

## The Technological Turning Points of An Ecological Civilization

*“At least for China, I believe a New Civilization is better understood as an Ecological Civilization. And the Unveiling of an Ecological Civilization is conceivable only with the prerequisite of certain well established sufficient and necessary conditions. In the current context, sufficient conditions focus on Climate Change and the Pollution Problems that permeate virtually every aspect of modern society; necessary conditions impose technological constraints. This means that while concerns surrounding Climate Change and pollution problems consolidate into a call for a transformative adjustment in existing lifestyles, it will not be possible to usher in an Ecological Civilization, until certain technological barriers have been removed. We see Artificial Intelligence and Big Data as such technological barriers.” — Dr. Zhou Jinfeng*

Past decades have witnessed the earth-shaking development of the Industrial Civilization. Despite improved life quality and health, the Industrial Civilization has been increasingly blamed for its irrevocable and unsustainable impact on the whole ecosystem, including for example the destruction of the natural habitats . Thus comes the call for an Ecological Civilization. I would argue in favor of “Ecological Civilization” rather than “New Civilization”, as the spirit of a civilization is defined by a series of reforms that mark the evolution of human society.

Some people believe we must create a New Civilization, and with it all our problems can be alleviated and solved. Yet I believe the term and concept of an Ecological Civilization are more appropriate, accurate, informative, and consistent, as they capture most directly the central idea of a civilization. All existing problems and hence their solutions relate to ecology; whether such challenges can be overcome with ecological approaches will determine the future path of human development.

“Eco is interpreted as ‘family’ in Ancient Greek. And the long yearned for civilization is more precisely understood as innovations able to reverse further destruction of our living habitat.” Why do we need clean energy? Why is a circular economy essential? Because they have been painstakingly conceived in response to Climate Change, Pollution Problems, Resource Problems, Oil and Other Energy Problems, problems that all fall into the category of threats to our living habitat.

This idea underpins the development of most international conventions, including the “International Convention on Plant Genetic Resources for Food and Agriculture”, “Convention on Biological Diversity”, and “Convention Concerning the Protection of the World Cultural and Natural Heritage”. The civilization we want, requires a comprehensive transformation of our attitudes towards ecology, the environment, and habitats. This is why I prefer “Ecological Civilization” to “New Civilization”.

“Without Artificial Intelligence and Big Data, Ecological Civilization would be

ethereal.” This is because “Living in harmony with nature” is conceivable only with these two technologies. Every single individual decision, minute and insignificant when viewed in isolation, combine and sum to a tremendous power that serves to shape human environment and habitats. Technological innovations help define and improve each individual decision.

Historical evidences abound. For instance, the evolution from the Primitive “Hunter/Gather” Civilization to the Agricultural Civilization was accompanied by the popularization of food production technologies and tools. Our ancestors for survival reasons recognized seeds and domestications as key factors for moving from slash-and-burn cultivation to agricultural production. The talent of creating and applying tools helps distinguish human beings from other animals, which once more highlights the power of technology.

“The Ecological Civilization can be differentiated from the Industrial Civilization by Artificial Intelligence and Big Data.” If well integrated into biological sciences , these two technologies will help write gene code and create new species, which will have profound implications on future generations with their potential to resist diseases, detect and conquer ecological disasters, and all these come from sustainable use of the power of nature and life.

Sand storms provide a valuable case to explore. Sand storms along the source region of the Yangtze River would have gone well unnoticed without timely satellite cloud pictures to signal the oncoming danger. Artificial Intelligence likewise makes effective simulation, deduction, and intervention possible and practical. Ecological landscapes will be saved from human intrusion through the introduction of Virtual Reality and Augmented Reality into the tourism industry. Virtual collision tests can be carried out without human involvement. And in agriculture, which is a perpetual source of human anxiety, transgenic technology will help increase crop yield and improve plant quality, so as to overcome existing constraints imposed by traditional agricultural technology.

Of course, I am not saying that Artificial Intelligence and Big Data are without problems. In fact, consensus has yet to be reached regarding their role in human society of the future. But just like a toddler who may fall down when learning how to walk, there will also be a back and forth trajectory for the development and application of Artificial Intelligence and Big Data. What should be kept in mind is that despite their irrefutable value for the future, their application requires holistic circumspection.

“Ecological Civilization is not what is to come; we have already entered the era of Ecological Civilization.” The pace of the advent of Ecological Civilization is astounding. All the ecological challenges facing people today are among the most eloquent proof of this. Our experiences with the ultraviolet ray and the ozone layer is one example. In fact, this is truly an emergency in the era of Ecological Civilization, because ultraviolet rays are capable of eliminating all life on earth. The Montreal Protocol helped mend

the ozone hole, thus protecting life from a disastrous catastrophe.

We need not wait for another 100 year for an Ecological Civilization; on the contrary, it is already there. Therefore, it is crucial we take immediate actions to adjust ourselves, collaborate with others as much as possible, and intelligently ramp up the pace for effectively dealing with climate and biodiversity problems. A renowned futurist once told me: “there may be more advantages with your system in the future, compared with others”. This refers to one of our long-held ideologies that “collaborative efforts represent stronger implementation of human will to confront natural and ecological challenges, which can never be cast as an individual problem”.

The Open Debate & Engagement Meeting on the Club of Rome’s “Emerging New Civilization Initiative” in Dubrovnik will certainly be a milestone in human history. The Club of Rome and the World Academy of Art & Science have the most distinguished and renowned scholars and researchers from all over the world. And the occasion will serve as the most ideal platform for the collision and melding of the most up-to-date and insightful research outcomes from our joint exploration of the New Civilization.

The China Biodiversity Conservation and Green Development Foundation believes the Open Debate & Engagement Meeting an important learning opportunity. At this international platform, CBCGDF and I as a Member of the Club of Rome would like to share and exchange Chinese ideas and studies on Ecological Civilization. We would appreciate each and every comment and the feedback from our respected colleagues and friends, because we deem them to be fundamental contributions to China’s efforts for the Construction of the Ecological Civilization and A Community of Shared Future for Mankind.