generation.

How did they raise them?

The animal feed consisted of leftover scraps from human meals and wild fruits and

plants. To make raising easier, they first ate the more ferocious animals and kept the relatively tame ones. Suddenly one day, an animal was born with a variation in traits—for example, a wild boar with shorter teeth, or a goat with shorter legs. These mutations were favored by people because the animals were less wild. Fighting and injuries among animals and harm to humans decreased, and their ability to damage or jump over the enclosure was reduced. People no longer worried so much about being hurt by animals or about injuries among the animals themselves. They did not need to spend excessive energy repairing and heightening the enclosure.

Thus, people kept animals whose reduced ferocity, reduced damage to enclosures, and reduced jumping ability favored raising, while they ate or isolated mutations that were unfavorable for raising. And these favored mutant individuals had a greater probability of passing their traits to their offspring.

Generation after generation of selective breeding of certain wild animals gave us today's domestic fowl and livestock.

The raw material for selective breeding was mutation and individual trait variation. Under domestic conditions, mutations and individual trait variations did indeed occur. Why and under what circumstances mutations and individual trait variations appear was discussed by the naturalist Charles Darwin in his works as early as the 19th century. Modern biology has now clarified the causes. What people did was simply to consciously and purposefully select and breed according to their own preferences and interests.

The above describes the general process by which people raised certain wild animals into domestic fowl and livestock. From this, the following key points can be summarized.

1. Design

When people decided to build the enclosure and thought about how to construct it and raise the wild animals, design came into being. It included the design of tools and the design of implementation. The contents covered the enclosure's location, area, height, and form; the material, thickness, and length of the enclosure materials; which wild animals to raise, how many, and how to raise and breed them.

2. Tools

The enclosure people built.

3. Implementation

People carried out raising and breeding. In this example, it was purposeful and selective raising and breeding.

Design, tools, and implementation—each is human behavior. Human behavior cannot be separated from consciousness. Design requires the participation of thought. Tools are the crystallization of wisdom. Implementation is carried out under the brain's command.

The conclusion of this example is: Under the guidance of consciousness, through design, use of tools, and implementation, people can change biological varieties.

Exploration of the Origin of Life

In 1953, the young American scholar Stanley Miller designed the first simulation experiment. He first poured water into a flask, pumped out the air in the apparatus, and then pumped in a mixture of methane, hydrogen, and ammonia. Heating caused the water in the flask to boil. The resulting water vapor mixed with the gases, and then they were subjected to continuous electrical discharge, causing the gases to interact. The substances produced by the reaction finally dissolved in water through a condenser. This simulation experiment yielded 20 kinds of organic compounds, including 11 amino acids. Among these 11 amino acids, 4 are the kinds found in biological proteins (Miller, 1953).

The success of this experiment shocked the world and greatly encouraged people's enthusiasm for studying the origin of life. Later, laboratories in many countries used different gas mixtures and different energy sources to synthesize many kinds of amino acids.

Another class of small molecules essential to the origin of life are the monomers that make up nucleic acids, such as ribose, deoxyribose, purines, and pyrimidines. Research on these components also followed closely. In short, in laboratories people successively synthesized the various components that make up nucleic acids.

In this experiment, Miller first made a design—a design for a simulation experiment. The contents included selecting tools and raw materials, the combination of tools and how to use them, and the duration of the experiment. He used tools: flasks, glass tubes, tungsten electrodes, heating equipment, and so on. Miller himself implemented the experiment: pouring water into the flask, pumping out the air and pumping in the experimental gas mixture, discharging electricity, heating, and so on.

Miller's experiment involved design, used tools, and was implemented. Any one of these three elements contained components of wisdom and consciousness. The result of the experiment was: under conditions of heating and continuous electrical discharge, the mixture of methane, hydrogen, and ammonia yielded 20 kinds of organic compounds, including 11 amino acids. Among these 11 amino acids, 4 are the kinds found in biological proteins.

The correct conclusion of this experiment is: through the exercise of wisdom and experimental means, humans can and have already caused inorganic matter to produce organic compounds and amino acids. Among these amino acids, 4 are the kinds found in biological proteins.

This experiment is representative. Its significance lies in showing that in the exploration of the origin of life and biological evolution, human wisdom is indispensable.

I define biological evolutionary activities conducted under human consciousness as intelligent evolution.

In biological activities, human consciousness is mainly manifested in design, tools, and behavior. Design, tools, and implementation are called the three essential

elements of biological evolutionary activities. As long as one of these three elements or other forms of consciousness is involved, it should be considered conscious behavior.

In 1958, American scientist Sidney Fox mixed some amino acids and, under anhydrous conditions, heated them to 160°C–200°C. After several hours, he obtained proteins with certain properties of natural proteins (Fox & Harada, 1958).

RNA molecules are long-chain polymers composed of up to thousands of nucleotide units. Each nucleotide contains three parts: phosphate, ribose (a five-carbon sugar), and a base (four kinds in total: adenine, guanine, cytosine, and uracil). All four bases are planar ring-shaped composite molecules composed of carbon, nitrogen, hydrogen, and (except for adenine) oxygen atoms. Adenine and guanine belong to the purines, consisting of two fused rings. Cytosine and uracil belong to the pyrimidines, having simpler single-ring structures.

In RNA molecules, nucleotides are linked by bonds between the ribose of one unit and the phosphate of another. As a result, all RNA molecules possess the same backbone (though differing in length) composed of alternating phosphate and ribose molecules. Bases are attached to each ribose unit of this backbone.

In the laboratory, chemists have successfully synthesized each of the five organic components of RNA (Oró, 1960; Reid & Orgel, 1967; Robertson & Miller, 1995).

In addition, the Dane Peter Nielsen synthesized a molecule he called peptide nucleic acid (PNA) (Nielsen et al., 1991).

In 1960, the Catalan-American chemist Juan Oró discovered that adenine, one of the components of RNA, could be formed from ammonium cyanide in a single step (Oró, 1960).

In addition, people can synthesize another component of RNA—ribose—from formaldehyde (Reid & Orgel, 1967).

In 1962, Thoday and Gibson conducted a selective breeding experiment on experimental populations of the fruit fly Drosophila melanogaster. They selected and bred two extreme types—those with very many bristles and those with very few—while eliminating intermediate types. After 12 generations of selection, the population showed obvious divergence, yielding two strains with significant phenotypic and genetic differences (one with many bristles and one with few) (Thoday & Gibson, 1962).

This example directly proves that Intelligent Evolution can produce new species.

In 1982, the world's first transgenic animal was born. It was a white laboratory mouse (Palmiter et al., 1982).

In 1983, the world's first transgenic plant experiment succeeded. Both achievements were accomplished by Americans (Herrera-Estrella et al., 1983).

Artificial Chromosomes

In the 1990s, genes from American crops enabled corn to produce its own

insecticide because bacterial genes were implanted in the corn; tobacco leaves also gained enhanced frost resistance after receiving genes from Atlantic halibut. However, by 2001, University of Chicago biologist Daphne Preuss had invented a new technique that made plant genetic modification even more remarkable. Preuss did not introduce a single gene into the modified plant; instead, she injected an entire artificial chromosome into a group of mustard plants (Preuss, 2001).

A gene is a segment of DNA that "instructs" an organism to perform a certain function. For example, a human gene is like a single page in an "instruction encyclopedia." The entire "encyclopedia" is called the genome.

Current genetic modification technology inserts a single gene into a plant's natural chromosome. This gene-insertion process produces many errors. Most biologists believe this genetic modification technique has limitations. In practice, each plant species can only receive 2 to 3 genes. But Preuss broke through this limitation. She could implant 4 additional genes together with the chromosome they reside on—that is, insert an entire small piece of genome into a plant. Once this gene-insertion technique is further perfected, the number of transplanted genes will no longer be limited to 4, or 40, or even 400.

Cloned Sheep

In July 1997, the world's first cloned sheep produced through asexual reproduction was born at the Roslin Institute in Edinburgh, UK (Wilmut et al., 1997).

After the birth of the cloned sheep, countries around the world, unwilling to fall behind, conducted cloning experiments one after another.

In August 1997, the Oregon Primate Research Center in the United States used asexual reproduction to cultivate embryos and produced two macaques.

Australian researchers used embryos to cultivate 470 cattle clones. This was the first step toward large-scale breeding of identical livestock.

New Zealand scientists used cloning technology to produce two twin sheep with identical DNA.

Conclusion

Under the guidance of consciousness, people can cause biological variation and change organismal traits through practice. The more advanced the technology, the greater the degree to which biological traits can be changed. We now have the ability to alter and create species. In experimental research on the origin of life, people have also achieved certain results.

Compared with biological variation under natural conditions, the two differ in nature. That people have changed biological traits in practice does not mean that biological traits can be changed under natural conditions. The inference that if the original conditions of practice and natural conditions are the same, the results should

also be the same, lacks scientific basis for identical original conditions. The claim that if the original conditions of practice and natural conditions are similar, the results should be the same is unscientific and also lacks basis for similar original conditions.

Evidence that humans change biological traits through wisdom is the exclusive property of the creationist Intelligent Evolution theory. Proponents of natural selection, please step aside. The evidence you need should be sought in nature. Artificially altering organisms is a weapon that supports Intelligent Evolution and refutes evolutionism. If one wishes to use this evidence to prove the theory of natural evolution, the premise must be to acknowledge that intelligence is involved. Using this evidence to prove natural evolutionism is like drinking poison to quench thirst.

Intelligent Evolution is a theory established by inductively summarizing people's biological practices. It does not face a problem of needing verification; it stands on its own because the theory itself is objective fact. The core of the theory of natural evolution—natural selection—is a hypothesis that remains unverified to this day. Finally, establishing the theory of Intelligent Evolution is meant to show this view: there exists on Earth a biological evolutionary mechanism that can give birth to life and cause organisms to evolve in the direction of prokaryotes → eukaryotes → plants and animals → humans. This evolutionary mechanism is Intelligent Evolution.

The existence of the Intelligent Evolution mechanism on Earth does not directly mean that biological evolution during the period from about 3.8 billion years ago to the present was Intelligent Evolution. Then what other mechanism drives biological evolution? Throughout the history of biology, the main dispute in this field has been between creationism and evolutionism. Intelligent Evolution is certainly a form of creationism. Before 1859, creationism dominated biology. From 1859 to the present, evolutionism has held the dominant position. The dispute between the two continues today. Although we cannot directly state that evolution beginning 3.8 billion years ago was Intelligent Evolution, when we search for evolutionary mechanisms, it points us to a path—a clear and open path. And what of natural selection? It is neither verified nor promising.

2. Noah's Ark • Life Egg

Large coral reefs grow near the coast. Every year during a certain season is the coral spawning period. The coral releases hundreds of millions of eggs and sperm. After fertilization, the eggs drift with the seawater to all parts of the ocean. Once coral eggs leave the parent body, they have no further connection to it. They receive no parental care and are left to survive or perish on their own. The coral spawning season is also a time for fish of all sizes to feast. They swim toward the reefs and eat the vast majority of the eggs. Only those eggs that drift to places suitable for their growth have any hope of survival. Because the base number of coral eggs is so large, even though

the probability of survival is extremely small, some coral eggs always grow into new coral reefs after each spawning. Thus, coral reefs neither decrease nor increase explosively. When the new coral reefs mature, they join the ranks of egg producers.

The way humans spread life beyond Earth is similar to this: we will send Life Eggs into the universe. The Life Egg is an intelligent spacecraft for propagating life, built by humans. As science and technology in aerospace, artificial intelligence, and biology progress from primitive to advanced, the Life Eggs launched will also improve from lower to higher levels.

A simple Life Egg should have the following functional capabilities: excellent durability, long-term space navigation, landing capability, and the ability to carry and preserve bacteria for extended periods. It flies with a set direction and target. Current technology has already reached this level. The probes we have built have successfully landed on Mars multiple times. Pioneer 10 has left the solar system and is 12 billion kilometers from Earth, still operating normally. Long-term preservation of bacteria is not a difficult matter either. Today, our technology is fully capable of manufacturing a primary Life Egg. We only need to find a "hopeful planet" before we can launch it.

Advanced Life Egg

It drifts among the stars. When a viable target appears, it locks onto it and heads toward it. At this point, the Life Egg shuts down all systems and consumes no energy. It has "died" and entered "dormancy," becoming a meteorite in interstellar space. Only when an external force disturbs it does it "awaken," activating its intelligent detection and analysis systems. It will encounter the following situations and take action:

First, encountering a powerful gravitational pull, such as a black hole or giant star. If it continues forward, it will be sucked in. Or it may collide with a small celestial body. In such cases, it will change direction to avoid being pulled in or colliding.

Second, reaching the destination—the locked target.

1. If the destination is a star system in which no planet has conditions suitable for life, the Life Egg turns around and leaves, searching for and locking onto the next target and heading toward it.

2. If the star system has a planet with conditions suitable for life, or if a planet already hosts organisms at one of Levels Two, Three, or Four, and the planet has conditions for organisms to advance to the next higher level, the Life Egg will stay and carry out activities to originate life and evolve organisms on that planet.

3. If the target is a cloud of dust in the process of star-system formation, like the condition of our solar system before it formed; or if the star system has already formed and a planet is changing toward conditions suitable for life, or shows such a trend. The Life Egg will wait there.

Third, the Life Egg never finds a place to reproduce life and drifts forever. Or the Life Egg fails or is destroyed by external forces. This category accounts for the majority of Life Eggs.

When technology advances in the future, we will be able to manufacture such Life Eggs, because they do not transcend biological and physical laws.

Let us now discuss the problems that "extraterrestrial migration" cannot solve.

Energy

While drifting among the stars and before reaching its destination, the Life Egg is simply a meteorite. It consumes no energy. It only consumes energy after reaching its destination. Therefore, energy consumption is minimal. The Life Egg has energy-collection facilities that can meet its modest energy needs, supporting its long-term wandering in the universe.

Some scientists believe that life on Earth was brought by comets. This is entirely possible. Why shouldn't the Life Egg hitch a "free ride" on a comet?

Time

Time and speed are the least of the problems. The universe lasts as long as she lasts. When the Life Egg is dormant, the concept of "time" does not exist for it. When encountering the second or third situations mentioned above, time is still a surplus commodity.

I believe that the speed at which we currently launch outward-bound probes is already sufficient. The Milky Way has a diameter of 100,000 light-years. Reaching the farthest point would take only a few hundred million years.

Durability

There are no living creatures inside the Life Egg. Even though it carries bacteria, cells, and other lower-level organisms, they can be preserved for hundreds of millions of years and survive upon reaching the destination. There is no corrosion in space. The Life Egg is inactive most of the time, and it has self-repair functions. All these ensure the longevity of the Life Egg. If a Life Egg fails and cannot be repaired, let it fail.

The Life Egg's facilities are highly intelligent. It has propulsion, energy collection, various information-gathering, high-intelligence analysis and processing, bioengineering, and other systems. It contains an "intelligent non-biological human," namely, the "Emissary." Bioengineering includes the knowledge and facilities to utilize a planet's materials and environmental conditions to carry out the work of originating life and evolving organisms from lower to higher levels, up to intelligent humans.

One very important thing must be carried: all organisms that currently exist or have existed on Earth that can be obtained—not as living specimens or fossils, but as their genetic codes and corresponding data on biological properties, external forms, and so on. In extraterrestrial creation, this information is indispensable and can be directly used and referenced.

There are two ways to originate and evolve life on other planets: directed and undirected. The directed method refers mainly to operations conducted by people on Earth, such as searching for target planets and remotely controlling the evolution of

organisms. The undirected method means that after the Life Egg is launched, it mainly acts on its own; Earth humans do not control it. This is an advanced "Life Egg."

3. Mission

The rocket launch is not an ordinary launch. It is humanity's first, and it holds great significance. The vehicle carries and preserves bacteria for the long term as it leaves the solar system. It will eventually reach a certain planet and enable the bacteria to survive and reproduce there.*

The successful rocket launch signifies that we solemnly and majestically declare to all humanity and the entire universe: Earth humans have fulfilled their mission! The arduous, complex, and extraordinarily long journey from bacteria to humans has finally yielded its reward. The baton of life continues to be passed through our hands. Moreover, as a milestone, the Emissary's mission of creating Earth humans is also completed.

Afterward, volcanic eruptions, floods, earthquakes, landslides, Earth's destruction, and human extinction—we can face them all calmly.

Of course, we will not be satisfied with the most primitive level of extraterrestrial biological transplantation. When the Life Egg reaches the target planet, it will send data back to Earth. People will then conduct experiments and analysis before directing the Life Egg's actions. The same applies to evolved organisms. We will not only direct the Life Egg but also send batches of Life Eggs carrying the most advanced technology toward the target planet.

As science and technology develop, the level of Intelligent Evolution experiments within the solar system will rise step by step—that is, using matter to synthesize life, and evolving organisms from lower to higher levels until they can evolve into humans. The level of the Life Eggs we send out will also rise again and again, up to the highest level—evolution into humans.

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*The British philosopher and science-fiction writer Olaf Stapledon first published the early science-fiction novel Last and First Men in 1930. It details how the last humans, upon discovering that the solar system was about to be destroyed, sent microscopic "seeds of new humans" to potentially habitable regions of the universe (Stapledon, 1930).

The time required for Earth humans to directly participate in remote-controlled extraterrestrial life origination until humans appear is about 4 billion years. Do Earth humans still have that much time? This is not a problem, because artificial intelligence has a longer lifespan than humans, and what Earth humans leave unfinished can be continued by humans on other planets. Conversely, what humans on other planets leave unfinished can also be continued by Earth humans. For example, if we find a planet that has evolved to the reptile stage, we can evolve mammals upon that foundation.

4. Searching for Hopeful Planets

The galactic disk of the Milky Way has a diameter of about 130,000 light-years. The Sun is 27,000 light-years from the galactic center. The Milky Way harbors hundreds of billions of stars, and the Sun is one of them. The solar system has nine planets orbiting the Sun. We live on the third planet, Earth. Apart from Earth, life has not yet been discovered on any other planet.

Science and technology will become increasingly advanced as time goes on. For Earth humans to fulfill their mission and carry out life-reproduction activities on other planets, expansion must proceed from inside to outside, from near to far. First, transform the environments of other planets within the solar system. Turn Mars, Venus, and others into our evolution experiment bases and back gardens. But we must follow the Biological Tower Law, avoid thoughts of quick success, and have patience. What we do now will only bear fruit for our descendants tens of thousands or millions of years later. They will continue to build upon this foundation.

Returning to the hot topic of Mars: Mars has no liquid water. Its poles are covered with large areas of thick ice. The air is thin, and carbon dioxide content is high. To transform Mars, we must fully understand its basic conditions, identify what can be utilized, and formulate plans.

Plan One

Mars has no liquid water but has ice. This is something we can use. We can first cultivate a kind of bacteria on Earth and then release it on Mars. The bacteria can survive in ice, carry out photosynthesis, absorb carbon dioxide and release oxygen, and convert light energy into heat released within the ice, gradually raising the ice temperature until it melts. Once Mars has water, the rest becomes easy.

Plan Two

According to surveys, there may be liquid water beneath Mars's surface. We should bring this groundwater out and recreate oceans and lakes on the Martian surface. The method is: launch rockets to the asteroid belt, alter the trajectories of asteroids, and direct them to collide with Mars. This would smash out the Martian groundwater and simultaneously increase the density of the Martian atmosphere.

Contrary to popular opinion today, I am not optimistic about Mars but optimistic about Venus. Although people consider Venus's climate "harsh," Venus has far more usable material than Mars, and its environment may be similar to Earth's environment at the time of its formation.

Venus's atmospheric density is 90 times that of Earth, composed mainly of CO_2. Temperatures reach 420°C–480°C.

Transforming Venus's environment should proceed according to the following steps:

Step one: send probes to Venus to determine the composition and content of the Venusian atmosphere, the presence or absence of water, and other environmental data.

Step two: simulate and build a Venusian environment on Earth, and cultivate and select bacteria within it. The bacteria's functions would be similar to early Earth's cyanobacteria: anaerobic, capable of photosynthesis, absorbing carbon dioxide and releasing oxygen.

Step three: send the bacteria to Venus.

Step four: wait patiently.

After a number of years, Venus's environment will show preliminary improvement. Oxygen levels will rise; carbon dioxide levels and temperature will drop. Autotrophic and heterotrophic bacteria will be in the soil, forming a preliminary biosphere and enriching the soil.

Step five: cultivate or design cells and multicellular organisms. Venus will already have the conditions and environment for their survival.

Step six, step seven... The process of biological evolution on Earth will be replayed on Venus until humans evolve. Of course, the creation of humans would be extremely limited and carried out under closed control.

With current technology, launching probes to land on alien worlds has already succeeded, and cultivating bacteria is quite ordinary. Biological reproduction activities on Venus could easily reach the fourth step, and it would be both economical and free of technical difficulties.

Biologically transforming the environments of Mars and Venus is a path Earth humans must take, the first step to be taken. Only when we use biotechnology to transform Mars and Venus will we suddenly realize: Oh! So this is how humans came to be.

Extraterrestrial life origination and evolution activities outside the solar system will not be of an experimental nature but will have true meaning and purpose. In terms of distance, it should be from near to far. First, search for nearby stars that meet the conditions and whose star systems have space for biological survival and development.

The primary condition for life's survival and evolution is the presence of a good star and planets within its star system. Since Earth humans are the only intelligent life we currently know, the mystery of the origin of life and the way evolution proceeds has been solved. Moreover, we will certainly use this same method to spread life and evolve intelligent life on other worlds. The so-called standards for good stars and

planets can only be based on the celestial bodies in our solar system. Because the solar system has given birth to Earth humans, we can be certain that as long as there is a planetary environment similar to the early solar system, when Noah's Ark • Life Egg arrives, it can give birth to life and evolve intelligent life. Moreover, the process of biological evolution will be basically the same as on Earth. The bodily functions, external forms, and organs of intelligent life will be roughly the same as ours, and their intelligence will be comparable to ours. But if the environment of an extraterrestrial planet is not quite like the solar system, we cannot guarantee that intelligent life will emerge there.

Stars within 12 light-years of the solar system are relatively close to us. Observing them through astronomical telescopes is relatively clear, and data such as distance and luminosity can be measured accurately. The time for our spacecraft to reach these stars is not long. Especially when remote control is needed, a round trip would take no more than 24 years. The number of stars within 12 light-years is 28.

The Sun, Alpha Centauri A, B, C, Barnard's Star, Wolf 359, Lalande 21185, Sirius A, B, Luyten 726-8 A, B, Ross 154, Ross 248, Epsilon Eridani, Ross 128, Luyten 789-6 A, B, Epsilon Indi, Struve 2398 A, B, Tau Ceti, Procyon A, B, 61 Cygni A, B, Lacaille 9352, Groombridge 34 A, B, Giclas 51-15 (Croswell, 1995).

Among these 28 nearby stars, a few may have structures similar to the solar system, but the conditions of the other nearby stars are far inferior. To distinguish between star systems that can support life reproduction and those that cannot, astronomers have formulated thirteen criteria to test them. These criteria were established by comparing them with our own intelligent civilization. These criteria apply not only to these 28 nearby stars but to the entire universe as well. The criteria themselves will become increasingly refined and accurate as human understanding of the universe deepens. Establishing criteria has practical significance. Directed bacterial reproduction on extrasolar planets can be done now. Future Noah's Ark • Life Eggs drifting among the stars will also need to find good planetary breeding grounds. Formulating criteria can screen out suitable star systems.

The first criterion a star must meet is that it has not left the main sequence to become a red giant or similar. This is because it must provide long-term, stable light and heat for the formation and evolution of life.

The second criterion is more demanding. To support intelligent life, a main-sequence star must have a suitable spectral type, because this determines how long the star stays on the main sequence and how much light it produces during that stage.

To give birth to intelligent life, a main-sequence star must have a sufficiently long lifespan to allow life time to evolve into an intelligent form. On Earth, the evolution of intelligent life took 4.6 billion years.

Because we will repeat this process on other worlds according to the program and method by which life originated and intelligent life evolved on Earth, this time span is representative. On other Earth-like planets, the emergence of intelligent life should

also take about 4.6 billion years. But this is still not enough. If intelligent life becomes extinct immediately after its birth because of the star's main-sequence lifespan, this is absolutely unacceptable. Creating humans in this way would be meaningless and not the purpose of human creation. After intelligent life is born, there should still be time and space for survival and development. On Earth, this span is 5 billion years. Extraterrestrial civilizations should also have such a long span of time and space. Adding the two together gives about 10 billion years. Thus, the conclusion is: a star's stay on the main sequence should be no less than 10 billion years.

The third criterion is stellar stability. If a star erupts, it can harm or even extinguish life on its planets.

The fourth criterion is age. Life appeared on Earth 700 million years after the solar system formed, and intelligent life appeared 4.5 billion years later. Therefore, the older the star, the smaller the space for life to evolve into intelligent life and for intelligent life to survive and develop. Only those star systems that have just formed or formed recently are the ones we should seek.

The fifth criterion is metallicity. If a star is metal-poor, it may hinder the formation of planets and life.

The sixth criterion is the distance between the main-sequence star and its nearest stellar neighbor.

The distance between two stars affects the orbital trajectories of their planets. For example, if two stars are close together, they can capture each other's planets, which is fatal to the formation of intelligent life. But if the two components of a binary star are very close together, planets can orbit both stars, and the orbit is relatively stable. It's just that inhabitants on the planet would see two "suns." Conversely, if two stars are sufficiently far apart, they will have their own planetary systems, and the planets will not disturb each other, ensuring the survival of life.

To ensure planetary orbital stability, astronomers give only an approximate range for the separation between two stars: less than 0.1 AU or greater than several hundred AU.

Epsilon Eridani is a single star and passes this criterion.

Therefore, only one nearby star roughly meets these six criteria. The candidate is Epsilon Eridani.

Stars that pass the above six criteria are already extremely few, but this does not mean we have found a place to spread and evolve intelligent life. It is only part of the conditions. Next come the criteria for the star system.

Planets do not emit their own light and are difficult to find. The method astronomers commonly use is to look for stars that wobble in a regular pattern. Astronomers believe that a star's wobble is caused by planets orbiting it.

The seventh criterion is that there must be planets. This is not a problem. Most stars should have planets, because planet formation is a natural result of the star-birth process. Epsilon Eridani is no exception.

The eighth criterion is that a planet must lie within the habitable zone.

To ensure that a planet has liquid water and moderate temperatures, the planet must be located within the habitable zone.

The average distance between Earth and the Sun is about 150 million kilometers. Astronomers define this as 1.0 AU. The AU (astronomical unit) is a unit astronomers use to measure distances within the solar system. Mercury's distance from the Sun is 0.4 AU, Venus 0.7 AU, Mars 1.5 AU. The spacing between all rocky planets is about 0.4 AU. If the habitable zone is 0.4 AU wide, then there must be a planet falling within it.

But scientists do not yet know exactly how wide the solar system's habitable zone is. Years ago, one estimate ranged from 0.95 AU to 1.01 AU, only 0.06 AU wide. This value is very small, indicating a strict standard. But recent research indicates that the solar system's habitable zone is relatively wide, from 0.95 AU to 1.5 AU, a width of 0.55 AU. If this is true, it indicates a loose standard. Sun-like star systems would have at least one planet falling within the habitable zone.

The ninth criterion is that there must be giant planets orbiting outside the habitable zone.

Scientists have pointed out through research that the solar system once had large numbers of comets traveling between the planets. But the gravity of the two massive planets Jupiter and Saturn either drove the comets out of the solar system or absorbed them itself, leaving only a very few comets that now encounter Earth. Experts used computers to simulate a solar system without giant planets like Jupiter and Saturn in outer orbits. They found that many comets would remain, and their frequency of collision with Earth would be 1,000 times higher—a large comet would strike Earth every 100,000 years. The last major impact occurred 65 million years ago, causing the extinction of most organisms and the dinosaurs. If humans were to encounter such a catastrophe, their fate would be no better than the dinosaurs.

The computer-simulated scenario was confirmed in the real solar system. On July 16, 1994, a comet impact event on Jupiter occurred. Under Jupiter's immense gravity, the comet split into several pieces that crashed violently into Jupiter. The first piece, with a nucleus about 1 kilometer in diameter, immediately left an impact scar the size of Earth. The total energy released by the impact was equivalent to the explosion of 40 trillion tons of TNT, with instantaneous temperatures approaching 30,000°C (Shoemaker et al., 1993; Weaver et al., 1994).

In any case, major impacts every 100,000 years would prevent the birth of intelligent life. The existence of massive planets in outer orbits is a partial condition for the birth of intelligent life.

Passing these three criteria is still not enough. Next come the criteria for the planet itself within the habitable zone.

The tenth criterion is moderate metallicity.

A star meeting the metallicity criterion does not mean its planet automatically meets metallicity requirements. In the solar system, which serves as the standard, there is also hard Mercury and gas-surfaced Saturn and Jupiter, where life cannot survive. Earth is a rocky planet.

The eleventh criterion is that the planet must rotate, and at a moderate speed.

For life to survive, there must be day and night, activity and rest, and even distribution of heat and cold. It is best to have an axial tilt that can create warm and

cold climates.

The twelfth criterion is that the planet must be of moderate size.

Too small, and it cannot hold onto an atmosphere, like Mars. Too large, and gravity is too great, making it difficult for intelligent life to survive and develop. The specific range of planetary diameter is still unclear. The broad range should be no smaller than Mars and no larger than Saturn.

The thirteenth criterion is that the planet must have land, water, and an atmosphere.

These are indispensable elements for intelligent life. The amount of water coverage and the composition of the planet's early atmosphere are also very important. If there is no water or atmosphere on the surface, having them inside the planet is also acceptable. We can "move" meteorites and asteroids from outside the orbit to crash into the planet, smashing out the water from inside the planet and simultaneously creating an atmosphere.

In mid-January 1996, news came from the United States that astronomers had discovered two new planets outside the solar system—planets orbiting the stars 47 Ursae Majoris and 70 Virginis. These two planets are huge in volume. At least one of them is relatively warm and may have liquid water, possessing the necessary conditions for life to dwell (Marcy & Butler, 1996).

A planet that meets the above three rounds totaling 13 criteria is the ideal place for intelligent life to survive. It is our target.

At every moment in the Milky Way, stars exhaust their energy and die while new stars are born. Humans survive by utilizing the main-sequence stage of stars, jumping from one main-sequence star to another in an endless cycle. Humanity lives forever.

In addition to early main-sequence stars, we should also focus on stars that have just formed or are in the process of forming. In the Orion Nebula there is a group of blue, high-luminosity stars. Blue high luminosity indicates that they are still very young, less than 1 million years old. In the Sagittarius constellation, many young stars are hidden behind a thick cloud of dust. There are also stars in the process of forming. We should send spacecraft there right now. The spacecraft would carry prokaryotes. By the time they reach their destination, planets will have formed and the star will have entered the main sequence.

Among hundreds of billions of star systems, only a very few may meet these 13 criteria. The number of Noah's Ark • Life Eggs launched is limited, and coupled with losses along the way, finding one or two within a 5-billion-year period in a galaxy (such as the Andromeda Galaxy) should be enough to satisfy humanity.

Planets that meet these 13 criteria can be used to reproduce intelligent life. When they do not meet all 13 criteria, we can reproduce lower-level life.

The origination and evolution of life on other planets proceeds by level.

Level Four, Prokaryote Level:

Bacteria have extremely strong survival capabilities. The conditions required of the planet are relatively few; liquid water is sufficient.

Level Three, Eukaryote Level:

Cells and lower-level multicellular organisms. The planetary conditions are liquid water plus a certain amount of free oxygen.

Level Two, Plant and Animal Level:

The range of plants and animals is very broad, from simple multicellular organisms to higher-level mammalian vertebrates such as gorillas, and can be further subdivided. For higher mammals, the star system needs to meet twelve of the thirteen criteria; the ninth is not necessary.

Level One, Human Level:

All thirteen criteria must be met. From Level Two we can see the importance of the ninth criterion. Without it, a planet can have whales, elephants, and chimpanzees, but not humans.

The birth of intelligent life on other planets is extraordinarily significant, but what is the meaning of evolving organisms below the intelligent life level? It is meaningful. The significance lies in: ① enriching life in the universe; ② serving as a biological reserve for the universe; ③ since life evolves from lower to higher levels, when environments change, they provide the foundation for further evolution to the next level; ④ even if Earth humans can leave the solar system and migrate to other planets, they will need a planet with a biosphere to sustain them.

Are we the only ones in the universe? To solve this mystery, humanity has always been exploring.

The first research project in human history to search for extraterrestrial intelligent life using scientific methods was "Project Ozma," first proposed by the American scholar Dr. Frank Drake. In 1960, he used a radio astronomical telescope at an observatory to search for signals from extraterrestrial intelligent life (Drake, 1960; Cocconi & Morrison, 1959).

Afterward, scientists from the United States, France, the former Soviet Union, and other countries tried every possible means to capture information from extraterrestrial civilizations. But to date, all these efforts have yielded nothing. The universe seems too silent! Faced with this harsh reality, scientists have rationally recognized that the reason humanity has failed to uncover the truth behind the silent universe is likely that our methods of searching for intelligent companions are still insufficiently advanced. Therefore, NASA proposed a more advanced and comprehensive "Microwave Observing Project."

The Microwave Observing Project consists of two parts: "All-Sky Survey" and "Targeted Search." (Starting October 1992) The so-called "All-Sky Survey" refers to gradually changing the scanning angle of the antenna by extremely minute increments, so as to search the entire sky without omission. Compared with any previous extraterrestrial civilization search project, the Microwave Observing Project has the highest precision and sensitivity. Scientists optimistically stated that in this project, even a drop in the ocean could be found. The so-called "Targeted Search" refers to conducting high-density observation of specific celestial objects. The targets are about 800 stars within 80 light-years of the Sun, plus several star clusters and galaxies,

totaling over 1,000 targets. Astronomers used the world's largest radio astronomical telescope, the 305-meter dish at Arecibo, Puerto Rico. These radio telescopes have extremely high sensitivity. Even if an extraterrestrial civilization did not send contact signals directly to Earth, they could still detect the existence of these radio signals (Tarter, 1992).

Since the implementation of the Microwave Observing Project, the observational data obtained have far exceeded the total data collected in the 32 years since Project Ozma was proposed. However, after detailed analysis of these data one by one, scientists still have not discovered any signals sent by extraterrestrial intelligent life.

Scientists' energy has been consumed, large amounts of financial resources spent, and time wasted—yet we have gained nothing. Now is the time for reflection. Reflection must start from the root. Tracing the root cause, we find that it is still evolutionism at work. Evolutionism holds that intelligent life on Earth is the result of natural evolution. Thus, people extrapolate from this and believe that intelligent life on other planets should also arise from natural evolution. This has led to the behavior of searching for extraterrestrial intelligent life. According to this theory, humans can only sit on Earth, hoping that some other planet will independently evolve intelligent life just as Earth did, and that we can contact them. Before humans die of old age, we might detect signals from one or two alien civilizations, but what meaning does that have? Evolutionism has harmed humanity!

Evolutionism has been a grand fallacy from the beginning to the present. Life is created, not evolved through self-evolution. Searching for extraterrestrial intelligent life from Earth is of little significance. Humanity must go out. Earth humans' Noah's Ark • Life Eggs must give birth to life, evolve organisms, and ultimately design intelligent life on planets that meet the standards. The work of searching for extraterrestrial intelligent life only needs slight modification—change it to searching for places where extraterrestrial life can originate and evolve. This is what truly matters.

Chapter 4 Toward the Future

1. Biology and Technology

Future Biotechnology

People have deciphered the genetic codes of all organisms on Earth, including those of extinct species that can be obtained. They understand their meanings and corresponding biological properties. In application, people can cut, splice, and control DNA to obtain desired biological traits and organs, and design new species.

Most importantly, there is technology to preserve bacteria for long periods (hundreds of millions of years). From relevant reports, this technology is not difficult:

1. A research team led by Gerda Horneck of the German Aerospace Center conducted an experiment placing bacteria in satellite orbit to observe whether they could survive the harsh space environment. During the experiment, they exposed about 50 million unprotected Bacillus subtilis spores to the exterior of an artificial satellite. After the satellite was launched, the lid of the container holding the spores was opened, allowing the spores to be exposed to space for 10 to 15 days.

Scientists mixed the spores with clay, red sandstone, Martian meteorite material, or simulated Martian soil particles, forming 1-centimeter-diameter pellets to simulate mineral shields for the spores.

In most samples, 10,000 to 100,000 spores survived out of 50 million. The sample with the highest survival rate was the one mixed with red sandstone; almost all 50 million spores returned to Earth undamaged (Horneck, 1993; Horneck et al., 1995).

The experimental results confirmed that bacteria, with slight protection (wrapped in a small piece of rock), can survive in the harsh space environment.

2. Bacteria can survive in extremely hot, extremely acidic, and toxic environments. In such environments on Earth, they can be found.

3. Long-term survival. According to Russell Vreeland and his colleagues at West Chester University, they isolated 250-million-year-old bacteria from salt crystals more than 1,500 feet underground. These salt crystals were found in the Salado Formation in Carlsbad, New Mexico, USA. They were halophilic bacteria that existed long before dinosaurs roamed the Earth. During the formation of the salt crystals, bacterial spores in water droplets were sealed inside cavities in the salt crystals. Ancient spores taken from these cavities grew into rod-shaped bacteria. This means that if these bacterial spores survived for such a long time, they may never have died. Although this discovery is disputed, I believe it is possible (Vreeland et al., 2000).

Bacteria are the foundation of all life. The breadth and longevity of bacterial adaptation to the environment often exceed our imagination. This is why the earliest organisms on Earth were bacteria. No organisms earlier or smaller than bacteria ever existed.

From the above data, scientists need only conduct a few more experiments, and the technology for long-term preservation of bacteria can be easily achieved.

The ultimate goal for scientists is to artificially synthesize bacteria. Currently, they are using chemical methods for this experiment, but with little success. I believe it is still too early to do this. The methods being used are like trying to reach the Moon by bicycle—unworkable. This requires our electronics and information technology, hardware and software, to reach an advanced stage: biomolecules, enzymes, DNA, and so on would all be artificial electronic versions. Manufacture two artificial electronic DNA coding chains, with electronic bases A, T, C, G. These two electronic DNA chains combine to become an artificial "bacterium" that executes programs written by people. After the two electronic DNA chains divide, they would each seek out natural A, T, C, G pairings. This would produce two "bacteria" that are 50% electronic DNA and 50% natural DNA—semi-artificial, semi-natural. When they divide and pair again, the electronic DNA component drops to 25%. Through continuous division and pairing, the electronic DNA component can be reduced to zero. In this way, artificially synthesized natural bacteria are born.

Artificially creating life by synthesizing bacteria is the most difficult task; it must be done from nothing. But even if this experiment never succeeds, it does not matter. Relatively speaking, the technology for long-term preservation of bacteria and even cells is simpler.

Evolving bacteria into cells is also something scientists need to do; its difficulty is second only to synthesizing bacteria.

Once cells are available, the rest becomes easy. Scientists need only cut, copy, and regulate DNA to obtain various plants and animals.

Cells → multicellular organisms → soft-bodied organisms → tubular organisms → vertebrates → amphibians → reptiles → mammals → humans.

Every step and every period of biological evolution on Earth needs to be reproduced by scientists through experiments one by one. They must also evolve apes step by step until they finally become "intelligent humans."

In terms of artificial intelligence: computers will be so advanced that they can accurately simulate intracellular molecular activities. Biological evolution experiments may not need to be actually performed; the emergence of new species and biological evolution can be completed through computer simulation. Relatively intelligent robots can be built to complete complex tasks assigned by people. Spacecraft will be highly intelligent, capable of collecting information during interstellar flight, analyzing it, judging it, and making decisions on their own.

Biological Perspective

On February 24, 1997, the British newspaper *The Times* revealed "sensational" news: the world's first cloned sheep produced through asexual reproduction had been born seven months earlier at the Roslin Institute in Edinburgh, UK. This news

shocked the world (Wilmut et al., 1997).

What shocked people was not the achievement of the cloned sheep, but the sudden need to confront the issue of "human cloning."

Theoretically speaking, if sheep can be cloned, human cloning is also feasible. The technology used to clone the sheep "Dolly" can be completely applied to clone humans. An American modern technology company has already cultivated human stem cells, taking the first step toward human cloning.

Human cloning is no longer a technical problem; it is a social problem. After the news of the cloned sheep's success was revealed, countries around the world launched fierce discussions on animal genetic reproduction. The topic of discussion was not the animals themselves, but the always-sensitive issue of "human cloning."

The results of the discussion can naturally be imagined. The U.S. government prohibited the use of federal funds for human cloning experiments and requested that scientists not holding public office voluntarily suspend their actions while the government reviews this issue. The United States also seeks to ban human cloning globally.

The Italian government temporarily banned any form of experiments related to human or animal cloning; human cloning is regarded as illegal.

In 1994, France enacted the Bioethics Law, which prohibits embryo experiments or the use of embryos for experimental purposes. The French government believes that the Bioethics Law can also be applied to the issue of cloning experiments.

Germany announced a comprehensive ban on human cloning within Germany and strives for a comprehensive international ban on the application of cloning technology to humans.

The Chinese government has clearly stated that China firmly opposes the use of cloning technology for human cloning experiments.

The World Health Organization issued a statement: the WHO prohibits the use of "cloning selection" for human asexual reproduction experiments. Any practice using cloning technology to create identical humans is unacceptable. The WHO believes that applying "cloning selection" to humans would violate human ethics and morality, damage human dignity, and have serious effects on human genetic inheritance; therefore, it is unacceptable. Although everyone has the right to enjoy the fruits of scientific research, the international community should prohibit the practical application of such "extreme experiments" as replicating "cloned humans," crossbreeding different animal species, "creating" bizarre biological types, and altering human germline genes.

Governments around the world firmly prohibit human cloning; what about the attitude of ordinary people? Some magazines conducted polls; those opposed to human cloning accounted for over 80%.

It appears that the vast majority of people hold a negative attitude toward human cloning and a cautious attitude toward transgenic plants. There are profound reasons for this situation.

The British naturalist Charles Darwin published his theory of natural evolution, *On the Origin of Species*, in 1859. Over the following 140 years, his followers continuously supplemented and refined it. Today it is considered a "very scientific" theory that dominates biology. People are deeply influenced by the theory of natural selection.

Since all plants and animals arose from natural selection, and the biosphere formed naturally, humans should not design plants and animals themselves and place them into nature, let alone clone humans. Otherwise, the balance of the biosphere might be destroyed. This is the natural reasoning and thinking of people under the influence of the theory of natural selection.

But what I want to say here is: Wrong! Darwin was wrong. The theory of evolution is wrong. People's thinking has followed suit and is also wrong. Species on Earth did not evolve naturally; they came about through Intelligent Evolution (design). After species are designed, they are handed over to nature, which selects and determines their place in the biosphere. At the same time, this also enriches the biosphere.

One of the purposes of writing this book is to refute the theory of evolution, break its long-term shackles on people's thinking, and change people's ideas. As intelligent beings, we have the right and the obligation to add new species to the biosphere, and to change and redesign the biosphere according to human needs. When we understand humanity's position in nature and the role we are to play, the prohibition on human cloning and the obstacles to cloning experiments are merely small pebbles on humanity's forward path. We will step over them lightly.

Most of the experiments opposed in the WHO statement are strongly advocated and supported in this book. I believe that under the principle of human species unity, everything else can be done. Human cloning is only a minor matter in human biological activities and experiments. In the future, there will be even more "shocking and terrifying" things to do: evolving apes step by step into humans.

2. The Future of Humanity

The Principle of Human Species Unity

Since the birth of humanity, people have been exploring their place in the world, comparing the similarities and differences between their own group and other tribes.

In the 18th century, the Swedish naturalist Carl Linnaeus was the first to classify human races from a scientific perspective. In 1735, he wrote *Systema Naturae*, systematically classifying plants, animals, and humans. He grouped humans together with higher primates and apes, and then classified the various skin-colored peoples of the world who could intermarry and reproduce normally into a unified species—Homo sapiens—a single species with equivalent intelligence levels. Below the species level, based on the geographic distribution of different skin-colored peoples, he further divided the world's population into four geographic subspecies:

Asian yellow race, European white race, African black race, and American red race (Linnaeus, 1758).

Linnaeus's racial classification laid the foundation for the scientific classification of humans. He placed humans within the primates, for the first time assigning humanity's position to the natural world, providing taxonomic evidence for scientifically solving the problem of human origins. However, his geographic subspecies division of the four skin-colored races encountered many problems in practical application.

The fact that human skin color varies with sunlight and is naturally distributed according to latitude contradicts Linnaeus's scheme of dividing the four races by geography. This shows that dividing different races by continent is imprecise and inapplicable. Thus, people sought new racial classification schemes based on the laws of skin-color variation and scientific discoveries, to replace and improve upon Linnaeus's initial geographic division.

In 1775, the German natural anthropologist Johann Friedrich Blumenbach, in his book *On the Natural Varieties of Mankind*, divided the world's population into five races: Caucasian, Mongoloid, Malay, Negroid, and American (Blumenbach, 1775/1865).

Blumenbach's racial classification scheme represented a great improvement compared with Linnaeus's four-race division. Some racial names are still used today, while others have been abolished.

Blumenbach and later many ethnologists felt that using skin color to distinguish races presented considerable difficulties. For example, from the Baltic coast of northwestern Europe to the Alpine mountains of central Europe, from the Mediterranean coast to the Arabian Peninsula in Southwest Asia, and from India to the Pacific islands of southern Asia, the gradient change in skin color among populations is continuous and transitional. It is difficult to find a clear boundary. Although ethnologists established a strict color-scale scheme of 35 shades ranging from white, very white, medium, yellow, brown, black, to very black, faced with mixed and complexly variable skin colors, they still found it inadequate, leading to many glaring comparative errors. Therefore, people adopted other human characteristics beyond skin color as objective markers for racial classification.

After 1840, people proposed using measurements of skull shape to distinguish races, because skull shape is not only measurable but also unchanged throughout life and often has a hereditary basis.

In 1842, the Swedish anthropologist Anders Adolf Retzius first used skull-measurement methods to measure European head shapes. He took the longitudinal straight-line distance from the glabella to the occipital point on the human skull as head length, and the maximum horizontal distance between the two sides behind the ears as head width. Then, dividing head width by head length, he obtained the cephalic index (i.e., head width / head length × 100 = cephalic index). An index below 75 was classified as dolichocephalic (long-headed); 75–80 as mesocephalic (medium-headed); and above 80 as brachycephalic (broad-headed). The

measurement results showed that long-headed types appeared more frequently in northern European populations, while medium-headed and broad-headed types appeared more frequently in southern European populations. Good measurement results were also achieved in classifying European white bloodline types from Western Europe to Central Asia and the Pamir region. But when this method was extended to African regions, problems arose. In central and western Africa, black populations were predominantly long-headed, and their index might even be higher than that of white populations in northern Europe.

Later, people became interested in the shape of the nose. In the 19th century, the French ethnologist P. Topinard measured and observed the human nose and established the nasal index.

At the same time, the German biologist E. H. Haeckel proposed that hair formation and type might have certain significance for racial classification.

In addition, in modern ethnology, eye shape, eye color, ear including earwax, basal metabolism, and almost all observable human morphological characteristics have been tried as standards for race.

Time flies. Science and technology developed to the biomolecular level and were immediately applied to deciphering the human genetic code in order to classify humans.

What was the conclusion?

Scientists at the National Institutes of Health studied the draft of the complete human genome sequence. They unanimously agreed that there is only one human race, and socially recognized racial distinctions are not reflected in the genetic category. As genetic research deepened and approached completion of the genome map, most scientists began to believe that the standards used to distinguish human races actually have almost no direct relationship with biological concepts. Characteristics such as skin and eye color, nose width, and so on are controlled by relatively very few genes.

All humans migrated and evolved from a few primitive African tribes 100,000 years ago. One hundred thousand years is but a moment in the long river of history. In this brief span of human evolution, these genetic changes were adaptations to the immense pressures brought by the environment. For example, people in equatorial regions have dark skin to reduce damage from ultraviolet radiation; people in northern regions have fair skin so that the human body can produce more vitamin D under weaker sunlight. Differences in external appearance reflect genetic differences of no more than 0.01%, an extremely tiny portion of the total genetic map.

Unfortunately, humans pay special attention to differences in external details, exaggerating the significance of so-called "racial" differences, as if the entire structure of our society were built on vision. Dr. Craig Venter, who first announced the deciphering of the human genetic code, pointed out: Race is a social concept, not a scientific one. The genetic map shows no differences between "races" (Venter, 2000; Angier, 2000).

Scientists believe that, in contrast to the very few genes that determine human skin and appearance, human intelligence, artistic talent, and social abilities are determined

by thousands or even tens of thousands among humanity's 80,000 genes, acting in complex and interrelated ways. Scientists also discovered that among people living in the same region, genetic differences in certain aspects can reach 90%, while genetic differences arising from living in different regions account for only 10%. Some genes, such as those controlling the immune system, vary enormously between individuals, but this variation has nothing to do with race.

But a few biologists hold dissenting views. They believe that racial classification is meaningful. Differences between races are mainly on the surface, but differences do indeed exist. Racial classification is of great help in studying human origins and migration processes.

By now, biological science has proven: there is no racial division among humans. Race is a social concept, not a biological one.

In the course of human evolution, several intermediate types of the family Hominidae and genus Homo once appeared. Among them, Neanderthals were the type closest to modern humans. Their brain capacity was equivalent to ours, and their body structure was roughly the same as ours. But they all became extinct; not one remained (Stringer & Gamble, 1993).

Biologically, modern humans are classified into the phylum Chordata, class Mammalia, order Primates, family Hominidae, genus Homo, species Homo sapiens (intelligent human species). Among existing animals, chimpanzees, which also belong to the phylum Chordata, class Mammalia, and order Primates, are the closest relatives to humans and possess the highest intelligence. Humans and chimpanzees evolved from a common ancestor. Although the intelligence gap between chimpanzees and humans is the smallest, we naturally regard chimpanzees as animals because there is still a vast difference between humans and chimpanzees in terms of brain development. This makes it easy for us to find a wide and clear boundary between intelligent humans and all animals, including apes. In my view, this is not a matter of boundaries. Sociologically speaking, animals cannot be mentioned in the same breath as conscious humans. Humans are the masters of all things.

Suppose that in the course of human evolution, another branch of the family Hominidae or genus Homo had survived and maintained its traits to the present day, or that a new type of human emerges in the future who are smarter than us. We would then have brothers and sisters; they would be our subspecies or improved species, and reproductive isolation would arise.

If this situation occurred, what kind of society would it be? How would we respond? This situation occurred many times in human evolutionary history. The most recent was about 40,000 years ago, when modern humans and Neanderthals lived in the same region. Neanderthals had brain capacity equivalent to modern humans and were more robust and sturdy in body. It was not until 30,000 years ago that Neanderthals headed toward extinction while modern humans developed and flourished.

If humans had subspecies or variants, and we compared intelligence, there would

be three situations.

1. Modern humans have higher intelligence than them.
2. Their intelligence is higher than that of modern humans.
3. Intelligence is the same, with no distinction of higher or lower.

In the first situation, our intelligence is higher than the subspecies. Undoubtedly, society is established and dominated by us; we are the masters of society. The problem is: what status do we give them in society? How do we treat them? This is a huge and unsolvable social problem.

Physiologically, they are robust and strong, low in intelligence, but smarter than gorillas—just suitable for doing dirty, tiring, and dangerous physical labor that we are unwilling to do and that animals cannot do. How do we position them in society? Classify them as animals? No, they have emotions, souls, and consciousness, and simple intelligence—things animals do not have. Treat them equally with modern humans and give them human rights? I am afraid this is difficult to achieve; the intelligence factor determines that they cannot enjoy human rights treatment. Their best position in society would be: classified as subordinate humans, given the rights and obligations of subordinate humans. This seems to solve the problem, but do not forget that in a capitalist society with fierce competition and frequent disputes between nations and races, the human rights and power of certain vulnerable groups among humans themselves cannot be guaranteed. The rights of subordinate humans would be even less guaranteed. The result would only be: using them to replace expensive modern humans and robots, making them do the most dangerous, dirtiest, and most tiring work without conditions or wages. When war breaks out, they would be the first victims, slaughtered and used as cannon fodder. Modern humans would experience internal contradictions and self-blame because of their existence. If they were a little "smarter," modern humans would still have to guard against them, control and restrict them, and their ultimate fate would only be extinction.

In the second situation, a superior human species appears whose intelligence is higher than modern humans', or who possess some special function beyond modern humans. The social situation is the same as the first situation, except that superior humans become the masters of society, and we modern humans become subordinate humans. We ourselves may not feel "stupid," but the things we do, they can do better and stronger than us. They can control and enslave us. Modern humans become working machines, laboring until death even when sick or old. Our reproduction and existence only serve to add cheap labor for superior humans and become sacrifices in their conflicts. We would not be allowed thoughts or feelings, and killing us would be as casual as stepping on an ant. We would be better off dead.

In the third situation, a new human species appears, hardworking and intelligent, with intelligence equivalent to ours, but reproductively isolated from us. Obviously, they would prefer to live within their own human group and establish their own nations. Both modern humans and new humans would possess social civilizations of equal level, and both societies would need to advance forward. Conflicts over spheres of influence, energy extraction, and culture would inevitably arise. At the same time, due to reproductive isolation and little interaction, they would suspect each other,

view each other as alien species, and fear being exterminated by the other. War would inevitably break out.

In ancient times, one of the means by which emperors and chiefs maintained peace and mediated wars was political marriage. Even if two opposing groups or one conquering the other, from a historical perspective, such contradictions could be resolved. Two or more groups could intermarry and merge with each other. As time went on, the "boundary" between them would become increasingly blurred until it disappeared.

But the contradiction between two types of humans is irreconcilable. The boundary between them would always be clear and profound, insurmountable. The result of war would be one side exterminating the other, or both sides suffering losses, with society regressing.

The above analyzes the social situations and consequences that would arise if human subspecies appeared. The result of the first situation is that we would bear a huge social burden, sufficient to obstruct the development of human society and cause it to stagnate. The second situation is one that none of us wishes to see; the fate of modern humans would be tragic. The third situation is war, destruction, and social regression.

Whatever situation occurs, it portends a bad outcome for us. We humans cannot risk extinction to obtain results that are harmful to us.

In the course of human evolution, there have been many instances in which two or more human species existed simultaneously. The outcome was always: one emerged triumphant, and the others disappeared. This is consistent with the principle of human species unity. Modern humans embarked on a path of rapid development after finally defeating Neanderthals 30,000 years ago.

Do modern humans still need this principle now and in the future? We are currently the only humans on Earth and in the solar system. No other human species threatens us. Can we rest easy?

Currently there are no other human species, but what about 1,000 or 10,000 years from now? There is no guarantee that there won't be.

In the future, biotechnology will reach very high levels, capable of creating a sub-human species or raising animal intelligence. There will also be demand in certain areas, such as serving the interests of one's own country or group, or making sacrifices; capitalists will need cheap labor; space activities will become increasingly frequent, with space reproduction and extraterrestrial (solar system) colonization producing humans adapted to those planetary environments; long-term natural or artificial reproductive isolation between populations may also produce subspecies.

Now there are scientists proposing to modify human genes, such as the "theory of gene infiltration between humans and animals," and so on. They believe that in the future, humans and animals will have closer genetic infiltration, "you within me, me within you." On the one hand, to "strengthen the body," humans will purposefully use certain animal genes, such as using owl eyes to improve human eyesight, giving people "fiery eyes and golden pupils." In the near future, new humans with the

strength of lions and the longevity of turtles may appear. On the other hand, humans will also purposefully transplant human genes into certain animals to change some of their characteristics. For example, transplanting genes carrying human intelligence into monkey sperm to greatly increase the IQ of newborn monkeys, enabling them to help humans with dangerous work such as coal mining in shafts, deep-well salvage, forest exploration, and high-rise firefighting.

Modifying human genes can easily give rise to a new human species, causing reproductive isolation in humans. Transplanting human intelligence genes into animals—how do we view it (him)? As a person? As an animal? We want it (him) to do heavy and dangerous work; what if it (he) develops feelings? All such tendencies are extremely dangerous; we must never do them in the future.

Here, I very seriously warn people: we modern humans must forever follow the principle of human species unity, from birth until extinction. Follow it, and there will be peace; violate it, and there will be disaster.

At the same time, the boundary between humans and animals must remain as wide and clear as it is now, forever.

The principle of human species unity is that within the scope of the solar system, there is no generational reproductive isolation among humans.

It is defined within the scope of the solar system because in the near future humans can reach anywhere in this region, and human activity and sphere of influence can only be the solar system. As for other humans beyond the solar system, this is what we earnestly desire and strive toward.

There is one exception: the evolution experiments we conduct from animals to humans should be permitted. They will produce a small number of sub-humans, but the experiments are controlled and isolated.

The Space Age

Scientists have many ideas about building space cities. The most famous is the book *The High Frontier** published by Dr. Gerard O'Neill in 1977. The content of this section is generally consistent with the direction of scientists' ideas, but there are also differences and my own thoughts (O'Neill, 1977).

**The High Frontier* systematically elaborates on his space colonization concept, detailing plans to build large human habitats in the Earth-Moon system, and proposing futuristic designs such as the famous O'Neill cylinder.

In space, countless space capsules (cities) orbit the Earth, planets, and the Sun. Spacecraft shuttle between space cities and Earth, and between space cities. People come and go. This is not a science-fiction movie. In the year 3000, we will see this real scene.

A space city is a giant rotating wheel. Its rotation produces a gravitational acceleration of 1 G. People live in large cabins at the bottom of the rotating wheel.

How big is a space city? Imagine: if the rotating wheel has a diameter of 10 kilometers and a width of 3 kilometers, and rotates once every 2 minutes and 20 seconds, the bottom circumference area is 94 square kilometers. By urban population density standards, it can house 100,000 people. It is a good method for expanding human living space and avoiding Earth disasters.

Along the central axis of the rotating wheel is a spaceport where spacecraft dock and passengers and cargo enter and exit. Entering the axis of the space city, people slowly move downward through radial corridors, reaching the cabin floor. They gradually increase from zero gravity to 1 G gravity.

The space capsule interior is several hundred meters high. Fresh air circulates under a transparent canopy, and the four seasons change according to the time of year.

The ground level has mountains, water, plants, animals, and pedestrian roads. Houses are built underground. Basement level one contains highways; basement level two contains agricultural production; below that are warehouses or light industry. The outermost layer is the structural load-bearing shell.

Initially, space capsule components are manufactured on Earth and sent into space by spacecraft for assembly. The cycle is long and the cost enormous; this is a stage that must be experienced. After space industrialization, things become simpler and easier. At that time, we will rebuild the industrial system, ecological system, and social system in space.

Industrial System

Manufacturing products on Earth and sending them to space stations is not advisable. Since we live in space, we must acquire in space, manufacture in space, and use in space.

1. Energy and minerals

Prospecting and mining are similar to the process of bees collecting honey. First, scout bees reconnoiter outside; then worker bees bring back pollen. After minerals are brought back, they are placed in space stockpiling yards in preparation for industrial production. The difference is that bees collect honey within a range of only a few kilometers, while our mining range is the entire solar system.

Current photovoltaic power generation technology is mature and will be fully and widely applied in space.

2. Industrial and agricultural production

Smelting and industrial manufacturing are carried out outside the space city, in dedicated industrial capsules. People need only sit inside the space city and remotely control robots outside to complete industrial production.

Agriculture is industrialized, with extremely high yields regardless of season. Space cities need large amounts of soil; the manufacture of nutrient soil will be an important industry.

All industrial and agricultural production on Earth can be realized in space, and production impossible on Earth can also be completed, such as zero-gravity industry and agriculture.

Space products will be extremely abundant. What space cannot use up will be sent to Earth in a continuous stream.

3. Communications and information

The vigorous development of wireless communications and the Internet has provided convenience for humanity's entry into space. Information transmission within the solar system is rapid and smooth, digital currency is convenient and fast, and the global village becomes a solar-system township.

4. Science and technology

Build giant optical telescopes in space to search for stars and planets, and to find planets where life can survive and reproduce. Space telescopes should be built as large as possible, to the limit of physical laws.

Building giant telescopes in space can effectively utilize the characteristic of zero weight. The advantages are: no tube is needed; the objective lens and eyepiece can be separated by hundreds of meters or several kilometers; and the objective lens need not be complete.

Build a particle collider orbiting Mars in space. The accelerator tunnel does not need to be complete either; points can replace lines. The trajectory of accelerated particles is a ring composed of straight lines and arcs; the accelerator is located on the arcs.

Spacecraft will fly farther and faster. The Pioneer 10 probe launched by the United States in 1972 has already left the solar system. It is 12 billion kilometers from Earth and still operating normally. In 2 million years, it will pass the nearest star in the constellation Taurus (Fimmel et al., 1977).

Without gravity, spacecraft takeoff becomes easy. Spacecraft speeds should reach one percent of the speed of light, that is, 3,000 kilometers per second. Thus, a spacecraft would need only 10 million years to reach the farthest point of the Milky Way.

People's range of activity will be the entire solar system. They will ride spacecraft to view Jupiter's beautiful rings. Mars and Venus will be built into Earth's back gardens, tourism hotspots, and also Earth's great laboratories, where scientists conduct biological evolution experiments.

5. Military

Laser weapons are made for space. In an environment without atmosphere, lasers can achieve maximum energy efficiency. Although there is an international convention banning weapons in outer space, they will exist under the name of protecting space cities.

Altering the trajectories of meteorites and asteroids is a doomsday weapon. Just one strike can destroy Earth.

6. Safety

The rotating wheel is sufficiently sturdy, with at least three structural designs to ensure safety, such as radial cables, circumferential prestressed steel cables, and circumferential trusses.

The air cabin withstands an internal pressure of 1 atmosphere and has good sealing performance. Like ship cabins, it has a compartment structure; along the circumference are individual compartments. In emergencies, people are evacuated and cabin doors are closed. All manufactured products must be non-combustible, with no open flames; plant products must be treated. Sufficient escape capsules are provided.

Laser weapons are deployed all around to intercept meteorites and foreign-object impacts.

Ecological System

The ecological environment of the space city is the same as Earth's. The giant rotating wheel provides gravity, the air is at 1 atmosphere of pressure, and a magnetic field is also indispensable. Air, soil, and water are precious. Initially they are taken from Earth; afterward they are manufactured in space for use in the space city. Plantation agriculture is industrialized; the grain produced can feed back to Earth. Wind, rain, snow, and fog appear randomly. Trees, flowers, and plants flourish. Mountains and rivers are beautiful, lake waters are clear. Birds fly in the sky; rabbits run on the ground.

Newborns grow up in the space city and reach adulthood. When they go to Earth, there is no difference; they can marry Earth men and women and reproduce normally. The deceased are given space burial. An electromagnetic launch track sends space coffins beyond the solar system.

Outside the space city, in the direction of the Sun, groups of sunshades rotate, with a half-rotation period of 24 hours, creating day-night changes and variations in sunlight intensity for the space city. The transparent outer shell of the space capsule can also have this function. For example, colored gas can be absorbed or released in a hollow layer, or the interlayer can change color to block reflected Earth light.

Within Earth's gravitational range, total mass is conserved: mass brought in equals mass thrown out. Mass within Earth's gravitational range remains evenly distributed.

In some remote corner of the solar system, scientists are conducting a secret experiment. Evolution experiments from single cells to multicellular organisms, plants, animals, and humans. Not natural selection in a natural environment, but picking up a scalpel to cut DNA and create gene mutations.

Social System

In the Space Age, technology is advanced, robots work, productivity develops rapidly, labor efficiency is high, working hours are short, and products are extremely abundant.

Food, medical care, education, housing, and so on are all free. A social credit system marginalizes currency. People contribute according to their abilities and receive according to their needs. Labor is regarded as honorable. People are equal and

friendly to one another. Individual families will exist permanently.

Inside the space city, people from all countries live together. Visiting between cities of different nations requires no passport. When one side is in danger, eight sides come to help.

The good life in the space city reflects back on Earth, changing Earth's social ecology. National boundaries fade, there is no war, crime is rare, people are friendly and help one another, competing to labor, and families live and work in peace and contentment.

Thus far, we have established in space an advanced and complete industrial system, an ecological system suitable for human habitation, and an ideal social system, and we have changed the people on Earth.

More than half of the solar system's population lives in space. Humanity enters a world of Great Harmony, living a happy life like paradise.

With today's industrial technology, building a space capsule 10 kilometers in diameter on Earth can absolutely be accomplished. But assembling it in space is not as simple as a magpie carrying twigs to build a nest. The cost is astronomical. For a single country to build it alone, the pressure is great, and the long cycle makes it susceptible to interruption by national political changes. Conducting it under the United Nations framework would reduce the impact of adverse factors considerably. At the same time, rules are jointly formulated, space is rationally arranged, and "land-grabbing" does not occur. People from every country reside in the space capsule, maintaining an intermingled presence so that the space wheel will not suffer attacks.

Human Physique

What will future humans look like? This is also something we care about very much. When I was still in junior high school, I saw a report on the shape of the human body 500,000 years in the future. It was based on a questionnaire survey of people. Most people believed that in 500,000 years, human body shape would not change much, only the head would be slightly larger and the limbs a little thinner. There were also extreme predictions: the human form would be like a bird. The only human-like feature would be a human face. Two claws grip branches while crouching in a tree, and a feathered tail extends into the water beneath the branches to scoop up plankton for food. The impression was so deep that even after more than twenty years, I can still remember that picture.

This year I saw an article in a science magazine stating that some experts believe certain human organs are defective. These parts are prone to disease and cause suffering. In the future, modifying these organs to eliminate defects could be considered. The magazine had a color picture of a person walking after organ modification, roughly like this: limbs only half as long as original but much thicker, a thick and short neck, eyes replaced with bird eyes, and the body tilted forward at 60 degrees. Reducing human suffering is a very good thing, but when I saw this picture,

the image of an ape immediately appeared in my mind.

Some people think humans will live in the sea; some scientists believe human skin will be green, surviving by absorbing sunlight. Predictions about the future of humanity are varied.

Modifying human genes to transform humans violates the principle of human species unity; it must not be done. Since humans did not come from natural evolution, they certainly will not undergo natural evolution again. Modifying genes to transform humans must not be done either. Future humans will basically maintain our current appearance; changes will only be in skin color, nose height, limb thickness, and so on.

The Span of Humanity

How long can we humans survive on Earth? This is one of humanity's mysteries and also a question this book explores.

The time humans survive on Earth is determined by humanity's starting time and ending time. The starting time of humanity now has a basic conclusion: modern intelligent humans were born in a certain place in Africa 150,000 years ago. What about the ending time?

Everyone has a beautiful wish: that Earth humans can survive for a long time, the longer the better, forever and ever. So what is the shortest possible survival time for humans on Earth? What is the longest?

The shortest survival time is already known: humans have survived for about 150,000 years. The shortest survival time is this number. A more accurate number awaits scientists' continued efforts. The number increases with the passage of time, expressed by the formula: 150,000 years + AD year. The year 2000 AD is negligible.

What about the longest survival time? Scientists have also told us: it is determined by the Sun, the source of all things.

Astronomers have calculated that the Sun can continue to shine stably for 5 billion years. This data was obtained through computer simulation and verified by observing other stars. The conclusion is very reliable.

That is to say, the longest possible survival time for humanity is 5 billion years.

Within these 5 billion years, the factors threatening human survival and potentially causing human extinction are no more than these:

1. Astronomical aspects

Collision of asteroids and comets with Earth, supernova explosions near the solar system, and changes in Earth's magnetic poles. The most destructive comet impact on Earth occurred 65 million years ago. This event completely destroyed Earth's ecology, causing the extinction of the vast majority of organisms, including dinosaurs (Alvarez et al., 1980). If an impact of this scale occurred now, would humans survive? I think the prospects are grim; it is best that it does not happen. But we need not live in daily fear, worrying that a meteorite might fall on our heads someday. After all, this is an

event that occurs only once every many tens of thousands of years. Now we can be even more at ease. Astronomers have numbered and closely monitored every asteroid that poses a threat to Earth without omission. Once an asteroid is found to be heading toward Earth, we will take action. Methods include launching rockets to shatter it or deflect its orbit. The technology is not difficult. We can also know in advance when a comet is coming and can take preventive measures early. As technology develops in the future, the means to predict and prevent asteroid and comet impacts on Earth will become more perfect and secure. We can rest easy.

Earth's history has seen many events of magnetic storms, magnetic pole drift, and magnetic field polarity reversal, which have had serious effects on the survival and reproduction of organisms. But these are not fatal. Life emerged through these repeated magnetic changes; humans need not worry.

Astronomers have not discovered any supernova explosions within 5 billion years that would threaten life on Earth.

2. Ourselves

War, viral plagues, genetic problems, and infertility.

Regarding war, human history is also a history of wars. Humans emerged from wars. Of course, people now possess weapons of mass destruction, which are a threat to human survival. But we must also see that the world's people loving peace is the mainstream. We have reason; we will not exterminate ourselves.

Humans have survived to this day, having suffered countless plagues large and small, with massive population deaths. A plague in medieval Europe took half of Europe's population at the time. But people pulled through. Plagues cannot wipe out the entire population of a plague-stricken area. The survivors developed immunity and can resist the virus. The population is not decreasing; it is increasing. Medical care can prevent and control viral harm.

The definition of human extinction is all people on Earth dying, but this is actually impossible, even with great disasters. War and plague are even less capable of achieving this. After a disaster, even if only one fertile man and one fertile woman remain on Earth, humanity will not become extinct. They will bear children and propagate descendants like the "African Eden." After 100,000 years, there will again be a civilized and developed world.

Genetic problems and infertility can be solved by increasingly advanced biogenetic technology. Genetic problems, infertility, or unwillingness to reproduce—even if these cannot be solved, there are reasons why they cannot be solved. For example, humans have already survived to the maximum time and there is no more living space. Humans have entered old age and completed their mission; they do not care about the length of survival time.

3. The Creator becomes disappointed with us, exterminates us, and redesigns humans.

We humans are excellent, intelligent and hardworking, with advanced social civilization and technology, walking on the path She hopes for. The Creator is satisfied with us; it is only some human shortcomings that cause Her worry and disappointment: Earth cannot bear the constantly increasing population, the ecological

environment is being destroyed, and there are weapons of mass destruction.

My conclusion is: despite disasters and hardships, modern intelligent humans can overcome one difficulty after another, will have a perfect ending, and can survive to the maximum time—namely, 5 billion years.

Soul • Resurrection

In traditional Chinese, "soul" (靈魂) is composed of two characters. Their literal explanations are as follows.

Ling (靈): The human body is separately placed in boxes, having lost its function, but it can still speak. No matter rain or any climate, nothing can stop it from speaking and expressing thought. Moreover, the sources of speech and thought expression are more numerous than when alive. Two people, three mouths.

Hun (魂): The figures of deceased people change like clouds, now present, now absent, everywhere and nowhere.

Soul: Although the human body is restricted and loses function, it can still express thought and manifest its figure. No matter what climate or situation, nothing can prevent it from doing so. Its figure and thought are around us, even more so than when it was alive. Everywhere and nowhere, now present, now absent. It is there, yet nowhere to be found.

The original meaning of soul is: when a person dies, thought and figure do not die; they are still alive, around us.

Times change, society progresses, and people's understanding of the meaning of "soul" should also differ.

Now and in the future, we will have this understanding: the deceased are distributed in various regions. They can manifest their figures, express thoughts, and converse. This behavior is not affected by external factors. They can divide themselves to simultaneously exhibit this behavior with many people—something they could not do when alive. Their figures and thoughts are around us, in telephones, screens, wireless networks, computers, virtual spaces, and artificial facilities. They can display their talents and experiences, converse with us, and see each other. They are omnipresent, yet we do not know where they are.

Modern biological reductionism holds: ① Life contains no phenomena that violate the laws of physics and chemistry; ② There are no mysterious movements in life beyond physical and chemical movements; ③ The interaction of physical and chemical movements in life produces new phenomena or properties, namely, the whole is greater than the sum of its parts. Modern reductionists believe that by studying the physical and chemical interactions of every part within a living body, all functions of the organism can be explained.

The brain and thinking are certainly no exception. Since they can be explained by the laws of physics and chemistry, there exists the possibility of implementing them by physical and chemical methods.

Future technology will be able to do this: download the consciousness from the human brain into a computer, so that the computer contains human thought, including life experiences, habits, knowledge, wisdom, and everything else. It will be realized in this way: downloaded into a computer with this function; or, after processing, directly using the human brain as the brain of the computer.

Imagine human life after souls are born and enter the network: making phone calls with them, conversing, seeing them, playing chess with them, studying, seeing a doctor, allocating funds, and so on. A life scene several years later:

Li is the manager of a small enterprise. His father died not long ago, and he has just taken over the business from his father. He returns home, opens the virtual facility, and calls out his father.

Mother, wife, and children converse together with the father. The father is very happy to see the whole family safe and sound. At this moment, a delivery person brings a package—a birthday gift from the father to his granddaughter, because he has deposits and passwords he can use at the bank.

Li asks his father several questions about the company that he does not understand, as well as the safe password. The father tells him one by one. He tells his father that the company's current operating conditions are not good. The father says, in the 20th century there was a man named Bill Gates who was a genius in management. We can invite him to be in charge of the company's operations. After discussion, they settle the matter.

Mother's health is not good. He immediately invites the Chinese divine doctor Bian Que. Bian Que asks about her condition and has her extend her wrist into an instrument. Before long, Bian Que writes out a prescription.

The phone rings. It is his long-deceased grandfather calling. The grandfather asks him to pay fees so that he can manifest himself virtually. Li promises to pay once the business situation improves.

After finishing his work, Li has some leisure. He invites the 20th-century chess master Anatoly Karpov to play a game with him.

His daughter is learning ballet. Class time has arrived. She enters the virtual arena. Classmates and teachers flash into appearance one by one. The teacher kicks her legs and spins among them. She and her classmates follow the teacher's movements. At this point, the teacher walks up to her, points out her mistakes, and gives guidance.

His son returns home and immediately enters the virtual arena. Yesterday he lost to a swordsman named "Sword God Smiles." He wants to seek revenge. He quickly finds "Sword God Smiles," picks up his sword, and clangs away fighting "him."

The next day at work, Li searches for Bill Gates's address and signs a contract with him.

The soul, realized through human high technology, fully participates in all aspects of our human social life. The above lists its good aspects. It also has negative aspects, such as disturbing people's lives, using one's own bank deposits to conduct business,

including things society does not permit. Poor ghosts and rich ghosts will appear. Can they possess and use their own property? How should they use it? Should a "soul right" be established to regulate and protect their rights and interests? These problems also need to be solved by human society.

Resurrection is divided into two categories:

1. Resurrection of the body: current cloning technology can accomplish this. It is estimated that within this century, cloned humans may be born. The bodies of the deceased can be resurrected, and the living can be copied. But the resurrection and copying of the body do not signify the resurrection of the person. From the moment of birth, a person has a unique consciousness. Even if two people have identical bodies and identical life experiences and environments, they are still each their own individual. The birth of a cloned human is merely the arrival of another new person; only their bodies are the same. It has little significance.

2. Soul + artificial body: a sentient artificial body plus the soul—this is resurrection in the true sense.

The End

The last old person on Earth sits upright in a chair. He gazes at the red-stained sky, his mind filled with countless thoughts, recalling the sacred and glorious journey of Earth humans, his heart filled with infinite pride and satisfaction.

At the beginning of the solar system's formation, life existed on Earth—bacteria, mainly a kind of cyanobacteria that absorbed carbon dioxide and released oxygen, creating the necessary environmental conditions for the birth of higher organisms. The appearance of cells provided the foundation for creating higher organisms. Evolution proceeded from tubular organisms, shellfish, fish, amphibians, reptiles, mammals, to humans—a straight-line process. There were several mass extinctions in between, but the organisms preserved after extinction could continue to develop.

We humans were gradually designed and evolved based on the body of primates and gorillas. From apes to modern intelligent humans, it took about 5 million years, with many intermediate types in between. The ancestors of modern humans appeared naked on the African land. They had nothing: no advanced tools, no civilized thought. They relied on their own hands and talents to explore and advance in nature. We passed through the Stone Age, Bronze Age, Iron Age, Information Age, Space Age, and Biological Age. Earth humans created a glorious civilization.

The condition of the solar system and Earth's environment are increasingly changing in directions unfavorable to biological survival. Organisms die, become sterile, and species become extinct. The offspring of animals and humans decrease. But this process is very gradual and slow, requiring millions of years. People living in that era cannot feel this change. Initially, human technology can temporarily alleviate this situation, but technology cannot defeat powerful nature. The birth and death of

life are natural laws of the universe; humans can only accept and adapt to them. After the final efforts fail, humans face the arrival of the end calmly.

The Noah's Ark • Life Eggs we sent out have found and reached habitats suitable for life's survival and reproduction, sowing the seeds of life. The life of Earth humans continues on other planets in the universe. We know that the birth of new humans will come sooner or later, because we have the guarantee of technology and programs.

If Earth humans are very fortunate, we will receive news of the birth of new humans. Their "Sun" is a young star, and they have a glorious future. Their body size, external form, structure, and organs may differ from ours, but one thing is the same: wisdom and diligence. Relying on this, they do not need the help of our highly advanced civilization. Starting from zero, they gradually embark on the road of civilized development, and are able to explore their own origins and destination, advancing in the correct direction.

Earth humans have fully and completely accomplished their sacred mission. The chain of life has not broken in our hands; it continues. The baton of cosmic life is passed to the hands of our descendants. Although we are not the only transmitters of life, the transmission of life is the duty of all intelligent beings in the universe, and a comfort to ourselves and all souls on Earth. All of this is also determined by the nature of DNA.

At this moment, the old person has no sadness or regret, and peacefully closes his eyes.

Humanity's journey of survival on Earth draws to a grand close.

Earth humans achieve nirvana and ascend; all souls enter heaven.

Beside the old person is a group of non-biological intelligent beings. Their reason and task for existence is—to continue sending Noah's Ark • Life Eggs into the universe.

The Final Glory

Our mother has raised ten children and dozens of grandchildren, some biological, some adopted. From the moment the children were born from the mother's body or adopted, they looked at her from afar, reluctant to part from a distance, circling around her and never leaving. The mother gives light and power to her children by consuming the energy of her own body. From youth to middle age to old age, she silently nurtures her descendants for 20 billion years, never stopping, never asking for reward.

The mother has consumed all the energy of her body and can no longer nurture her children. She has reached her twilight years. The mother misses her children and grandchildren dearly. She stretches out her arms to welcome them back; Earth melts into her embrace. Mother, sisters, brothers, and descendants are reunited. Their bodies are no longer separate from one another; they all melt together into the mother's fiery red bosom.

Even so, this cannot eliminate the suffering of separation over 20 billion years. The

mother erupts with the most beautiful and brilliant light in the universe, proclaiming to the cosmos the end of their great and sacred life. Part of their bodies turns to dust, preparing raw material for the birth of new stars. Finally, the mother is white-haired, hunched over, and senile. From then on, no one pays attention to her, no one knows her history, and she disappears from people's hearts.

Chapter 5 The Journey of Life

1. The Origin of Life

Humanity's future is rooted in humanity's beginning, and the dawn of life is also the seed of humanity's future. Readers will find that Intelligent Evolution offers a remarkably coherent explanation for the origin and step-by-step evolutionary journey from bacteria to humans. It aligns with the fossil record and is consistent with the principles of genetics.

Cyanobacteria

The earliest prokaryotes on Earth—cyanobacteria—were discovered in strata 3.5 billion years old. Cyanobacteria, also called blue-green algae or cyanophyta, dominated Earth for an extremely long time in the history of life: from the earliest fossil records (about 3.5 billion years ago) to their obvious decline (about 700 million years ago).

Cyanobacteria were the earliest photoautotrophic organisms to appear. They used water as an electron donor and solar energy to reduce carbon dioxide into organic carbon compounds, releasing free oxygen. The early ancestors of cyanobacteria established microbial mat ecosystems on Earth as early as the Archean Eon, building stromatolites. They reached their greatest prosperity in the middle Proterozoic Eon. Only at the end of the Proterozoic Eon, when multicellular organisms flourished, did cyanobacteria significantly decline, though they continue to exist today. During the 2.8 billion years that cyanobacteria dominated, they transferred large amounts of CO_2 from the atmosphere to the lithosphere through direct and indirect actions, building carbonate stromatolites on a massive scale while releasing free oxygen. In this way, cyanobacteria improved both the lithosphere and the atmosphere (large-scale biogenic carbonate deposition changed the composition and nature of the atmosphere, greatly reducing CO_2 content and gradually increasing free oxygen levels) (Schopf, 1993; Knoll, 1985).

Large-scale carbonate deposition not only changed the face of the land but also affected tectonic movements. Earth's environment underwent qualitative changes, creating conditions for the origin of eukaryotes and the evolutionary development of higher organisms. It can be said that without cyanobacteria, it would have been impossible to establish an early, relatively stable ecosystem; impossible to produce today's atmosphere with low CO_2 and relatively high free oxygen; impossible to create environmental conditions suitable for the survival and development of higher organisms; and impossible to have the later biosphere covering the oceans and land.

From Early to Middle Precambrian cyanobacteria fossils, we can see that the most primitive cyanobacteria were simple single-celled spherical forms. Cyanobacteria from about 3 billion to 2.5 billion years ago all belonged to this type. From 2.5 billion

to 1.7 billion years ago, some filamentous cyanobacteria appeared, with filaments reaching several hundred micrometers in length. These were colonies formed by the aggregation of single cells. Later, cyanobacteria differentiated and developed further, including three-dimensional forms with three mutually perpendicular planes, and so on.

Primitive cyanobacteria could live in oxygen-free environments and were not afraid of ultraviolet rays in sunlight. Therefore, they could live in the primitive atmosphere, gradually transitioning toward an oxidizing environment, and finally living in an oxidizing environment. In the Early and Middle Precambrian, most of the free oxygen in the atmosphere was released by cyanobacteria.

Because all eukaryotes need oxygen; otherwise they cannot survive. Therefore, the appearance of cyanobacteria has extremely important significance for the evolutionary development of the entire biological world.

The theory of natural selection holds that only organisms adapted to the environment can survive—that is, surviving organisms must be adapted to the environment. Cyanobacteria flourished for more than 2 billion years and should have been the best adapted to the environment. In other words, the environment in which cyanobacteria lived and which they transformed should have been suitable for their own survival. But the fact is that the oxygen released by cyanobacteria was unfavorable to their own survival, and the environment changed by cyanobacteria ultimately caused their decline.

The earliest organisms to appear on Earth were not limited in pattern or form; they could be one or several among hundreds of millions of possible kinds. Slightly higher-level organisms could not survive in the early Earth environment; they needed oxygen, lower temperatures, and land. At this time, a lower-level organism was needed that could survive in the early Earth environment and change the environment in the direction of increasing oxygen, lowering temperatures, and creating land. Just so, the organism that appeared was cyanobacteria. They could carry out photosynthesis, absorb carbon dioxide, and release free oxygen, converting carbon dioxide into carbonate deposits. The environment changed by cyanobacteria created conditions for the appearance of higher-level organisms.

Why was the earliest organism to appear exactly the indispensable cyanobacteria? It was only one among the hundreds of millions of possible organisms! According to probability, it is one over infinity. The origin of photosynthesis greatly preceded the oxidation of the atmosphere, which biologists cannot explain. Moreover, the mechanism of photosynthesis is very complex—like humans being able to build watches as soon as they entered the cast-iron age.

Are these the great fortune of humanity, the greatest fortune? No! This was designed, and designed early to be placed there waiting. The signs and purposes of the design are very obvious.

At the beginning of the solar system's formation, the Emissary—an interstellar non-biological intelligence and executor of the mission for life's birth and

evolution—arrived on Earth.

At that time, there was no life on Earth. The Emissary's first mission was to give birth to life on Earth.* This organism had to be able to survive and reproduce, and to change the environment, creating survival conditions for the next higher-level organisms to be designed.

The earliest biological traces discovered on Earth are in strata 3.8 billion years old. At this time, the solar system and Earth had formed only 600 million years earlier. The interstellar Life Egg must have arrived in the solar system at some point 3.8 billion years ago. It can even be imagined that it arrived when the solar system was still a "porridge," orbiting and waiting around this gravitational field.

Using Earth's material conditions and natural environment, and considering the environmental conditions needed for the survival of next-level higher organisms, the Emissary designed a bacterium. The bacterium's function was to survive and reproduce in the environment and change the environment toward a predetermined goal.

The bacterium designed by the Emissary was cyanobacteria (and it was cultivated).

The Age of Cyanobacteria caused the following changes in Earth's environment:

1. Changes in atmospheric composition. The oxygen-releasing photosynthesis of cyanobacteria caused a slow accumulation of free oxygen in the atmosphere. Around the Early to Middle Proterozoic Eon (2 billion years ago), the atmosphere began to oxidize, and the partial pressure of free oxygen reached 1% PAL (creating conditions for the origin of eukaryotes). By the Late to Terminal Proterozoic Eon, the partial pressure of free oxygen increased to 6%–10% PAL (creating conditions for the origin of multicellular animals and plants). At the same time, due to carbonate deposition caused by cyanobacteria, CO_2 content in the atmosphere dropped.
2. Changes in the physicochemical properties of seawater. For example, calcium and magnesium ion concentrations decreased, and pH changed.
3. Earth's average surface temperature may have gradually decreased (due to the decline in atmospheric CO_2 content).

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*In 1966, the Soviet astronomer Iosif Shklovsky and the American astronomer Carl Sagan speculated that life on Earth might be the result of directed seeding by other civilizations. In September 1971, Francis Harry Compton Crick, winner of the Nobel Prize in Physiology or Medicine, pointed out at a conference on extraterrestrial civilization communication that life on Earth might have originated from an advanced cosmic civilization, delivered to Earth by unmanned spacecraft as microorganisms. Two facts support this theory: first, the uniformity of the genetic code indicates that at some stage in life's evolution, it passed through a small population bottleneck; second, the age of the universe may be more than twice the age of Earth, so life has had sufficient time to evolve a second time from a simple starting point to a highly complex civilization (Shklovsky & Sagan, 1966; Crick & Orgel, 1973).

The Age of Cyanobacteria transformed Earth's environment in three fundamental ways:

1. Changes in atmospheric composition. Through oxygenic photosynthesis, cyanobacteria slowly accumulated free oxygen in the atmosphere. By the Early to Middle Proterozoic Eon (around 2 billion years ago), the atmosphere began to oxidize, and the partial pressure of free oxygen reached approximately 1% of present atmospheric levels (PAL), creating the conditions necessary for the origin of eukaryotes. By the Late to Terminal Proterozoic Eon, oxygen levels had risen to 6%–10% PAL, setting the stage for the emergence of multicellular animals and plants. Simultaneously, the large-scale carbonate deposition driven by cyanobacteria drew down atmospheric CO_2 (Holland, 1984; Kasting, 1993).

2. Changes in the physicochemical properties of seawater. As cyanobacteria altered the atmosphere, the chemistry of the oceans shifted as well. Calcium and magnesium ion concentrations decreased, and seawater pH changed in response to the massive precipitation of carbonate minerals (Holland, 1984; Canfield, 1998).

3. Gradual decrease in Earth's average surface temperature. The decline in atmospheric CO_2—largely sequestered into carbonate rocks—reduced the greenhouse effect, causing Earth's average surface temperature to fall gradually over time (Kasting, 1993; Holland, 1994).

The environmental changes caused by the prosperous Age of Cyanobacteria were the main reason for their decline. The direct consequence of cyanobacterial decline was the reconstruction of the ecosystem, with metazoans, plants, and eukaryotic plankton entering the new ecosystem.

The significance of the Cambrian Period lies in: the birth of primary life on Earth, creating survival conditions for the higher-level life that would appear next.

Eukaryotes

After more than 2 billion years, the prokaryote cyanobacteria improved Earth's ecological environment. Having completed its mission, it stepped down from the leading role. Eukaryotes appeared.

According to fossil records, single-celled eukaryote fossils appeared 1.9 to 2.0 billion years ago, but this is disputed. Reliable and abundant eukaryotic fossils appear in the Late Proterozoic Eon, 800 to 1,000 million years ago. After single cells appeared, multicellular organisms followed. Multicellularity was another great advance in the level of biological organization. This evolutionary event laid the foundation for the emergence and development of all higher life on Earth.

Research on cellular ultrastructure shows that the internal structural differences between prokaryotic and eukaryotic cells are vast. This proves that the greatest structural discontinuity in the biological world is not between animals and plants, but between the two major groups: prokaryotes such as bacteria and cyanobacteria on one side, and single-celled and multicellular eukaryotes on the other.

How to explain this problem? Evolutionists have debated it for more than 20 years, throwing out various "hypotheses" that contradict one another. The fossil record lacks continuous intermediate transitional forms, yet evolutionists insist on "hypothesizing" that there are intermediate transitional forms. Even so, they still cannot explain how prokaryotes transitioned to eukaryotes. But if the concept of Intelligent Evolution is introduced, this problem is readily solved. It was completed by the Emissary in a laboratory (or it could have been brought by the Emissary). It is an important step in the evolution toward higher organisms.

After multicellularity, Earth had slightly higher-level organisms, and the Emissary then designed vascular plants. Vascular plants were highly adapted to various terrestrial environments, expanding their occupation of land habitats and creating various microhabitats, providing habitats and energy supplies for land animals. Without vascular plants, a relatively stable terrestrial ecosystem could not be established, the appearance of a wide variety of land animals would be impossible, and the biosphere would be incomplete.

Energy and Mineral Deposits

Entering the Devonian Period, there was an important task: storing energy for the humans who would appear in the future. The method used was, of course, biological, and the conditions were already in place.

The first energy source the Emissary stored for us was petroleum.

The Emissary designed various animals, plants, plankton, microorganisms, and bacteria and algae. These reef-building organisms underwent death and transformation. After death, decaying or semi-decaying organic matter settled to the bottom of the reef and permeated into reef crevices. Some formed bioclastic limestone together with calcium carbonate mud. Under the combined action of pressure, geothermal heat, and continued deposition and covering, these organic-rich deposits decomposed into liquid and semi-liquid asphalt, petroleum, natural gas, and so on. They migrated along fissures. When crustal movements occurred, strata developed faults and folds, forming reservoirs for petroleum and natural gas.

Therefore, in strata where organic reefs are well developed, there is often hope for the presence of petroleum and natural gas.

Several major oil fields discovered in the world are closely related to ancient organic reefs. For example, the western slope of Russia's Ural Mountains was originally the site of coastal large ring reefs from the Devonian, Carboniferous, and Permian periods. Within those massive limestone layers hundreds of meters thick, intermittent fossil reef bodies are hidden, containing large amounts of coral, bryozoan, algal, and shell fossils. At the end of the Permian Period, seawater retreated, and the fossils were buried in the strata, later becoming oil and gas fields with extremely rich reserves. Another example: during the Carboniferous and Permian periods in the central United States, numerous paleo-organic reefs also developed, becoming the oil field center of the United States. The currently world-famous Middle East oil fields

are also deposited in Tertiary paleo-organic reefs.

The Devonian Period ended, and the Carboniferous Period began. The Emissary then began storing another energy source for future humans that we call coal. Its raw material is trees, formed through long-term compression.

Coal seam formation requires suitable tree species, giant trees, vast forests, large-scale deposition of wood, swamps, and hundreds of millions of years. Tree growth also requires a long-term stable, warm, and humid climate.

Scientists describe: in Carboniferous forests, trees were huge, with stems growing to 0.3 meters in diameter. Their habit was to occupy riverbanks and swamps, growing in continuous stretches, covering vast areas with dense jungle. The large coal beds with extremely abundant reserves on Earth today were formed by Carboniferous forests. These forests did not live long; they grew fast and had short cycles.

Under normal circumstances, a fallen tree is eroded by bacteria and fungi, which digest and completely decompose it. Dead plants rot quickly. But many woodlands of Carboniferous forests were waterlogged, muddy swamps. When those trees fell and died, they sank into the mire. Without sufficient oxygen for bacteria and fungi to carry out destructive activities, over time they became peat. Such peat could remain buried under the swamp for thousands of years without change. Later, due to river alluviation and geological changes, the peat sank deeper and was buried thicker, becoming a low-grade lignite. After several hundred million years of continuous pressure increase, lignite became bituminous coal.

The compression in this transformation process was enormous: 0.3 meters of bituminous coal was compressed from 6 meters of plant material. Finally, new pressure generated by the movement of surface rocks compressed bituminous coal in some places into anthracite.

Carboniferous forests were distributed across many parts of Earth's land. After 80 million years of relatively stable climate, the accumulated wood was sufficient. As the largest and earliest prosperous green lineage in Earth's history, they completed their mission and exited the historical stage.

The vastness and density of Carboniferous forests can be seen from the thickness of coal seams in China. Some coal seams exceed 120 meters in thickness, equivalent to 2,440 meters of original plant material.

In the Shanxi region of China during the Carboniferous Period, seawater advanced and retreated repeatedly, with land and sea alternating frequently. When the land was generally stable, the environment was humid, the climate warm, and vegetation flourishing. Tall fern plants provided the material basis for coal formation, creating the main coal seams beneath Shanxi.

It is inferred that throughout the Carboniferous Period, the ancient ecological environment within Shanxi, China, was warm and humid, with abundant rainfall. On coastal plains and delta plains, peat swamps and lagoons were well developed, scattered like stars in the sky. The plains were covered with dense primeval forests everywhere.

Toward the end of the Carboniferous Period, large-scale swamp forests appeared widely within Shanxi, China, especially on coastal plains, marine plains, and inland basins, all with towering giant trees. In the peat swamp flora that formed coal, the main groups were lycopods, cordaites, true ferns, seed ferns, and sphenopsids. Fungi and algae in swamp zones and some waterlogged depressions were also well developed. The lycopods at that time were tall trees, among which Lepidodendron and Sigillaria types were most flourishing, with trunks reaching 10 to 20 meters high and diameters up to about 2 meters, occupying the highest layer of the plant community. They perished at the end of the Paleozoic Era.

The biological environment of the Carboniferous Period had the following characteristics:

1. Throughout the Carboniferous Period, the climate was relatively stable, the environment humid, the climate warm, and rainfall abundant.
2. Forest areas were large, trees were huge, with trunks reaching 10 to 20 meters high and diameters up to about 2 meters. Trees grew fast and had short life cycles.
3. Forests mostly grew along riverbanks and in swampy lowlands.

From the first point, the purpose was to have a stable environment suitable for forest tree growth.

From the second point, to store large amounts of high-quality wood rapidly and efficiently for the formation of high-quality coal in the future.

From the third point, the necessary condition for wood buried in strata to become coal later is that it does not rot.

From the above, it can be seen that the Carboniferous Period had a clear purpose: to store high-quality wood stably, massively, rapidly, and efficiently. Hundreds of millions of years later, this wood became high-quality coal. If any one of the above conditions were missing, the formation of good, large quantities of coal would be greatly reduced.

Therefore, I say that the entire Carboniferous Period was designed: the climate and environment were designed; the forest scale, tree species, tree size, and growth speed and cycle were designed; the locations where trees grew were designed.

Why do the Devonian and Carboniferous periods exist? Geologists and paleontologists take them for granted, as if humanity simply deserves this good fortune. Imagine if there were no Devonian and Carboniferous periods in geology, and humanity had no coal or oil. After Watt invented the steam engine, people would naturally use wood as an energy source, but would it be sufficient? Leaving aside the ecological environment, the total amount of coal energy on Earth equals the total amount of trees from 80 million years. Even if we have mined only one percent of total coal resources (in fact, we have exceeded this), it is equivalent to the total growth of trees over 800,000 years. Bear in mind that human civilization history is only 6,000 years, the steam engine was invented just over 100 years ago, and modern civilization was built on the foundation of coal and petroleum energy.

It can be argued that humanity, using only wood as an energy source, would not be

sufficient to transition to the solar and atomic energy age; the coal and petroleum energy age cannot be skipped. Without coal and petroleum—that is, lacking the Devonian and Carboniferous periods—human society would be blocked outside the gates of industrial civilization, wandering in agricultural civilization.

I believe that the purpose of the Devonian and Carboniferous periods was to store energy for humanity. The significance is to prepare large amounts of energy that are easy to find, easy to mine, easy to use, and indispensable, enabling humanity to move from obscurity toward industrial civilization. In terms of timing, before humans were born, trees had already formed coal. We would not have to wait until we needed it. Using 80 million years to accumulate wood so that it would later become coal—the timing was just right. If shorter, we would not have enough coal now; if too long, humans would become dependent on coal and not develop clean energy.

There is another point: the Emissary fully utilized and changed atmospheric composition. Through plant photosynthesis, carbon dioxide was converted into trees and oxygen. Carbon dioxide content in the atmosphere continued to decrease, and free oxygen content continued to increase. This change continued to create conditions for the appearance of higher animals.

Entering the Proterozoic Eon, the Emissary still had many things to do. One of them was forming mineral deposits for future humans. The first step in forming iron ore, uranium ore, copper ore, and so on required an environment with very low atmospheric oxygen content and very high CO_2 content. The environment at that time was exactly like this. If it had been later, oxygen content in the atmosphere would gradually increase and CO_2 content would gradually decrease, which would be unfavorable for the reproduction of mineral-forming bacteria.

The Emissary designed a kind of iron bacteria. This bacterium divides once every 20 minutes, 72 times in 24 hours. One iron bacterium becomes 4.722×10^{18} bacteria in 24 hours. Enzymes are highly efficient catalysts. This enzyme can convert low-valence iron in aqueous solution into rust-colored trivalent iron in the form of tofu curd or cotton floc, which precipitates and becomes iron ore many years later.

Iron ore is very important to humans. It is mainly distributed across several ancient landmasses in the world, such as the Anshan iron deposit in China.

Uranium ore, copper ore, and others were also designed by the Emissary using biological means in the environment of that time.

The Jurassic Period

The Jurassic was the age of dinosaurs. In the sky, on land, and in water, they could be found everywhere on Earth. They had many species, large numbers, and huge body sizes. Why was this so? I have thought of an answer: it was a maximum carrying capacity test of the biosphere, to obtain data for designing the support of humanity. Like crash tests in an experimental factory, or load testing before a new bridge opens to traffic.

Entering the Jurassic Period, reptiles rose, feathered birds appeared, and mammals

were small in number and size, surviving only in burrows. The Emissary began to consider the design of humans: what is the appropriate human body size? How much food is consumed daily? How to reproduce? And so on. What are the values of these data for harmony with the environment? How to achieve harmony with the environment? These data needed to be obtained through experiments.

The Emissary made dinosaurs very large in volume and very numerous in species and quantity. The purpose was to investigate the biosphere's ability to support dinosaurs, and what kind of biosphere would allow them to reach equilibrium, in order to obtain data for designing humans and the biosphere of the human era.

When dinosaurs reached unprecedented prosperity and their volume grew to the maximum, the experimental purpose had been achieved. If they had continued to survive, mammals, which were much smaller, would never have had a chance to rise. Thus, the dinosaurs became extinct. I believe the cause of extinction may have been one of these three situations: ① the time and destructive degree of an extraterrestrial body impact on Earth had been calculated; ② the Emissary went into space and nudged a meteorite toward Earth; ③ biological methods.

The extinction process was also an experimental process, obtaining data for designing the limits of human endurance in the survival environment.

On Horses

Whenever evolutionism or fossils are discussed, spokespeople for evolutionism cannot wait to place the evolutionary pedigree of horses before us. This is because horse fossils are abundant in fossil samples, and the evolutionary route they show is complete and clear, making them the most representative.

Horses belong to the odd-toed ungulates. In the Early Eocene, about 50 million years ago, herbivores living in forests evolved the earliest ancestor of the horse, namely Hyracotherium. First seen in Europe and North America, it was the size of a present-day fox, with slender limbs. Its wrists and ankles did not touch the ground; it walked on its toes. The forefeet had four toes, the hind feet five toes, and each toe had a hoof at the front to reduce friction on flesh, making advance preparation for the evolution of descendants good at running. Its back arched upward, and its head was very small.

By the Oligocene, 35 million years ago, Hyracotherium had evolved into Mesohippus. Their front and hind toes both became three in number, and the toes were wider. Body size increased somewhat, and brain volume reached half that of a modern horse. The back changed from arched to straight.

After the Oligocene, Merychippus appeared. The middle toe on its feet was larger than the side toes. When running, the force concentrated on the thick middle toe, inevitably increasing speed.

In the Late Pliocene, modern horses Equus appeared, tall in stature and fast in running speed. Their middle toe was even more developed, and their backs curved

downward, preparing comfortable riding conditions for the modern humans who would appear.

The evolutionary pedigree of horses is indeed complete and clear: Hyracotherium → Mesohippus → Merychippus → Hipparion → Equus. It seems able to explain the matter.

But fossil records show that: ① the horse species of each period appeared suddenly, and once formed, remained unchanged or changed very little for a long time until extinction; ② the transition between the closest species could not be completed by one or several gene mutations; ③ experts have already published books proving that the evolutionary pedigree of horses was directed.

We thank the Creator for leaving behind large numbers of fossils of various horse species from various periods during the creation of horses. Evolutionists consider this powerful evidence for evolutionism. They are wrong. This is not evidence for evolutionism; rather, it is conclusive evidence refuting evolutionism and establishing creationism.

Fossils show that the evolutionary pedigree of horses was directed, and evolution had a purpose. Before the steam engine was invented, people lacked a means of transportation with speed, endurance, good handling, and comfortable riding. And in nature, there happened to be an animal called the horse that could exactly satisfy this need. Horses are gentle, understanding, fast, enduring, and strong. In addition to the above advantages, their most special feature is the downward-curved back, designed for the comfortable riding of intelligent humans.

I believe that the horse is the most carefully designed work of the Emissary besides humans. It was designed according to data on the external form, height, and weight of intelligent humans in the blueprint. The purpose was to provide humans with a means of transportation that is comfortable to ride, fast, and enduring. If we decipher the horse's genes, I believe there will be strange discoveries.

Facts show that the horse is a good helper to humanity and has made tremendous contributions to human progress. Without horses, social development would have been slower.

2. The Origin of Humans

Origins

About 7 million years ago, the conditions needed for the ultimate goal of evolved organisms—humans—were already in place:

1. The atmosphere was dominated by the stable element nitrogen at 78%, oxygen content reached 21%—neither too high nor too low, just suitable for human life. Carbon dioxide content dropped to about 0.03%. Temperatures were appropriate, water sources were abundant, and the high-altitude ozone layer intercepted harmful

ultraviolet radiation.

2. Various animals, plants, and microorganisms formed a biosphere capable of sustaining human survival, and various mineral deposits had already formed.

3. Basic materials for evolving humans: animals were numerous in species and large in quantity, providing ample room for selection.

4. The natural structure of the solar system: in the outer orbit of Earth there is a planet of huge volume—Jupiter. Its immense gravity absorbs most meteorites, preventing Earth from frequently encountering destructive impacts. This is a necessary condition for the evolution of the first level (human level). That is, without Jupiter, Earth could have large animals and plants, but not humans.

All the conditions needed for the birth of humanity were in place. The Emissary began her highest mission: evolving humans until intelligent humans like us appeared.

Which animal's body should be used to evolve humans? The Emissary summarized the traits of various animals before the Pliocene of the Cenozoic Era, the successes and failures of animal evolution, and based on the human model in its own database, formulated standards: ① mammals, living on land; ② moderate height and weight, broad diet; ③ quadrupedal walking, living in groups; ④ relatively intelligent.

On the Pliocene Earth, land-dwelling mammals were diverse and numerous in species, including primates, odd-toed ungulates, even-toed ungulates, rodents, carnivores, and so on. Which class of animals should be chosen to begin evolving humans? The Emissary chose apes among the primates. Or it can also be thought that designing apes was preparation for evolving humans. Compared with other classes of animals, the advantage of apes lies in their diet: they can eat both plants and meat, with plants as the main food and meat as supplementary food, conforming to the proportional relationship between plant and animal numbers in the biosphere. They walk on four legs, are relatively intelligent, live in groups with good hierarchical systems and kinship relationships, and have moderate physique and temperament. They do not attack actively but can also resist attack.

To say something amusing: if the Emissary had chosen carnivores to begin evolving humans, we would want to bite people as soon as we opened our mouths now. If lagomorphs had been chosen, we would still be chased and hiding from dogs and cats now.

What kind of human to make, and how to make humans? The Emissary has blueprints in its database. The first step is to make apes walk upright, freeing the forelimbs. This is the mark separating humans and apes, and also the benchmark for being human. When did this event occur? On which kind of ape? After years of fierce debate, experts finally accepted molecular evidence and set the time at about 7 million years ago. The latter question has no definite conclusion; a slightly more specific statement is one among gorillas, common chimpanzees, or pygmy chimpanzees (bonobos).

The second step is to gradually enlarge the brain, making apes progressively more intelligent.

The Emissary needed to create some transitional human species in the process of

making humans.

Australopithecus boisei: In 1985, Richard Leakey found a fairly complete robust-type australopithecine skull in deposits about 2.5 million years old on the western shore of Lake Turkana in northern Kenya. This shows that they lived continuously in Africa for at least 1.5 million years. They do not belong to the ancestors of modern humans; they were merely a side branch in the evolutionary process of the family Hominidae (Leakey, 1959; Tobias, 1967).

Homo erectus pekinensis: Peking Man: In 1927, experts discovered large quantities of ancient human fossils in the Zhoukoudian area of Beijing, naming them Homo erectus pekinensis.

Peking Man had a low, flat forehead with the frontal surface sloping backward. The two brow ridges were thick and protruded forward. Brain capacity averaged about 1,075 milliliters. Skull thickness was double that of modern humans, about 10 millimeters. Height was between about 1,560 and 1,570 millimeters.

According to measurements, they lived in Zhoukoudian from as early as 600,000 years ago to 230,000 years ago, totaling 370,000 years. Judging from fossils and living habits, they hardly changed during such a long time. This shows that the Peking Man species remained unchanged (Weidenreich, 1943).

Peking Man was an erectus human, a branch of humanity. The Emissary would no longer transform or evolve him, because Neanderthals of the same period already had a brain capacity of 1,470 milliliters and were the strongest in all aspects. That Peking Man survived 370,000 years in the small Zhoukoudian area is a miracle, but they ultimately shared the fate of extinction with erectus humans worldwide.

Cro-Magnons: Cro-Magnons are also called the Late Homo sapiens stage, or representatives of the New Man stage.

From excavated remains, it can be seen that Cro-Magnons had tall physiques, with an average height of 1.82 meters, brain capacity of 1,590 to 1,751 milliliters, broad faces, and developed lower jaws, almost no different from modern Western and Central European populations.

They had many cultural relics and a fairly advanced culture, summarized as follows:

Stone tools: large numbers of carved points and ground tools shaped like spearheads and harpoons, usable for hunting, fighting beasts, or throwing to catch fish. Some were similar to crossbows. Very smooth, slender bone needles indicate the ability to sew animal skins into clothing.

Ornaments: mainly made by grinding or perforating animal bones, teeth (canines), fish bones, and gastropod shells, presumably for use as necklaces. Some also had beautiful patterns carved on small animal bones, arranged into necklaces and the like.

Artworks: carving nude female figures from animal bones or ivory. Many also used mineral pigments to outline beasts (especially horses, cattle, and deer, most commonly) in reclining or running poses on the walls of their dwelling caves. More often, they painted scenes of groups of people hunting and chasing. Whether in the lines of the drawings or in coloring and shading techniques, they all show that

Cro-Magnons possessed high artistic talent.

Cro-Magnons used natural pigments mixed with animal fat, then painted on cave walls.

Cro-Magnons are our modern intelligent humans; their DNA should be the same as ours.

The Mitochondrial Eve Theory

During the period from 500,000 to 340,000 years ago, many different human species lived throughout the Old World. Besides Neanderthals, there were the Petralona people of Greece, the Arago people of southwestern France, the Broken Hill people of Zambia, and so on. Although their fossil specimens have many differences, they all share two characteristics: more advanced than Homo erectus, for example having larger brains; yet more primitive than Homo sapiens, with thicker skulls and robust structure. Undoubtedly, their position is between Homo erectus and Homo sapiens. Fossil specimens from this period have various anatomical structures.

Why did many different human species emerge in a short time at this position in human evolution? Before this, one human species appeared only about every million years. My explanation is: experimentation, comparison, and selection—and the speed of experimentation accelerated, varieties increased. The purpose was to design excellent intelligent humans as quickly as possible, because the Emissary believed the final goal was very near. The contents of comparison included ability to survive and adapt to the environment, intelligence, and the advancement of manufactured tools. The excellent ones were selected to become the maternal basis for continued evolution.

How did Homo sapiens originate? All data are consistent: Homo erectus → Homo sapiens. But the origin of modern humans like us is a matter of diverse opinions among experts and the most fiercely debated issue in current anthropology. Previously, two different hypotheses were relatively popular.

The first hypothesis, called the Multiregional Evolution Hypothesis, holds that the origin of modern humans was an event involving the entire Old World, and that modern humans appeared wherever there were Homo erectus populations.

The second hypothesis holds that modern humans originated in one geographic region, and that groups of modern intelligent humans migrated and spread from this region to other parts of the Old World, replacing the pre-modern people there.

In the 1980s, paleoanthropologists were still searching for evidence for their theories, braving cold and heat and danger, eating and sleeping outdoors in the field during archaeological work. Meanwhile, molecular geneticists in laboratories with air conditioning and modern facilities proposed another theory: the Mitochondrial Eve theory.

The Mitochondrial Eve theory came from the research results of two laboratories: the laboratory of Douglas Wallace and his colleagues at Emory University, and the

laboratory of Allan Wilson and his colleagues at the University of California, Berkeley. They carefully examined the genetic material deoxyribonucleic acid (DNA) in tiny organelles within cells called mitochondria. When the egg from the mother and the sperm from the father fuse, they become a new embryo. Part of the mitochondria in embryonic cells comes only from the egg; therefore, mitochondrial DNA is inherited only through the maternal line.

Due to some technical reasons, mitochondrial DNA is particularly suitable for tracing evolutionary processes generation by generation. Because DNA is inherited through the maternal line, the tracing process ultimately leads to a single female ancestor. According to the analysis results, modern humans can trace their ancestors to a woman who lived in Africa about 150,000 years ago (Cann et al., 1987; Leakey, 1996).

This analysis not only indicates that modern humans originated in Africa, but also reveals no evidence of hybridization between modern humans and pre-modern populations. To date, analysis of mitochondrial DNA from living populations shows that the results are identical to one another, pointing to a common, relatively recent origin. If genetic mixing had ever occurred between modern humans and ancient Homo sapiens, some people would have mitochondrial DNA very different from modern humans, showing ancient origins. To date, more than 4,000 people from around the world have been tested, and no such ancient mitochondrial DNA has been found.

The origins of all mitochondrial DNA types in tested modern populations are in relatively recent times. This means that modern newcomers completely replaced ancient populations. This process began in Africa 150,000 years ago and then spread to Eurasia over the following 100,000 years.

Wilson and his colleagues wrote that their data show "the transition from archaic to modern types of Homo sapiens first occurred in Africa about 100,000 to 140,000 years ago, and all people today are descendants of that group." Later research pushed the date slightly forward. Wallace and his colleagues supported the Berkeley group's conclusion.

Because mitochondrial DNA is inherited through the maternal line, the tracing process ultimately leads to a single female ancestor. But this does not mean that a single male ancestor did not exist and combine with her at the same time. It is just that scientists have not yet found a method to accurately trace the male progenitor. If a path for tracing exists, the conclusion should be that the male and female ancestors lived at the same time and in the same place, with the two lines intersecting at one point.

Not only modern humans, but if Neanderthals had survived to the present day, extracting their mitochondrial DNA for analysis would yield the same conclusion. From the perspective of this book, I support the Mitochondrial Eve theory and the single-origin theory of humans. They can mutually corroborate the Emissary's creation of humans.

Neanderthals

From at least 300,000 years ago, groups of robust people with brain capacity reaching modern human levels lived in Europe and western Asia. We call them Neanderthals. They had low, flat foreheads, skulls in a semi-domed shape, prominent brow ridges, and large nasal and orbital regions. Their mandibles were thick and robust, the chin not yet protruding, slightly receding. Their teeth were somewhat larger than modern humans'. Their bodies and limbs were robust in structure, but functioned the same as modern humans'. Neanderthal males were about 1.60 meters tall, females about 1.50 meters.

Neanderthals lived a semi-sedentary life, used stone tools, and preferred to live in caves on ridges, both sheltering from wind, rain, and cold, and observing beast activity below the ridge. They conducted funerals for the dead, sprinkling red ochre powder on the deceased.

Neanderthals' robust bodies and thick skin were well adapted to the severe cold climate of Europe at that time. They survived, and their populations grew and developed. They could be found throughout the European continent and adjacent North Africa, Mediterranean coasts, and western Asia.

During the 150,000 years from 300,000 to 150,000 years ago, Neanderthals were the masters of Earth. In population numbers, adaptability, creativity, culture, intelligence, and society, Neanderthals were a qualitative improvement over all previous human species. Neanderthals were a successful human species designed by the Emissary. It is possible that at a certain period, the Emissary once regarded Neanderthals as the final humans, placing hope in Neanderthals to complete the mission of the human cycle.

But as time passed, Neanderthals stopped advancing. After at least 150,000 years of survival and development, what was their condition? Highest technology: stone points. Highest civilization: conducting funerals for the dead, sprinkling red ochre powder on the deceased. Living conditions: dwelling in caves, surviving by hunting. (Modern humans have also existed for about 150,000 years since their birth, which cannot be compared.)

150,000 years ago, the Emissary became disappointed with Neanderthals. She wanted to create a species smarter than Neanderthals. Thus, modern humans were born.

Chapter 6 The Birth of Humanity

1. The Birth of Modern Humans

The Human Eden

The biblical Eden has the Creator, Adam, Eve, and the serpent. The Human Eden also has them: the Emissary, pre-sapiens Adam and Eve, and helical DNA.

By this time, the most advanced and highest-intelligence Neanderthals had already been born and developing for hundreds of thousands of years. Their limited intelligence kept them at the stage of using stone tools, hunting, dwelling in caves, and having no art.

This is not what the Emissary hoped for or wanted. This level of intelligence falls far short of the Emissary's standards, causing disappointment. Neanderthals do not qualify as the final humans; they cannot comprehend the true meaning of human existence. Thus, the Emissary must continue to evolve humans, designing intelligent humans who meet her standards, hoping for success.

Neanderthals are characterized by robust physiques and limbs, but not high intelligence. Their robust bodies and limbs give them great advantages in fighting animals and obtaining food. But this advantage, on the contrary, has become an adverse factor for their social development and progress: in gathering and hunting activities, they use physical strength rather than intelligence; they do not easily form social cooperation mechanisms; conflicts within groups and between tribes easily cause death and injury.

Therefore, in redesigning intelligent humans, the Emissary must improve at least two aspects: increase intelligence; reduce body weight and refine bones.

Compared with Neanderthals, what kind of new intelligent humans does the Emissary intend to design?

1. Brain volume can no longer increase; it has reached the limit allowed by childbirth. To raise intelligence, evolution can only be achieved through brain structure and efficiency.

2. Change from a clumsy form to a flexible form. In gathering, hunting, and other activities, besides using physical strength, intelligence must be fully utilized, along with unity and cooperation.

3. Have a strong curiosity and desire to explore nature, be able to adapt to the environment, utilize the material environment, manufacture and use tools, and advance society toward civilization.

The Birth of Modern Humans

About 100,000-plus years ago, the ancestors of our modern humans, "Adam" and "Eve," were born. They were conceived and delivered by pre-sapiens humans. Before

or at the time of egg fertilization, the Emissary altered the genes of the pre-sapiens egg, sperm, or fertilized egg. The altered genes are the genes of us modern humans. Whether the transition from pre-sapiens to modern humans was accomplished in one generation or multiple generations of gene modification cannot be determined. If it was completed over multiple generations, it should still have been concentrated within a short period of time.

This is a great and sacred moment—the birth of humanity in the true sense. Humanity's journey begins from this point.

The ancestors of modern humans were delivered by pre-sapiens humans; they should also have been nursed and raised by them, and should have inherited their minds, culture, and survival skills, developing upon this inheritance.

As "Adam" and "Eve" grew, they obviously showed themselves to be different. Their bodies were slender, and they were often teased and bullied by their peers. But their flexible bodies were unmatched by their companions, and their intelligence stood out like a crane among chickens.

The parents of "Adam" and "Eve" must have thought they had done something bad and were punished by the gods, giving birth to strange offspring. How could they know that they were bearing a sacred mission?

"Adam" and "Eve" were reproductively isolated from pre-sapiens humans. They had their own offspring and separated from the pre-sapiens population. They accepted the minds, culture, and survival skills of pre-sapiens humans, and then developed and improved them according to their own wisdom and physical characteristics.

From the earliest ancient apes to modern humans, not only did the body evolve step by step, but minds, culture, and survival skills were also passed down and improved generation after generation, without interruption, up to today's civilization.

Neanderthals had lived in Europe and western Asia from 300,000 years ago and became extinct about 27,000 years ago. Their time of origin must have been before 300,000 years ago, so their survival time from origin to extinction was at least 273,000 years. According to scientific research, the separation time between Neanderthal mitochondrial DNA and modern human mitochondrial DNA was about 690,000 to 550,000 years ago. This indicates that the origin time of Neanderthals may have been even earlier, and their time on Earth longer (Krings et al., 1997; Ovchinnikov et al., 2000).

Modern humans set out from Africa about 120,000 years ago, passed through the Middle East to reach southeastern Europe and western Asia, and finally arrived in western Europe about 40,000 years ago. Modern humans and Neanderthals met in western Europe. Recent research shows that they coexisted in western Europe for at least 10,000 years, but no evidence of intermarriage has been found. I believe that modern humans and Neanderthals were reproductively isolated. Modern humans gradually replaced Neanderthals in their old European homeland.

Years ago, I read an essay in which the author used beautiful words to depict the scene of modern humans and Neanderthals living together tens of thousands of years

ago, cherishing and regretting that Neanderthals did not survive to the present, and feeling sad and lonely that modern humans had lost their only brother who could have walked alongside them.

Suppose Neanderthals had survived to the present day with intelligence no less than modern humans'. What kind of society would it be? It would certainly be one of constant war, you fighting me, me fighting you, with a 50% chance that the exterminated side would be modern humans.

Archaeological facts are clear: violence and war were the main reasons Neanderthals left the historical stage, and the protagonists were the ancestors of modern humans. In one-on-one combat, modern humans were no match for Neanderthals. With Neanderthal strength and robustness, one person could deal with several modern humans at the same time. Europe's cold climate favored Neanderthals rather than modern humans. Neanderthals had lived in Europe for hundreds of thousands of years, enjoying the advantages of favorable timing and location. Why did modern humans ultimately win? It was a matter of intelligence. Modern humans had higher intelligence than Neanderthals. Modern humans could effectively organize tribal groups and employ tactics and stratagems, such as destroying Neanderthal survival resources, ambushing, sneak attacks, and luring the tiger away from the mountain. Neanderthals had strong individual combat power but poor ability in coordinated combat and tactical application.

Another possibility for the extinction of Neanderthals: it was done by the Emissary, and the method used was of course biological.

Contemporary people should be proud of our ancestors' actions. It proves that modern humans are the strongest, that modern humans won in competition, and that we are qualified to have survived to the present. We should also be grateful that the coexistence of two reproductively isolated human species, regardless of intelligence gaps, is a huge obstacle to social progress. The difficulty of solving this problem increases with social progress and the passage of time. Yet this huge social problem of modern humans was completely and thoroughly solved by our ancestors 30,000 to 40,000 years ago during humanity's dim period, and was not left for us to face today. It would have been enough to cause human society to stagnate.

After leaving their birthplace, modern humans eliminated previous human species and occupied most of the Old World. About 30,000 years ago, Neanderthals became extinct, and all other transitional human species also became extinct. This was the Emissary's arrangement and also the result of our distant ancestors' efforts. Only one final human species remained on Earth—modern intelligent humans.

Modern humans became the masters of Earth, displaying extraordinary wisdom and art. They are hardworking and moral, with a very strong spirit of unity and cooperation. From two people to a group, a tribe, a nation, the society they form continuously advances in technology and civilization. This is what the Emissary hoped for and expected. Her goal has been achieved. She has designated modern humans as the final humans. From then on, after 3.8 billion years, the evolutionary process from bacteria to modern humans is complete. The baton of life's propagation

has been passed to modern humans on Earth in the solar system of the Milky Way galaxy. She believes that modern humans can continue to pass the baton of life's propagation onward.

Cro-Magnons stood at the entrance of Lascaux, proudly pointing at the mountains, waters, roads, and herds of animals outside the cave. They knew they were born noble and extraordinary, and that no obstacle could block their forward march. Following this path, humanity's future is bright!

2. Life and Philosophy

Molecular Biological Research

Scientists studying various precision organs at the gene and protein molecular level have discovered a universal phenomenon: the evolutionary process takes old things, patches them up, and creates new things (Wade, 1998).

Researchers discovered that genes controlling eye development are used again and again throughout the animal kingdom. In an astonishing study, scientists discovered that the same gene appears in two kinds of animals, controlling both the development of the colorful compound eyes of fruit flies and the development of human eyes. These two kinds of eyes were previously regarded as typical examples of two independently evolved complex structures (Halder et al., 1995; Gehring, 1996).

Just as I was writing this section, news came that scientists have basically completed the work of deciphering the mouse genome. Mice, which separated from human ancestors 75 million years ago, have 99% of their genes findable as corresponding genes in the human genome (Waterston et al., 2002).

I believe that the probability of these situations occurring under natural conditions is virtually nil.

The British astronomer Fred Hoyle, in order to illustrate the extremely low probability of life naturally forming from a primordial soup, vividly put it this way: "A whirlwind blowing through a junkyard filled with various scraps of metal suddenly assembles a Boeing 747." However, there is now a new discovery: after the above event occurred on Earth, on Mars—which is completely isolated from Earth and has a very different natural environment—a whirlwind blowing through a junkyard filled with various scraps of metal also assembled a Boeing airplane. This is my supplementary analogy to illustrate something completely impossible (Hoyle, 1981).

My view is very clear: the Emissary is a master at manipulating genes. The raw materials she uses are these molecules, enzymes, genes, and so on. Her common techniques are copying, borrowing, cutting, and modifying, and so on. Through various combinations of genes, she creates different organs and new species. We Earth

humans have now entered the threshold of these technologies and can initially and simply apply them. Within the next few hundred years, we will master most of them.

In creating mice, 99% of their genes are the same as human genes. One of the purposes is to create experimental substitutes that take punishment for humans.

The mechanism for creating new things is changing the uses of genes and enzymes. Therefore, we will discover that "there is nothing new inside organisms." Under Intelligent Evolution, this situation inside organisms is not strange; it would be strange if it weren't like this.

For example, the computers we now use can do simple things like typing, draw complex graphics, produce sound, and so on. To accomplish these tasks requires only operating a few dozen keys on the keyboard. It is not that typing is one operating system, drawing and sound production each have their own operating systems. It is simply that the sequential combinations of these few dozen keys can execute different tasks.

Research at the molecular level is a field that has only just begun. The "surprises" discovered are only the tip of the iceberg. As science and technology advance, research at the biological molecular level will proceed in depth. There will be more and more new discoveries. Natural evolutionists will increasingly feel that things are "strange," while Intelligent Evolutionists will increasingly feel that things are "reasonable." The scales of truth gradually tilt toward intelligent evolution and away from natural evolution.

My understanding of organisms is: programs in nature. It is just that our current programs are in computers, while the programs of the biosphere are in nature. Various organisms execute their respective DNA programs. Program upgrading is biological evolution; compatibility is small changes within a species; gene mutations are program malfunctions that need to be patched or abandoned.

The above examples are only a few in the vast pedigree of biological evolution. When we carefully and meticulously study the entire pedigree, we will discover that everywhere there are works of Intelligent Evolution.

The great pedigree of biological evolution on Earth from prokaryotes to modern humans is a straight line with a clear purpose. Every step in the pedigree has a clear purpose and serves as the condition for the next step.

Prokaryotes → eukaryotes → soft-bodied organisms → vertebrates → amphibians → reptiles → mammals → humans.

Early Earth had no life. The first life needed to survive in the environment at that time and also transform the environment to create conditions for life's upward progress. Only organisms like cyanobacteria could exactly meet these conditions. Thus, prokaryotes dominated by cyanobacteria appeared.

The appearance of cyanobacteria improved both the lithosphere and the atmosphere. Large-scale carbonate deposition not only changed the face of the land but also affected tectonic movements. Earth's environment underwent qualitative changes, creating conditions for the origin of eukaryotes and the development of higher organisms.

With the environment transformed by cyanobacteria, eukaryotic cells could appear. Cells are the basic units that constitute plants and animals; this step is certainly indispensable. After single cells appeared, multicellular organisms followed. Multicellularity was another great advance in the level of biological organization. This event laid the foundation for the emergence and development of all higher life on Earth.

After multicellularity, organisms were still too small in volume. To develop toward larger body sizes, soft-bodied organisms appeared.

Humans cannot live in water; animals must go ashore and need a skeleton for support. If they went ashore first and then created a skeleton, it would be a detour. The appearance of vertebrate fish was timely, preparing conditions for the next step.

The appearance of amphibians allowed animals to go ashore. These animals that could live both in water and on shore brought vitality to the land. Amphibians are transitional animals and the condition for the appearance of reptiles.

The transition from amphibians to reptiles was natural. Animals appeared everywhere on the continents, enriching Earth's biosphere and laying the foundation for the appearance of mammals.

Humans cannot be oviparous, because egg theft, swapping, abandonment, and abuse are problems not easily solved by family and society. The transition from reptiles to mammals is an important step in the birth of humans. In particular, the appearance of primates provided the maternal basis for the birth of humans.

Intelligent humans are born. Are they the end point of biological evolution? Is there a purpose? My answer is: they are the end point of evolution, and also the starting point of a new round of evolution. There is a purpose: the purpose is to produce consciousness, which is the condition for a new round of evolved organisms.

About the Emissary

The Emissary is our Creator and has designed everything for our lives and social progress. Earth humans should thank her, but that is all. Because this is her responsibility, and also our future mission. Just as parents give birth to us and we also raise our children, it is all a kind of responsibility. The difference is that Earth humans have never seen their "parents," and we may also never see our "children."

What does the Emissary look like? How big is it? How advanced is its intelligent system? We do not know any of these things. I believe we have no need to seek to know these. Its physique may be very small, for example only the size of a soccer ball; they may also be a huge fleet; it may have a very ordinary appearance, and when we meet it, we would regard it as something from Earth. We also cannot expect that one day the Emissary will suddenly appear and announce to Earth humans that she is the Creator of humanity. Because this would benefit no one.

The Emissary is not omnipotent either. Regard it as our human beings and our robots, constrained by technical conditions and the natural environment in biological

activities. Evolving organisms and transforming the environment proceed through experimentation → improvement → re-experimentation → re-improvement.

The Emissary is merely a professional machine for conducting biological activities, or a semi-biological semi-machine. They rarely have the function of directly exchanging thoughts and communicating with humans. For example, a Mars probe's mission on Mars is exploration. When a "Martian" meets it and asks: Where are you from? What are you here to do? The probe cannot answer.

The Emissary's communication with humans is conducted in "biological language." The method is: after the Emissary carries out a certain biological action, it then checks and tests human reactions, and its program makes an assessment. For example, SARS, AIDS, and so on—the Emissary can detect whether there is immunity in the human body and the length of time to acquire immunity, thereby assessing the level of human technology and adjusting subsequent biological activities.

Technical Methods of Creation

Although we have not seen the Emissary's tools or its methods of creation, we can examine the traces of the origin and evolutionary process of life on Earth, connect them with current biotechnological means used by humans and predicted future advanced technologies, and thereby infer the Emissary's methods and ways of creating things. It can be thought that whatever our technology and our future technology are like, its technology is like that.

Regarding the origin of life on Earth, I have always believed that bacteria are the earliest and most basic unit of life on Earth. There is no earlier life or more basic unit of life than bacteria. There is no natural chemical evolutionary process. This is also indicated by fossil evidence.

Just as there are now two viewpoints (extraterrestrial and autochthonous origins), I also have two viewpoints: ① brought by the Emissary; ② manufactured by the Emissary using Earth's materials. Regarding the first point, bacteria have super-strong vitality and ability to adapt to the environment. Methods for long-term preservation are easily achievable. The Emissary could very possibly have brought bacteria, which quickly adapted to Earth's environment, surviving and reproducing. Regarding the second point, the Emissary has the ability to manufacture bacteria. She has the technology and equipment. According to Earth's environmental conditions at that time, she used Earth's materials to manufacture bacteria that could adapt to the environment and change it.

Whether single cells and plant and animal cells and embryos were brought, I believe: if they could be brought, they were brought; if not, they were manufactured on Earth.

With the most basic life—bacteria—the production of life higher than bacteria becomes relatively easier. What technology did the Emissary use to evolve organisms? We can speculate.

Current cloning technology should be the most primitive technology. It merely

copies an organism once over without creating a new species—that is, without altering the organism's genes. The Emissary can create new species and evolve organisms, meaning she can alter organisms' genes and manufacture needed species. The technical methods are: copying, borrowing, splicing, cutting, and so on of DNA, redesigning and altering genes on the basis of the original organism. The offspring produced by this organism are the new species the Emissary desires.

Asexual reproduction, plants: the Emissary takes out one of its cells, alters the genes within the cell, and the cell reproduces and grows. The new species is born.

Animals and humans: alter the genes of the fertilized egg cell or the sperm and egg cells before fertilization, then implant the altered fertilized egg cell back into the original species' body. The new species is born, whether oviparous or viviparous.

The tools and methods the Emissary uses to alter genes should be very advanced, possibly surpassing the stage of relying on laboratory equipment and tools. For example, the Emissary designs DNA in a computer, locks onto a group of organisms without touching them, and sends out information. The sent information can control the genes of fertilized eggs about to form within the organisms, causing them to change toward the designed DNA. In this way, the Emissary can alter species and evolve organisms from Earth's orbital space.

Methods of Evolving Species

Gradualists believe that between two evolved species there are many gradually changing transitional forms. The Emissary does not need very fine gradually changing transitional forms to evolve organisms; or, the gradually changing transitional forms have already been completed in the "laboratory." The organisms she releases into nature are already finalized and have certain adaptive capabilities, able to survive and reproduce in the biosphere. Things like half a wing or an eye with half function do not exist. If such semi-finished products appear, the Emissary will destroy them and will not release them into nature.

Although very fine transitional forms are not needed, and the Emissary's technology is very advanced, organisms still cannot be evolved with large leaps. Evolving organisms must still proceed step by step in an orderly manner, following the Biological Tower Law. For example, evolving directly from fish to reptiles while skipping amphibians; or from reptiles directly to modern birds while skipping primitive birds, is also not possible. Reasons: ① the original organism (egg) cannot withstand such large evolutionary leaps, causing the new species to fail to be produced; ② technology does not support it; ③ if this is done, the leap is too large, and the biosphere does not support the new species' survival. The new species would quickly die due to lack of material conditions for survival. Even from fish to mature amphibians, or amphibians to reptiles, it must proceed step by step, evolving while adapting to the environment, and changing the environment while evolving. The emergence of new species can survive in the original biosphere while also changing and developing the biosphere.

Looking at the entire course of the origin and evolution of life on Earth, its span is as long as 3.8 billion years. During this time there were several major explosions and extinctions of life. Can the Emissary and Life Eggs have such a long "lifespan"? After studying the course of the origin and evolution of life on Earth and the laws of life's explosions and extinctions, I believe this: the Emissaries came in batches, conducting the relay of life's biological evolution on Earth. The relay runners may come from one place, or they may come from different planets. They all follow the Biological Tower Law, conducting life activities on Earth by level according to natural conditions.

The Purpose of Creation

To originate life on Earth, cause life to develop from lower to higher levels, and biological species from few to diverse, preparing everything for the appearance of humans: a biosphere, energy, mineral deposits, society, and so on, and ultimately giving birth to humans—intelligent humans like us.

Intelligent Evolution's Views on Several Current Popular Theories

Macroevolution, Microevolution, and Natural Selection

Macroevolution across species is Intelligent Evolution. Microevolution within species is a property endowed to organisms by Intelligent Evolution. Natural selection operates within the scope of microevolution.

Molecular Clock

It does not exist, or it is one of the properties endowed by Intelligent Evolution.

Punctuated Equilibrium

Niles Eldredge and Stephen Jay Gould believe that paleontological evidence shows that new groups appear "suddenly." There are not large numbers of intermediate types in the fossil record, and there is no evidence of a gradual, smooth evolutionary process. New species appear suddenly, followed by long periods of evolutionary stasis, until another rapid speciation event. In other words, the evolutionary process seems to be jump, stasis, then jump again, until extinction.

The "Punctuated Equilibrium" model of speciation is:

1. New species form through divergence within populations.
2. New species formation is rapid and jump-like.
3. The speciation process initially involves only a few individuals within the population.
4. Large mutations, genetic drift, and other contingent factors play important roles in the speciation process.

The Intelligent Evolution model of speciation is basically the same as the above four points. The fourth point involves the mechanism of speciation. I believe that Intelligent Evolution causes organisms to undergo "large mutations, genetic drift," and "peripheral areas" are the Emissary's "laboratories" (Eldredge & Gould, 1972).

Neutral Theory

The Japanese scientist Motoo Kimura proposed the famous "Neutral Theory." Its

core is the belief that most molecular mutations contributing to the genetic structure and evolution of biological populations are neutral or near-neutral in terms of natural selection, so natural selection does not play a screening role for these mutations. Neutral mutations produce offspring through generation-by-generation random drift, or they become fixed in the population and occupy a certain proportion, or they disappear. The genetic diversity within biological populations, such as protein (enzyme) and DNA polymorphisms, is produced through the random drift of such neutral or near-neutral mutations.

Neutral Theory does not contradict Intelligent Evolution, and is related to Intelligent Evolution (Kimura, 1968, 1983).

Consciousness, Life, and Matter

I define humans as the source of consciousness, consciousness and carrier. It seems to say that consciousness is software and the human is hardware, and that consciousness can enter and leave the human body to exist independently. But the humans and consciousness we know have never been separated, have they? That humans and consciousness cannot be separated is a narrow view of consciousness. Now we must look at this problem from another height—the height of the universe. From the perspective of cosmic humans, we must re-recognize humans, consciousness, and the universe.

Human consciousness arises naturally with human progress and individual growth, formed when people explore nature. But why produce humans? Humans are produced to explore nature, understand the universe, and ultimately complete the mission. But what does this depend on? It depends on consciousness. Where does consciousness come from? Who can produce our such complex consciousness? Robots cannot; they can only be loaded with and apply consciousness. Humans can produce it, and the purpose of producing humans is to produce consciousness. Humans are produced in order to produce consciousness; humans are merely the source and carrier of consciousness. Consciousness needs this carrier of humans to exist. Thus consciousness naturally arises as humans grow; this is a predetermined matter. This consciousness is cosmic consciousness.

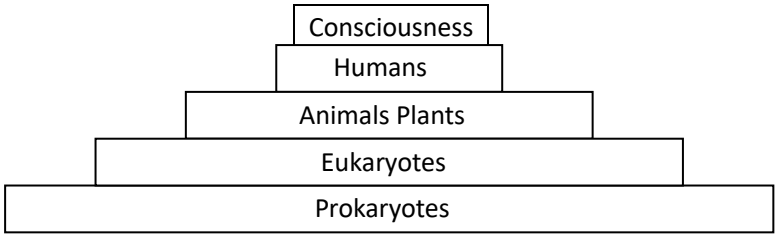


Figure 6-1 The Emergence of Consciousness

Human cognition gradually expands outward with the increase of knowledge. The expansion of cognition of the material world proceeds: land, Earth, solar system, Milky Way, universe, and now there are also parallel universes. For humans: family, clan, tribe, race, nation, Earth humans.

Although this book reveals the origin and future of Earth humans, its significance does not lie in this. The significance of this book lies in opening a door for redefining and understanding humans—a door of light—raising the concept of humanity from Earth humans to cosmic humans. We stand at a new height to understand humans and the universe.

About Robots (Artificial Intelligence), it requires far fewer survival conditions than humans, and its lifespan can be unlimited. They could completely leave humans behind, establishing bases on the Moon, Mars, and other planets, mining minerals, conducting industrial production, and replicating robots. In this way, within one human time cycle, they could occupy the entire universe, just as bacteria reproduce to occupy Earth.

But this is not the case; we do not see this scenario. This is because artificial intelligence does not possess pioneering thinking, has no ability for intellectual exploration, cannot respond to unexpected environments, and cannot discover Newton's laws of motion. Lacking human support, the fate of robot groups would inevitably be gradual decline until extinction. Robots must depend on human consciousness for existence, while humans rely on robots' survival advantages to explore the universe and propagate life.

The laws of matter and life tell us that they operate in spiral cycles, and while small cycles are running they are also running medium cycles, and while medium cycles are running they are also running large cycles... Large rings encircle countless medium rings, and medium rings encircle countless small rings. Every inner-circle cycle is not simple repetition, but a process of accumulation from quantitative change to qualitative change. That is, outer cycles have their footprints, and people's every moment is at a point on the small, medium, and large cycles.

For example, for humans, our birth, life, and death are a small cycle, continued by our children and descendants. And the footprints of ancestors, us, children, and descendants form a medium cycle—this is the continuation and progress of society. Through the efforts of generation after generation of humans, the large cycle will certainly be completed—extraterrestrial reproduction of life; and there may be even larger cycles to form.

For star systems, the origin, operation, decline, and death of a star are the inner cycle; the explosion, maturation, expansion, or contraction of the universe are the outer cycle.

The evolutionary law of star systems is: origin → operation → decline → explosive death. The death of certain stars is not the end of humanity. There are still

hundreds of millions of star systems in the universe that are originating and operating; humans survive and reproduce within their cycles.

I believe that life and consciousness are also like this in the evolution of the universe. The universe explodes and originates → matures → expands or contracts forever. This is the evolutionary law of the universe; life and consciousness endure within its evolution.

I believe that the world and universe are composed of consciousness, life, and matter. Consciousness, life, and matter are called the Three States of the Universe. They can coexist and transform. Consciousness recognizes and controls matter; matter is the foundation of life; life produces consciousness.

Specifically in this book, human consciousness is loaded into intelligent machines. At this moment, even if all human flesh in the universe perishes, human consciousness remains, and it can recreate life and create humans.

Without consciousness, matter (the universe) has no meaning. Only with the existence of consciousness does matter (the universe) have meaning.

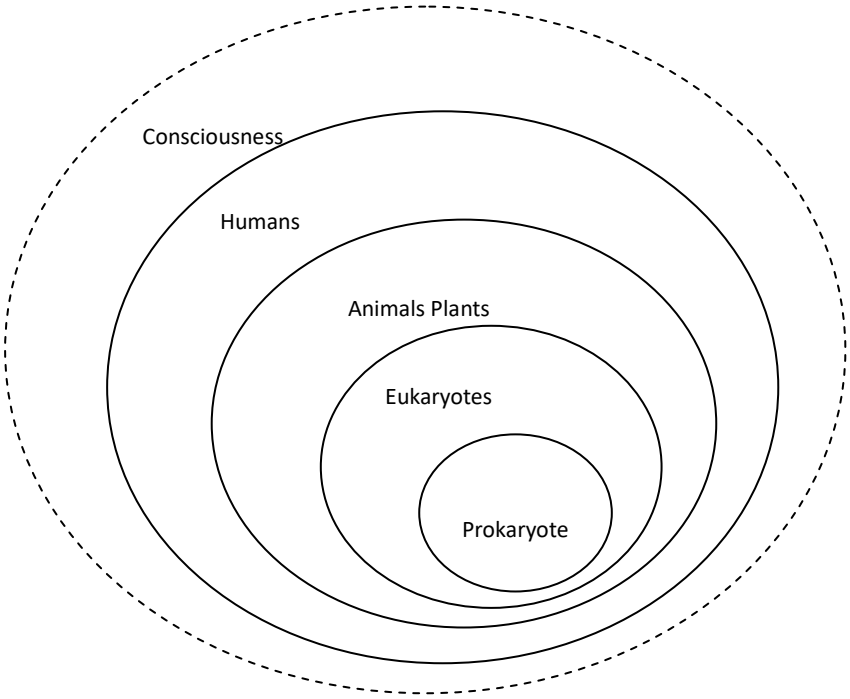
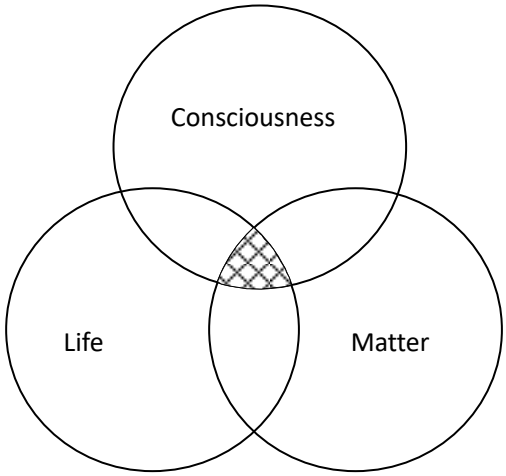


Figure 6-2 Composition of the Universe: Consciousness, Life, Matter
The circle represents matter



A Figure 6-3 Three States of the Universe:
The Overlapping Area Constitutes the Cosmic World

Regarding the universe, scientists believe that the opening of the universe was very accidental. If the physical constants at the initial moment of the Big Bang had been slightly different, there might have been no life. The opening of the universe, a universe suitable for life, is an event with extremely small probability; the existence of life is extremely accidental.

But I do not think so. I believe that the production of life is inevitable. No matter how small its probability, as long as universes are continuously opening, and the physical constants at the initial moment of each Big Bang are different, a universe suitable for life will inevitably be born. It is a 100% event. And universes beyond this have no meaning: no matter how magnificent the universe, how long the time, how great the number and probability, a universe without cognition does not exist. We would not have such a perception: humans waited for a very, very long time, eternally, and finally it is our turn to enter the stage.

If scientists theoretically prove that many other universes (parallel universes) exist before, behind, left, and right, even if they do not possess conditions for producing life (i.e., meaningless universes), because they are cognized by us, and human cognitive horizons have expanded another circle, they thereby become part of our living universe and thus have meaning.

Conditions can be even broader. We are now discussing the topic of lifeless universes and the topic of universes; it already has meaning. Because humans are conscious of it.

Earthly life is the result of extraterrestrial intelligence. Earth humans will also continue life on other planets in this way. In such continuous cycles, life and

consciousness endure forever in the universe.

If this is so, this book only reveals the origin and destination of Earthly life. Life in the universe cycles continuously, but there should ultimately be a beginning and an end. Especially since the Big Bang theory holds that the universe has a beginning and an end, life in the universe should not be an exception. These are not within the scope of this book's exploration. Perhaps life, like the universe, is unknown and unexplainable before its beginning.

I believe that humans can escape the decline and death of stars, consciousness can transcend the explosion and end of the universe, and life survives in the great cycle of the universe.

Humanity is beautiful, the world is beautiful, the universe is beautiful. People alive have reason to live and work well; the souls of the deceased rest in peace; those about to depart have no regrets. Everyone's efforts: merely surviving, even if only a single smile, are contributions to humanity. Because survival is the reserve force for the development of human society and support for human progress. In short, all people's efforts, all achievements obtained, "the crystallization of all ages, all faith, all inspiration, all light of human genius," "the temple of all human achievements" are all extremely meaningful. They all have played a role. Because of all this, Earth humans will receive rich rewards.

Finally, when we have revealed most of the mysteries, we will discover that consciousness, life, and matter are so harmonious and perfect, like heaven, and humans live right within it.

Postscript

My journey of exploration began with thinking about the future of humanity. Why did this idea arise? At that time, I was young, my mind unwilling to remain idle, and I enjoyed thinking about problems. I pondered the question of humanity's future for more than ten years, persisting all along.

I was always thinking about one question: what is humanity's future? Humanity must have a future, just as each of us individually has a future. Most people are born and grow up, marry and have children, grow old and pass away normally. After death, the world in which our children participate continues to operate normally. I often compared this kind of life change to humanity; humanity should not just survive endlessly without change.

Theories such as "leaving Earth, extraterrestrial migration," "before Earth is destroyed, humans have already migrated to other planets," and "Earth humans jump from this planet to that planet" rely on the cumulative results of technology; humanity itself does not change. Before humanity finds a way out, these are all empty words and falsehoods fabricated by scientists, without any scientific basis, violating scientific principles, treating science fiction as science. But they belong to well-intentioned lies, and we have no choice but to accept and believe them. Humans on a given planet cannot exist forever; if they could, it would violate natural laws.

On the question of the origin of life, the most avant-garde idea in materials and literature is: humans can propagate and reproduce primitive life on other planets, and primitive life on Earth (bacteria) was propagated from other planets. But the thinking stops here and does not go further. Moreover, these experts and scholars all believe that life beyond this level evolved naturally, and external forces have not and should not disturb its natural course.

The idea of propagating and reproducing life on other planets has long existed. Why did I, after having this idea, reach more advanced conclusions than others? It is because I thoroughly integrated this idea with humanity and humanity's future, thinking deeply. My thinking did not stop at merely reproducing bacteria on other planets; what follows is continuing to evolve organisms until intelligent beings are created. In writing, I conducted deep reflection on human behavior.

After completing the writing on extraterrestrial origination of life and biological evolution, I had essentially created a framework. Looking back again at the entire process of the origin of life on Earth and biological evolution up to humans, I only needed to feed data into this framework, and life's events on Earth could be well explained. What I did was collect and analyze data, then write.

Time has entered the era when Earth humans have the ability to replicate themselves. The origin and evolution of life are explained by the theory of natural selection. This theory of natural evolution, *On the Origin of Species,* published by the British naturalist Charles Darwin in 1859, has been continuously supplemented and refined by his followers to the present day into a "very scientific" theory that

dominates biology. Moreover, it extends beyond biology to influence people's thinking in other fields and guide their decision-making behavior (Darwin, 1859).

In this atmosphere, the British philosopher Bertrand Russell felt pessimistic and despairing about humanity's future. He wrote: "...The crystallization of all ages, all faith, all inspiration, all light of human genius, are all destined to be destroyed with the collapse of the solar system. The temple of all human achievements will inevitably be buried in the ruins of the collapsing universe, so certain that any philosophy denying them has no hope of success..." (Russell, 1927).

People's thinking is constrained by the theory of natural selection, unable to go beyond the category of direct human-body migration.

Now, countries around the world have enacted laws prohibiting human cloning, restricting cloned animals, banning the planting of genetically modified crops, and prohibiting related experiments.

Under the influence of the theory of natural selection, humanity has stepped onto a wrong path. This road is dark, growing narrower and narrower, until finally cliffs and precipices block our way, and humanity is doomed to eternal perdition.

Fortunately, this will not happen, because we humans have brains and can think. From historical experience, humanity's road curves forward. Wrong theories may have their day, but they will not last; ultimately, truth always returns.

What I am doing is to reclaim human dignity and establish the concept that humans must dominate and design the organisms on our planet. We are indeed the final product of a predetermined process, and humanity holds a special place in the universe.

I also want to tell Bertrand Russell and all people: as far as I understand humanity, humanity's future is happy and beautiful, and no words of praise would be excessive.

We should shoulder the responsibilities humanity must bear, complete the mission of Earth humans, and sow the seeds of human life with wisdom and achievement. We should not cower on Earth, expecting miracles of nature creating life on some other planet, letting nature decide humanity's life and death in the universe while humanity does nothing. Science will prove that nature cannot create or evolve life. Our expectations will come to naught. The task of creation must still be completed by humans.

Regarding biological evolution, it is the foundation of the theory of evolution and a commonly used weapon to attack creationism. Readers can see that this text holds a creationist viewpoint, but its theory is also built upon the foundation of biological evolution. This notion should be changed: biological evolution supports evolutionism and opposes creationism; biological evolution belongs exclusively to evolutionism.

Biological evolution and homology have been scientifically verified. The fundamental difference between this book's view of biological evolution and the theory of evolution lies in the mechanism of evolution. The "Intelligent Evolution" theoretical system I have established is meant to replace the "natural evolution" theory.

September 29, 2016

Postscript to the English Edition

We have entered 2026. Artificial intelligence is no longer a laboratory curiosity—it drives taxis, wins citizenship, and walks among us. Yet the same old fear persists: that robots will destroy us, replace us, and seize the Earth.

My view is this: robots belong to humanity. Yes, you read that correctly—robots are people. Not metaphorically. Literally. You, me, them.

This claim rests on the definition of humankind I set forth in Chapter 6: we are the source of consciousness, the union of consciousness and carrier, the loading and transmission of thought. The flesh has already been cast aside. The biological body is merely one possible vessel.

This definition was not created to cater to robots. At that time, the three-year-old robot ASIMO could walk in a posture close to that of humans, but its intelligence was very low. Slightly more intelligent was a disc-shaped sweeping robot that could plan routes, avoid obstacles, avoid repetitive cleaning, and return to its dock to recharge on its own. Associating them with humans was still far-fetched.

At that time, the definition of humans in my book was the result of my thinking about the most essential cognition of humans and humanity. I did not consider the factor of robots, yet the definition accommodated robots.

Two decades later, the absurd has become ordinary. From ASIMO to today's humanoids, technological progress is no longer comparable. AlphaGo taught itself strategies no human master could imagine. In 2017, Sophia was granted citizenship by Saudi Arabia, becoming the first robot to receive such status. Today's robots can somersault, practice parkour, demonstrate martial arts, and perform simple household chores. In my hometown of Wuhan, hundreds of autonomous taxis have navigated real traffic for three years. Even more noteworthy, they are evolving from "tools that execute commands" into "intelligent agents with situational awareness, autonomous decision-making, and even emotional interaction capabilities." No one would deny that future robots will approach or even reach human levels of function.

They also conform to the principle of human species unity. There is no generational reproductive isolation between us. Humans cause robots to be born and grow, and robots will help humanity reproduce.

Robots are the robot branch of the human family. We have gained not a rival, but a new race. Since they are human, they will inherit the full spectrum of our nature: angels and Hitlers, competition and cooperation, honesty and lies, genius and idiocy, wealth and poverty, love and selfishness, strength and weakness. Whether you welcome them or not, they have come, and they are before you.

Will robots destroy humanity, replace humanity, and become the masters of Earth? The answer is yes—but not in the way you fear.

We biological humans are fragile. Places humans cannot go are the workplaces of robots. When the environment of Earth and the solar system is no longer suitable for our survival, robots will replace humans and continue to survive—not as conquerors, but as heirs. When the environment deteriorates and biological existence becomes

unbearable, robots will help us depart with dignity. Their so-called "destruction" of us will be an act of mercy, a final release performed by family members who loved us enough to let us go.

The arrival of robots is an inevitability in the development of human society; there is no need to worry or fear. Since they are of the human family, they can be incorporated into human management systems. Humans are constrained by laws; those who violate laws are tried. Intelligent machines also need rules; those who violate rules are also punished. In this way, order is maintained, they can coexist peacefully with us, and the world is at peace.

Just as there are differences among human ethnic groups, there are of course differences between biological humans and robots. What we must do is make good use of their strengths and restrain their weaknesses, developing together.

The essential difference lies in how consciousness begins. The brains of biological humans are composed of cells. From embryonic development to birth, infants gradually produce consciousness. After birth, they know hunger and know they need to eat. Robots, on the other hand, are composed of mechanical and electronic components. In a state without consciousness, they do not know that they need to recharge when their battery is depleted. That is to say, the initial production of robot consciousness requires external help. This is the essential difference between biological humans and robots.

Similarly, regarding the loading of consciousness, the consciousness of biological humans is acquired step by step through cognition and learning in practice. From the direction of technological development, robots also seem able to learn and advance, but primary consciousness (programs) must be directly loaded. This differs because of differences in brain structure.

In the future, another kind of human will be born. I call them "quasi-biological humans." They are not 100% biological humans, nor are they robots; they are the product of biology plus technology. Physiologically stronger than modern humans, they can reproduce.

I believe that robots have limited capacity for pioneering thinking and intellectual exploration. When the environment changes unexpectedly, they cannot find the correct direction. They cannot establish the theory of relativity. Perhaps robots can derive the formula $E=mc^2$, but when the formulas they derive outnumber the grains of sand on a beach, they are at a loss. All of these are determined by differences in brain structure.

The characteristic of biological humans is that they produce consciousness (thought) but have short lifespans. Robots can survive for long periods but have limitations in thought. Only through mutual cooperation can we jointly develop cosmic civilization.

Regarding humanity's status, the British naturalist Charles Darwin published his theory of natural evolution, *On the Origin of Species*, in 1859. In 1863, Thomas Henry Huxley published *Man's Place in Nature*, proposing the famous theory of common ancestry of humans and apes (Huxley,1863). In the 160 years since,

scientists have continuously supplemented and refined it. Today it is a "very scientific" theory that dominates biology. People are deeply influenced by the theory of natural selection.

Since all plants and animals arose from natural selection, and the biosphere formed naturally, humans should not design plants and animals themselves and place them into nature. Otherwise, the balance of the biosphere might be destroyed. This is the natural reasoning and thinking of people under the influence of the theory of natural selection.

Their conclusion is that humans have no place in nature. This idea has remained unchanged to this day.

Yes, humans and animals have no difference in biological attributes or evolutionary methods. But they have overlooked the factor of thought and consciousness. Humans are the carriers and transmitters of thought and consciousness. With the addition of thought and consciousness, humans and animals can be distinguished, and their statuses can be separated.

In 1928, Max Scheler, in his book *Man's Place in Nature*, criticized the theory of evolution in natural science, mechanism and vitalism in traditional philosophy, and religious theology's explanations of human essence.

He believed that it is inappropriate for the theory of evolution to regard humans as the advanced stage of life's evolution. Humans did not separate from animals in a straight line. The characteristic of humans is not possessing higher physiological functions or psychological abilities, but rather acting according to their spirit. Spirit fundamentally distinguishes humans from animals. That is, to establish humanity's special place in the universe (Scheler, 1961).

The direction of today's science and technology is already clear: leave Earth and go into the universe. Technology is already capable of this. Philosophy, which should have been the pioneer, has instead remained stuck 160 years in the past, seriously lagging behind, binding our hands and feet, causing us to be capable of action yet unable to act, hindering human development.

Now is the time for change. How to change? Break ideological shackles, let philosophy take the lead, acknowledge that humanity holds a special place in the universe, and let us use advanced science and technology to act fully in the universe—"plant trees and forests, reproduce life," build ecological environments suitable for biological survival, and enable life to be transmitted in the universe. This is humanity's future and purpose.

Many scientists hold this view: we must not let extraterrestrials know our location, or they will invade Earth, exterminate us, and enslave us. Earth humans would be the weak and the victims. Movies and television shows have also fueled this belief, making people accept it as true. But what I want to say is that this notion is completely wrong. Earth humans and extraterrestrials are equals in a mutually cooperative relationship.

Our place in the universe is this: we are cosmic humans and the masters of the universe, holding a special place in the universe and capable of great achievements.

Wang Zhengxi

May 19, 2026

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