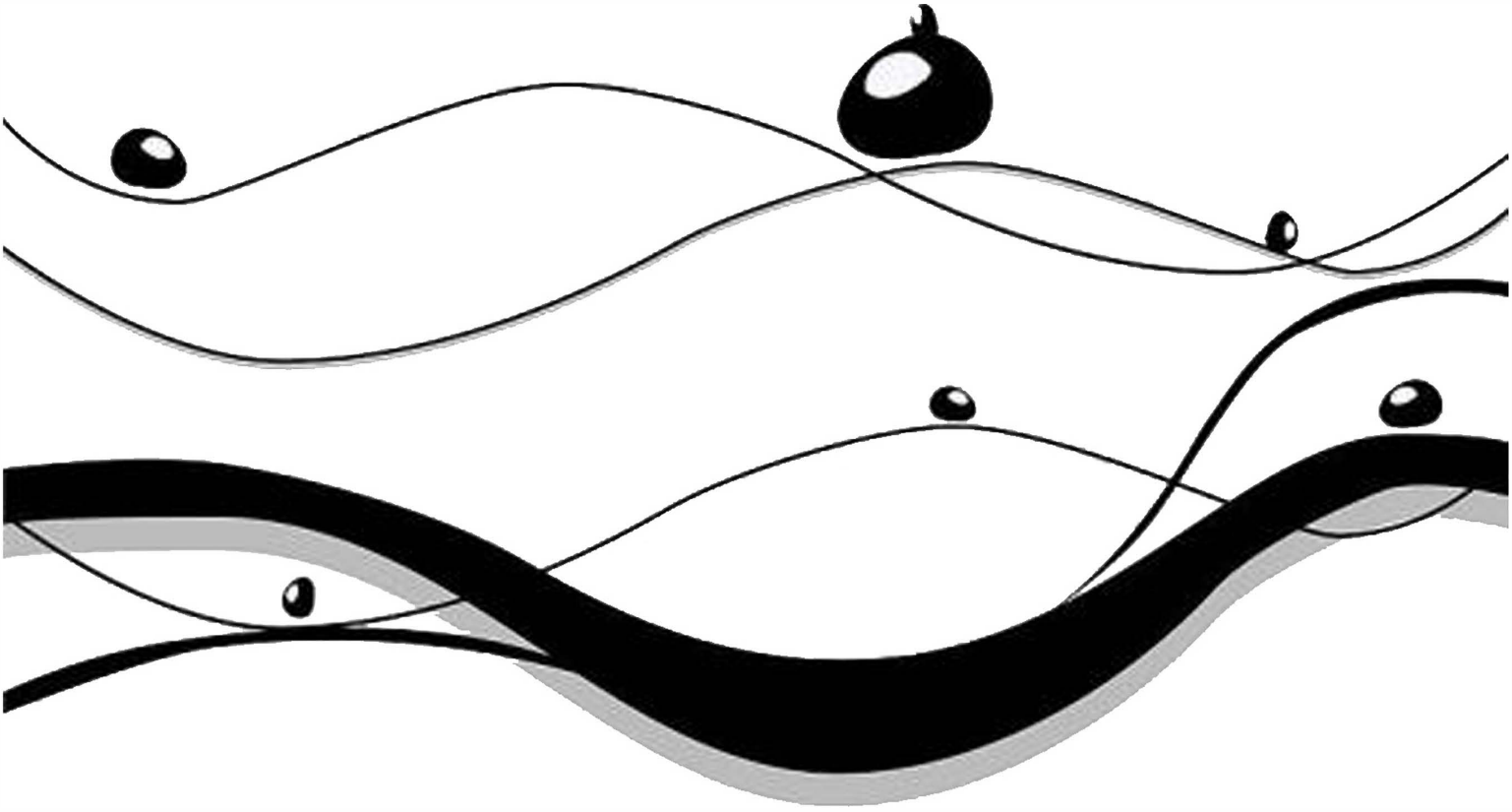
INTERCULTURALITES CHINE-FRANCE

Centre pour les Echanges Linguistiques et Littéraires entre la Chine et la France(CELLCF)

Revue franco-chinoise en Littératures, Langues et Arts



N° 5
2019/12

Contents

Tian S (2019). A Reverse Understanding of "Development": Three Interpretations of Ecological Civilization. *Interculturalites Chine-France*, (05): 39-56.

A Reverse Understanding of "Development": Three Interpretations of Ecological Civilization[1]

Song Tian[2];
Translated by Yuting Wang[3]

Abstract: Human civilization has been growing within the Earth's biosphere. The continuing existence of any civilization must meet three prerequisites: the ecological precondition, technological precondition, and cultural precondition. Among which, the technological precondition may be detrimental to the ecological precondition so that the cultural precondition must act as a mediator. In the current Chinese society, there are three ways to interpret ecological civilization. Which are the "parallel coexistence interpretation" -- presuming that agriculture civilization, industrial civilization, and ecological civilization may coexist. "Advanced stage interpretation" -- presuming that ecological civilization is the highest or most advanced stage of industrial civilization, and the "total transformation

[1] The Chinese version of this paper was published in the *Journal of Dialectics of Nature*, July 2018. Issue 7 of Volume 40 (Issue 239), pp136-142. Some notes have been added for this English version by the translator.

[2] Song Tian (田松), PhD. of the philosophy of science, PhD. of history of science. He is a professor at the School of Humanity and Social Sciences, SUSTech (Southern University of Science and Technology at Shenzhen, China), and he has been a professor of history and philosophy of science at BNU (Beijing Normal University). Professor Tian's research interest is in the philosophy of science, environmental philosophy, history of scientific thought, scientific anthropology, communication of science, et cetera. (tiansong9@gmail.com, tians@sustech.edu.cn)

[3] Yuting Wang (汪玉婷) is an assistant at the Center for Science and Civilization, the Center for Humanities, SUSTech, and she is also a freelance translator who focuses on translating Chinese-language scholarly publications of humanities to English (vice versa). She earned a Bachelor's degree in Philosophy at Beijing Normal University in 2014, when she wrote her graduation thesis about the smog problem in China from the perspective of the Gaia hypothesis under the supervision of Professor Song Tian. She is currently searching for a graduate education opportunity.

interpretation” -- recognizing ecological civilization as a brand-new form of civilization. The advanced stage interpretation has the most extensive support, which is based on the belief of scientism that science and technology are able to solve the major problems of society. However, the severe problems we have to face are the results of advanced science and technology. This article argues that only the total transformation interpretation can meet the three preconditions. The total transformation interpretation requires a new definition and a reverse understanding of the ideological concept -- development.

Keywords: Civilization study; the preconditions of the continuing existence of civilization; Golden Mountain VS. Green Mountain; value orientation of civilization; the total transformation interpretation of ecological civilization

The report of the Eighteenth National Congress of the Communist Party of China (CPC) titled its eighth chapter “Making Great Efforts to Promote Ecological Progress" and made "building ecological civilization" a national policy. "Ecological civilization” has since become a new trendy phrase. As for what ecological civilization is and how to build such an ecological civilization, however, there is no shared understanding among public discourse, official reports, and academic research.

Civilization (文明) and culture (文化) are often confused in both Chinese and English. Therefore, a short analysis is necessary. Culture reminds people of nature because the two share a similar spelling in English. In the Chinese language, culture is the manifestation of human interactions. It is different from nature by its nature. We often use the word culture to name ancient civilization discoveries, such as Liangzhu Culture (良渚文化), Banpo Culture (半坡文化), Hongshan Culture (红山文化), et cetera. There is also a more general usage of the term culture, such as in tea culture, coffee culture, and wine culture. This kind of culture refers to certain regulatory and imperative ways of behavior, similar to folklore. Civilization, on the other hand, is normally used as the opposition of barbarism. Both civilization and barbarism refer to different situations or patterns of human

life, and both are of no direct relation to nature. As for "civilization" in "ecological civilization," there are two possible interpretations in the present-day society. One is civilization as in spiritual civilization, material civilization, political civilization, and even in "civility and courtesy[1]." In this way, "ecological civilization" is understood as good habits like saving water and recycling garbage. This is not the "civilization" I discuss in this article.

The "ecological civilization" discussed here is compared with agricultural civilization and industrial civilization. In this usage, "civilization" refers to the types of societies, including its ideology, social institution, economic system, and legal system. "Ecological culture" can be used more generally – we can say that an industrial society also has an ecological culture. However, ecological civilization refers specifically to a type of human life as a whole.

What kind of civilization counts as an ecological civilization? The answer to this question is about the understanding of civilization as well as ecology. Ecological civilization is first and foremost contradictory to industrial civilization. Industrial civilization, prevailing for centuries, has led to global environmental and ecological crises. Ecological civilization, as a way of humankind survival, is asked to be in harmony with the global ecosystems, i.e., the biosphere, and build a human's civilization within the earth's ecology.

Human civilization from the very beginning, however, has been separated from the natural ecosystems.

Section One:
Self-restrain: Cultural Precondition of Civilization Survival

In another article (Tian, 2011), I discussed the prerequisites for the existence and survival of civilization from the perspective of ecology and thermodynamics. The discussion can be seen as the basis of the reasoning about ecological civilization here. To form a complete argument, a brief summary of that discussion is necessary.

Let us do a thought experiment first: In a mountain that is relatively

[1] In Chinese, the word "文明" means both civility and civilization. This and the following footnotes were added by Yuting Wang, the translator for English-speaking readers.

isolated from the outside world, what are the prerequisites for the society to survive?

First of all, this mountain should have adequate biodiversity – the mountain has woods and creeks, woods have wild animals, and creeks have fish and shrimp. In other words, it must not be a barren mountain. This is the **ecological precondition** for the existence of civilization, the external precondition beyond human control. Secondly, this society must possess minimal technology to retrieve materials that meet the basic needs of survival from the mountain. This is the t**echnological precondition**.

Technology is capable of "self-improvement." Even primitive techniques such as bow and trap may become more and more efficient and effective as experience accumulates. Consequently, human has the ability to take more and more materials from the mountain. Once technology reaches a certain level and enables human beings to bring back more than what the mountain can grow in a set period, like a year, the materials in the mountain will be on the decrease. As a result, the ecological precondition will be damaged, and the society will collapse eventually.

Therefore, for a society to survive continually, its culture must have the following functions.

1. To enable a feeling of happiness and satisfaction for life. Otherwise, people may desire change, and society will not be stable and sustainable.

2. To restrain the development of technology and restrict the applicating of technology.

This is the **cultural precondition**. The second item of the cultural precondition may sound surprising in a culture that advocates "development," and this is the center issue I will discuss in this article.

If integrating technology into culture, seen as a whole, the conclusion is that a sustainable civilization needs sufficient survival wisdom, which makes sure people can obtain enough materials and energy from the local environment and, at the same time, avoid serious harm to it. If so, as long as there is neither a significant geological change in this place nor invasion and interference from other human societies, this civilization may continue as long as the local ecology may.

The collapse of Easter Island, which is discussed in detail in Jared Diamond's book *Collapse* based on much archeological and anthropological

research, is a great example. Easter Island is a remote island in the Pacific. Its nearest coast is Chile 2,300 miles away. Polynesians came to this island in the 10th century and became its islanders. At first, the island was densely forested and rich in resources. However, the various tribes on the island cut down forests freely for living, production, and religious purposes. Archeologists find out that deforestation peaked in the 15th century, and the island nearly depleted of trees in the 17th century. Easter Island was environmentally degraded, and the ecological precondition of civilization was destroyed. When the Spaniards came to Easter Island in the 18th century, all they saw were huge stone statues. The archeological restoration provided an interesting detail: The islanders used to eat seashells, larger ones at first but smaller ones later. When the civilization came to an end, large shellfish had long disappeared from their diet, leaving only tiny shellfish (Diamond, 2005). The collapse of Easter Island civilization is not due to invasions or major geological disasters, but because its culture did not have self-restraining function.

From an anthropological point of view, self-restraint is very common in cultures. For example, Northeast China's hunting people have complicated and strict self-restraining rules and taboos: Hunting is prohibited in spring when the wild beasts are in mating season; when hunters encounter a group of prey, only the elderly and frail individuals are allowed to be hunted. Fishers have similar taboos. For example, closed fishing season is set in many places to ensure the production of offspring; and fishers use fishing nets that allow small fish to escape.

The ecological precondition, technological precondition, and cultural precondition are necessary for civilization to exist and last. Among them, the technological precondition belongs to the “physical system” connecting to the world, while the cultural precondition belongs to the “metaphysical system” interpreting the world. They are inherent in human society, while the ecological precondition is external.

Section Two:
The Mechanism of Industrial Civilization

The Earth is an Easter Island larger in size. Human beings have only

one Earth, and the Earth is our only home. If human civilization wants to survive on the Earth, these three prerequisites also need to be met.

However, the culture of the industrial civilization not only fails to restrict technological development but also has the motivation to stimulate it. In the industrial civilization ideology, economic growth is the core value. Even the legitimacy of the government is built on the continuous growth of the economy. If a government fails to ensure economic growth, it should step down. However, the Earth is exhaustible, so are the resources in it, continuous economic growth is impractical. Even if the growth rate is low, as long as the growth continues, the number will rise exponentially. As a result, infinite GDP growth requires infinite resources and creates an infinite amount of garbage.

Industrial civilization is globalized. It goes beyond regions, borders, cultures, and nations. Although all countries have their local traditional culture, after they accept or are forced into industrial civilization, their social ideology, social structure, and economic system, gradually converge. The notion of monotonously and unidirectionally social development, the notion of scientific progress, and the mechanistic view of nature, are widely accepted by the industrialized countries and become the fundamental ideology of industrial civilization. Traditional cultures have various forms, while industrial civilization is monotony.

In the modern society of industrial civilization, science and technology have gained unprecedented status. Science has become the core of the metaphysical system, which provides the interpretation of the world. Meanwhile, scientific technology has become the core of the human's connection to the physical world. Science and technology are no longer individual pursuits, but part of the social system. Society demands scientific and technological development that serves economic growth. People accept the idea that social development means economic growth, which depends on technological development.

"Scientific technology" has stronger power than traditional "experiential technology." It can extort more materials and energy from nature. But it can also directly interfere and even destroy natural ecosystems. Cutting down trees, hollowing mountains, and building dams all directly destroys or at least severely threatens the ecological precondition

of civilization. In traditional societies, garbage had never been a problem, but now it is. And the situation is getting worse.

Industrial civilization is reflected in globalized modernization and modernized globalization. It is a "food chain." Areas of any size have its upstream and downstream. The upstream has priority over the downstream of its energy and resources, and transfers its pollution and garbage to the downstream. Generally and globally speaking, Europe, America, and Japan are the upstream, while China, Africa, and South America are the downstream. In China, the eastern coast is the upstream, and the western area is the downstream. In the United States, the east and west coast are the upstream, and the middle part is the downstream. In any metropolis, the city center is the upstream, and the surrounding area is the downstream. Therefore, cities are surrounded by the garbage they created. Borrowing terminology from Professor LIU, Huajie, a more accurate way to describe the relationship between the upstream and the downstream is that, it's a fractal structure.

Pollution and garbage are transferred from the upstream to the downstream, both directly and indirectly. The direct way is obvious, for example, Guiyu, Guangdong (广东贵屿), China as downstream, has been accepting E-waste from California, Europe, and Japan for decades. The indirect way is more obscure, for example, moving highly polluting factories to the downstream, then, manufacturing products there, using downstream resources and energy, polluting its land, air, and water, and selling the products to the upstream. Fair deal, isn't it?

Many believe that people can solve environmental problems only if the economy develops, as the plausible precedent established by the United States and developed European countries. However, first of all, environmental problems caused by early industrialization in Europe and the United States have not been completely taken care of. There are still causes of future trouble. Secondly, the aforementioned environmental problems were not exactly taken care of but were transferred. Highly polluting companies have been relocating to the Third World. Therefore, pollution in the old location has been greatly reduced.

But do not forget we all live on the same planet. Environmental problems in any place are of global concern, and any local ecological

problems can add up to a global ecological crisis. Therefore, any local environmental and ecological problem belongs to the entire biosphere. The chronic operation of the industrial civilization "food chain" will inevitably result in:

The upstream reaches modernization, and then takes the downstream resources and energy to maintain and improve its level of modernization. The downstream subsequently accepts the upstream ideology and modernizes. Because the downstream resources and energy must both serve its own modernization and provide for the upstream, its burden becomes even heavier. Then, as the downstream loses resources, it gains environmental pollution and ecological damage, which leads to local environmental and ecological problems. At last, the downstream environmental and ecological problems intensify and eventually become global environmental and ecological crises, which will trigger the overall collapse of industrial civilization.

Upstream society will protect its natural environment as much as possible. But at the same time, it will also obtain downstream energy and resources through the government there. Downstream society has no other choices but to exhaust local resources and plunder subordinate "downstream," to support the modernization of itself and its upstream. Therefore, being more downstream in this system means becoming more deprived environmentally. As a result, if a global environmental crisis were to happen, it would first erupt in the most downstream area and then spread.

Process philosopher John Cobb Jr. pointed out that the current social mechanism is fundamentally injustice and unsustainable (Cobb, 2011). It satisfies neither social nor ecological justice.

Environmental and ecological problems are global. Problems China facing are part of it. China is currently in the downstream or middle reaches of the global system. Therefore, China is the world's factory. It consumes its energy, pollutes its soil and air, and provides cheap goods to developed countries. Meanwhile, China is criticized by the world for its conspicuous carbon emissions. Isn't it ridiculous? This economic model is doomed to

failure. Industrial civilization is unsustainable in China as well as universally.

The concept of ecological civilization is raised to solve the inherent problems of industrial civilization. The human race, or the community of shared future for humankind, must face these problems as a whole.

If human beings as a whole cannot turn to ecological civilization within a limited time, the biosphere will face destruction, of which planetary ecological and environmental crises, “controversial” global warming, and indisputable species extinction are all precursors. Therefore, the transformation from industrial civilization to ecological civilization is a must.

Section Three:
The "Coexistence Interpretation" and "Advanced-stage Interpretation" of Ecological Civilization

There is no consensus on the definition of ecological civilization in the mainstream and public discourse in Chinese society. This article summarizes three ways of understanding or three versions.

The first version is called the "coexistence interpretation," which is often used in the grass-roots governmental discourse at the county and city levels. They believe that since they have agriculture, they must continue to build an agricultural civilization; since they have township factories, they should also build an industrial civilization. As for how to build an ecological civilization? They think they can find a mountain or lake, plan an ecological park, and carry out an eco-agri-tourism, to build three civilizations together. This is a superficial and even opportunistic way of understanding ecological civilization, not worth mentioning. However, it has a wide range of applications; therefore, a brief analysis is necessary. Under the industrial civilization social structure, agricultural civilization and "ecological civilization" in this version are actually part of industrial civilization.

The second version can be called the "advanced-stage interpretation." It regards ecological civilization as the advanced stage of industrial civilization. It believes that, instead of changing the overall structure of industrial civilization, moderate repairs and upgrades can ensure the

transformation from industrial civilization to ecological civilization, such as replacing fossil energy with "clean energy" and high polluting technology with "low-carbon" technology, adopting "circular economy," et cetera. So that people may keep enjoying the fruits of industrial civilization without causing environmental problems. At present, this is the most acceptable interpretation of ecological civilization. Mainstream discourse treats it as the default explanation, and most scholars also embrace it.

The advanced-stage interpretation is aware of the problems brought by industrial civilization, and also implies people's reflection on it. However, the interpretation continues scientism, developmentalism, and progressivism that prevail the mainstream ideology.

Scientism, developmentalism, and progressivism are the central ideology of industrial civilization. The reflecting, therefore, is not thorough, like one trying to lift oneself off the ground. The advanced-stage interpretation places hope on future science and technology; therefore, its ideology and social structure are still industrial. The ideal state it expects is also impossible to achieve.

The current social consciousness instinctively proposes two solutions to any problem: the **technological solution** and **management solution**. For example, people think that the garbage problem can be solved through more advanced technology and better management. Under the shadow of scientism, science and its technology are regarded as the fundamental and ultimate means. Management solution, at the same time, is supplementary treatment. It persuades people that whatever problems arising in society can be solved through more advanced science and technology. Examples of this abound. The defect of industrial civilization is reduced to individual problems of the material world, such as energy shortage, ecological degradation, and environmental pollution. In this way problems of civilization are reduced to scientific and technological tasks. The solution it provides, in short, is day-dream of breaking through the exhaustibility of the Earth by the seemingly unlimited development of technology.

Some assume that there are two direct approaches to go beyond the Earth's exhaustibility by science and its technology. One is to obtain energy and resources from the outer space and send out garbage there. The other is, instead, to migrate inter-planetarily and continue human civilization. The

first solution actually treats other celestial bodies as the downstream of the Earth. But unfortunately, the plan is physically not feasible. Because energy paid to obtain resources may be greater than the energy obtained. The second is shown in many science fiction movies and followed by many people. But again, not feasible. First of all, it is impossible from the view of physics and biology. The energy required to send a reproducible human population to another suitable planet or to transform an uninhabitable planet is beyond what humans can obtain and use effectively. Moreover, the time required also exceeds the life span of human beings. Secondly, the plan is impossible from the view of ecology, because the biosphere where humans live today takes billions of years to evolve. The process is full of occasional factors and thus not duplicable. And last, it is also unacceptable from the view of ethics, because the plan does not solve the problem, it just transfers the problems to another planet.

There is also an indirect approach. This is to develop new science and its technology, improve the utilization rate of existing energy and materials on the Earth, which makes the Earth comparatively larger. Of course, there is still an upper limit to technological solutions in this sense. Firstly, even if one Earth can be used as two "Earths" now, two "Earths" are still exhaustible. If the civilization model remains unchanged, human consumption of energy and resources will nevertheless accelerate. As a result, the savings may not be as much as consumption. Secondly, due to the second law of thermodynamics – the principle of entropy increase, there is an upper limit for technological solutions – the utilization rate of energy cannot reach 100%, and materials cannot achieve self-circulation (Tian, 2007). This means, at least, that the garbage problem cannot be solved by technological development (Tian, 2010).

The so-called clean energy, low-carbon technology, and circular economy can only ease the problems introduced by industrial civilization in the short term. These concepts cannot save industrial civilization because they have fundamental deficiencies. For example, clean energy is a pseudo-concept. The cleanness of energy does not depend on the sources of energy, but on the amount of consumption: Beyond a certain limit, no energy is clean (Tian, 2015).

The problem of civilization cannot be reduced to a technological

project. The problem must be solved within itself. The transformation from industrial civilization to ecological civilization will inevitably involve all-round changes in human society.

Therefore, the third solution is called the total transformation interpretation.

Section Four:
Not How to Develop, But How to Stop, and Transform

The total transformation interpretation believes that ecological civilization is a completely new kind of civilization that cannot be achieved through amendments of industrial civilization. It requires a comprehensive transformation, including changes in mainstream ideology, social structure, the economic and legal system, lifestyle, et cetera. Among which ideological change is of fundamental importance. In this transformation, basic industrial civilization ideology, including scientism, developmentalism, and progressivism, need adjustments and replacement. Basic cognitive methods, such as the mechanistic worldview (including mechanism, reductionism, and determinism), basic ideas of human-and-nature relationship (Tian, 2014), and values about how to live a good life, need to change as well.

According to the first part of this article, sustainable civilization must have a force to restrain its expansion. If this force does not exist, the ecological precondition of civilization will sooner or later be destroyed. Therefore, from industrial civilization to ecological civilization, the most important issue is how to obtain a self-restraining force.

Therefore, the real question is **not how to develop, but how to stop, and transform**. This means humankind should reflect on the deep-rooted concept of development and put a stop to it. If humans are not able to do so, human civilization will collapse in the foreseeable future.

In a society that advocates “develop,” promoting "non-development" is both unacceptable and misunderstand-able. There are two narrative strategies to fix this problem. One is to keep using "development" as a positive word, but give it a new definition; the other is to preserve the definition of "development," but remove the word’s positiveness, and advocate "not-development" and "stop."

In fact, these two strategies are carried out simultaneously. For example, Nobel Laureate Amartya Sen put forward, in *Development as Freedom*, that "expansion of freedom" is viewed "both as the primary end and as the principal means of development (Sen, 1999)," which gives new meanings to development. China's mainstream ideology also constantly constrains and restricts this concept, from "development is the absolute principle[1]" to "sustainable development" and then to "Scientific Outlook on Development[2]." Therefore, the connotative and denotative means of that word have undergone tremendous changes. It can be said that "development" has deviated from its original meaning and became its antithesis.

This process is reflected in the relationship between "green mountains and clear water" and "mountains of gold and silver[3]" in political discourse in recent decades in China. In the early stage, which is also called the "absolute principle" stage, economic growth is the main aim, while pollution (created by it) treatment is of secondary importance. In this stage, we want "mountains of gold and silver" instead of "green mountains and clear water." When it comes to the stage of "sustainable development" and "Scientific Outlook on Development," we start to re-evaluate the importance of both "mountains of gold and silver" and "green mountains and clear water." Recently, at the stage of "comprehensively building an ecological civilization," we believe that "green mountains and clear water are as good as mountains of gold and silver[4]."

If the development as the absolute principle is named "Development I," obviously, the core of Development I is economic growth measured by GDP. Adopting such a concept, green mountains and clear water are of no value – their value lies in the fact that they can be sold in exchange for gold

[1] "Development is the absolute principle (发展才是硬道理)" is the gist of Xiaoping Deng's thought.

[2] "The Scientific Outlook on Development (科学发展观)" is one of the guiding socio-economic principles of the Communist Party of China (CPC) and the central feature of former Party General Secretary Jintao Hu's attempts to create a "harmonious society."

[3] The Two Mountain Theory, proposed by Secretary Jinping Xi, is the theory that guides the construction of ecological civilization in China.

[4] On August 15, 2005, when Jinping Xi, then-Secretary of the Zhejiang Provincial Party Committee, inspected Anji, Huzhou, Zhejiang Province, for the first time, he proposed that "Clear waters and green mountains are as good as mountains of gold and silver (绿水青山就是金山银山)."

and silver. Therefore, the potential to become "mountains of gold and silver" is the sole value of green mountains and clear water. In other words, if this goal is not fulfilled, the value would be "wasted." The result of Development I is "we need mountains of gold and silver instead of green mountains and clear water" and "pollution (growth) first control second"– although, the pollution created is not and will never be under control.

Development in the stages of "sustainable development" and "Scientific Outlook on Development" can be named "Development II." Development II imposes various restrictions, adjustments, and expansions on Development I. With such a concept, like mountains of gold and silver, clear water and green mountains gain intrinsic value besides instrumental value. So "we need green water and mountains as well as mountains of gold and silver." However, the order of importance is discussable.

In today's "comprehensively building of ecological civilization," "clear water and green mountains are as good as mountains of gold and silver." The thought indicates that we not only recognize clear water and green mountains as of intrinsic value but even believe that its value is higher than that of mountains of gold and silver. Therefore, "we would rather have green water and mountains than mountains of gold and silver[1]." In this phrase, instead of pointless depletion of clear water and green mountains by turning it into GDP, we believe clear water and green mountains have value in themselves as well. If we name this development as "Development III," we can see that compared with Development I, Development III is actually **non-development**.

Section Five:
Orientation of Civilization's Values

How to stop is not a simple question, but a question about the overall transformation of society from industrial civilization to ecological civilization.

[1] "We need both green water and mountains and mountains of gold and silver. But we would rather have green water and mountains than mountains of gold and silver. Besides, green water and mountains are equal to mountains of gold and silver (我们既要绿水青山，也要金山银山。宁要绿水青山，不要金山银山，而且绿水青山就是金山银山)." Secretary Jinping Xi, Speech at Nazarbayev University, 2013.

The priority is the way of thinking, a fundamental transformation of ideas. Imaging on a rumbling train at great speed, if everyone wants to run faster (development), they will add more fuel. As a result, this train will speed up. But if someone starts thinking about stopping, gradually, more and more start to think about how to stop, the train may be able to stop.

Experience tells us that if someone starts thinking about stop, he or she will automatically slow down the pace. And slowing down is a sign of stopping.

People now look forward to technological development. For example, mobile phones are constantly upgrading. Now we have iPhone7. Perhaps many are looking forward to the iPhone8 release; the sooner, the better. Once iPhone8 comes out, manufacturers will gain profits, governments will receive taxes, and users will have better products. According to the industrial civilization mindset, this is a win-win situation. However, in this process, a lot of natural resources are consumed. Forests, mineral deposits, and natural water bodies become various forms of garbage. At the same time, abandoned obsolete iPhones will also become garbage that lacks degradability, a burden the planet must carry. Why do people need iPhone8? In fact, iPhone4 is good enough for most; its function is even underutilized. The pursuit and desire for new technology is a product of the industrial civilization ideology. Can we stop? How about let us stop on iPhone7 and never have iPhone8? Or, if we really need an iPhone8, how about postponing the release. Slow down. Give it ten years. Is this possible?

Stop requires an overall social, ideological transformation; the transformation relies on a deep understanding of "an ideal society." Let's refer to Aldo Leopold, in the Foreword of *A Sand County Almanac*, he said,

> *Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher 'standard of living' is worth its cost in things natural, wild, and free. For us of the minority, the opportunity to see geese is more important than television, and the chance to find a pasque-flower is a right as inalienable as free speech* (Leopold, 1949).

Leopold raises a far-sighted question about the value orientation of

civilization: which one is more important, seeing the wild geese flying and the pasque flower blooming or watching TV? At the same time, he also emphasized that for "the minority" like himself, it is an inalienable right to see birds flying and flowers blossoming. *A Sand County Almanac* was written in 1948. In the United States at that time, flying birds and blossoming flowers were common, but Leopold had foreseen that highly developed industrial civilization would deprive that right. In today's urban and rural areas, "watching TV" has become an indispensable part of life, while "watching the wild geese" and "the pasque-flower" are just a few people's special distractions.

Watching TV and watching birds are two different values. Television represents industrial civilization (Development I), while geese and flowers represent ecological civilization (Development III or stop). If the mainstream ideology of society regards watching television as a symbol of a good life and the direction of an ideal society, where development means television, mobile phone, and computer upgrades, green water and mountains are going to disappear and become mountains of gold and silver. If the mainstream ideology of society regards seeing birds and flowers as a symbol of a good life and the direction of an ideal society, this society will gradually stop and possibly save its green water and mountains.

The report of the Eighteenth National Congress of the Communist Party of China stated, "We must raise our ecological awareness of the need to respect, accommodate to and protect nature," and requires this concept to be "incorporated into all aspects and the whole process of advancing economic, political, cultural, and social progress." This means that the overall structure of this society and the survival of humanity need to be rebuilt around "ecological awareness." Stopping the pace of industrial civilization and moving towards ecological civilization is the only possible way to "leave to our future generations a beautiful homeland with green fields, clean water, and a blue sky" and "achieve lasting and sustainable development of the Chinese nation[1]." Of course, it is also the way to the sustainable development of a community with a shared future for mankind. The new development concept, namely Development III or non-development, is a necessary part of this process. The recently-closed

[1] https://language.chinadaily.com.cn/news/2012-11/19/content_15941774.htm

Nineteenth National Congress meeting continued this philosophy, "We should, acting on the principles of prioritizing resource conservation and environmental protection and letting nature restore itself, develop spatial layouts, industrial structures, and ways of work and life that help conserve resources and protect the environment. With this, we can restore the serenity, harmony, and beauty of nature[1]." In this report, priority is placed on "conservation," "protection," and "natural restoration."

Ecological civilization is a total transformation of industrial civilization. It is not a U-turn because time is one-dimensional and irreversible. However, it can be understood as a change of direction. Industrial civilization is a globalized civilization; therefore, ecological civilization must become the future form of civilization for humankind. In this sense, the concept of "ecological civilization" is contemporary China's contribution to humankind.

References

Cobb, John Jr. (2011). Toward a Just and Sustainable Economic Order //*Environmental Ethics Light*. Rolston III H (ed). Blackwell Publishing, 359.

Diamond, Jared (2005). *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking Press, 79.

Leopold, Aldo (1949). *A Sand County Almanac: And Sketches Here and There*. Oxford: Oxford University Press, vii.

Sen, Amartya (1999) . *Development as Freedom*. Oxford: Oxford University Press.

Tian, Song (2007). *Skepticism in the Age of Limited Earth*. Beijing: China Science Publishing.

Tian, Song (2010). Inveterate Disease of Industrial Civilization: Garbage Problems in the Perspective of Thermodynamics. *Journal of Yunnan Normal University*, (06):45-55.

Tian, Song (2011). The Ecological, Technical, and Cultural Preconditions of Human Civilization. *Journal of Yunnan Normal University*, 43(02): 35–39.

Tian, Song (2014). Construction of Ecological Civilization Requires New

[1]https://language.chinadaily.com.cn/19thcpcnationalcongress/2017-11/06/content_34188086.htm

Ecological Concepts. *Green Leaf*, (02): 32–36.

Tian, Song (2015). *At the Verge of Collapse*. Wuhan: Hubei Science and Technology Press.

This number was convened by Professor Song Tian and received support from the CSC, SUSTech

The Center for Science and Civilization of Southern University of Science and Technology (CSC, SUSTech) was established in November 2019. It is affiliated to the Center for the Humanities, School of Humanities and Social Sciences, SUSTech.

The Center for Science and Civilization focuses on history of science/technology, ethics of science/technology, science communication, science education, environment education, and other science-humanities issues, within the context of ecological civilization construction.

The Center advocates 'civilization studies': regarding civilization as a whole, from the multi-disciplinary perspective, especially history and philosophy of science and technology, environmental history, anthropology, and ecology, to explore the intersection among science, technology, society, culture, environment, and ecology; and to examine the survival, continuation and evolution of civilization.

The Center also pays attention to global issues such as species extinction, climate change, and ecological crisis, and takes STSE (science, technology, society, and environment) as a research field as well as a methodology, by the standpoint of civilization studies.

Professor Song Tian is the founding director of the CSC, SUSTech.

Editeur: Centre pour les échanges linguistiques et littéraires entre la Chine et la France(CELLCF)
Forme juridique: Association Loi 1901
Adresse du siège social: 26 rue des Jardins Saint Paul Paris 4e

Représentant légal: Jean-François WEILL
Trois principaux associés: Jean-François WEILL, Thomas ZHOU, Joceline ARNAUD
Directeur de la publication: Jean-François WEILL
Responsable de la rédaction: Kefei XU
Imprimeur: 11 rue Victor Cousin 7 5005 Paris
Date de parution: Déc. 2019
Dépôt legal: Déc. 2019
Prix: 5 euros
ISSN: 2428-3312