

Journal of Ecological Civilization Studies

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The Journal of Ecological Civilization Studies is an academic publication dedicated to advancing understanding of the theory and practice of ecological civilization. The journal provides a platform for interdisciplinary research, critical discourse, and practical solutions aimed at fostering sustainable, equitable, and regenerative societies for the long-term. From rethinking economies, systems of governance, and farming, to family systems, educational systems, religious communities and more, we invite experts from various fields around the globe to contribute their insights and knowledge toward addressing urgent global challenges.

Center for Process Studies
Portland, Oregon, USA

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From the Editors

With gratitude and hope, we welcome readers to the inaugural issue of the *Journal of Ecological Civilization Studies*. This journal begins from a simple but urgent conviction: the crises of our time are not only environmental, political, economic, or spiritual. They are civilizational. Climate disruption, biodiversity loss, economic inequality, technological disruption, political fragmentation, and widespread crises of meaning all point toward the inadequacy of inherited ways of thinking and living. They call us to imagine, study, and help bring into being forms of civilization that are more just, participatory, compassionate, and life-sustaining.

The phrase “ecological civilization” names both a critique and a hope. It critiques the dominant assumptions of modern industrial civilization: the reduction of nature to resource, the reduction of society to market, the reduction of persons to consumers or workers, and the reduction of knowledge to narrow specialization. But ecological civilization also names a constructive alternative. It points toward cultures, institutions, economies, technologies, and communities that are organized around the flourishing of the whole Earth community. It invites us to ask not only how humanity can survive, but how humans might learn to live well with one another, with other creatures, and with the living planet that sustains us.

This journal is especially indebted to the life and work of John B. Cobb, Jr., whose intellectual and moral legacy continues to inspire the field of ecological civilization studies. Long before ecological crisis became a central concern of public discourse, Cobb recognized that modern civilization was on a destructive path. He saw that the ecological crisis could not be solved by technical adjustments alone, because it arose from deep assumptions about reality, value, economics, religion, and human purpose. His work joined philosophical rigor with practical urgency, theological depth with ecological concern, and critique with constructive vision. In this sense, Cobb did not merely write about ecological civilization; he helped create the intellectual and spiritual conditions in which such a vision could become thinkable.

Cobb’s legacy also reminds us that ecological civilization is not the possession of any single discipline, culture, nation, or tradition. It requires philosophy, science, religion, economics, education, policy, agriculture, the arts, and grassroots practice. It requires dialogue between East and West, North and South, academic and practical, humanistic and

scientific. It requires attention to the local and the planetary, to lived experience and structural transformation, to ancient wisdom and emerging knowledge. For this reason, the *Journal of Ecological Civilization Studies* is intentionally transdisciplinary. We seek contributions that cross boundaries, not for the sake of novelty alone, but because the most pressing problems of our time transcend the boundaries of academic disciplines.

The journal is also constructive in orientation. Critique remains essential. We must name the systems, habits, and ideas that have brought us to the edge of catastrophe. But critique by itself is not enough. Ecological civilization studies must also ask: What comes next? What forms of economy can serve life rather than extract from it? What forms of education can cultivate whole persons and whole communities? What kinds of technology can be embedded within ecological wisdom? What political forms can support participation, justice, and the common good? What spiritual and philosophical visions can help humanity rediscover its kinship with the more-than-human world?

As an international open-access journal, we are committed to making this conversation available as widely as possible. The transition toward ecological civilization cannot be confined behind institutional, disciplinary, or economic barriers. Open access is therefore not merely a publishing model; it is part of the journal's ethical commitment. Knowledge that serves the common good should circulate freely, inviting collaboration among scholars, educators, activists, policymakers, religious leaders, artists, farmers, students, and communities around the world.

We launch this journal in a time of profound uncertainty, but also of profound possibility. The future is not predetermined. Civilizations are made, unmade, and remade through ideas, practices, institutions, and relationships. The work gathered here is offered in that spirit: as scholarship in service of transformation, as inquiry in service of life, and as a contribution to the long labor of building ecological civilization.

We invite readers to receive this journal not only as a collection of articles, but as a growing conversation. May it become a meeting place for rigorous thought, courageous imagination, and constructive practice. May it honor the legacy of John Cobb by carrying forward the work to which he devoted his life. And may it help nurture the wisdom, compassion, and creativity needed for a flourishing Earth community.

Wm. Andrew Schwartz and Zhihe Wang, Chief Editors

Ecological Civilization¹

John B. Cobb, Jr.

Abstract: This article argues that what humans have historically called “civilization” has been deeply anti-ecological, marked by exploitation and alienation from nature. “Ecological civilization” therefore requires not minor reform but a radical rethinking of civilization itself. Although history offers no fully ecological civilization, Chinese traditions and Whiteheadian constructive postmodernism provide important resources for reimagining civilization in ecological terms.

Keywords: *Ecological civilization; constructive postmodernism; China; alienation from nature; Whitehead*

Some people regard “ecological civilization” as an “oxymoron.” An oxymoron is a combination of terms that contradict each other. “Ecological civilization” is an oxymoron if civilization is inherently non-ecological. I am not quite ready to say that, but those who do think this to be true have most of history on their side.

I usually try to speak in encouraging ways of the possibility of achieving a sustainable civilization by changing the way we farm, our forestry practices, the way we construct habitat, the way we organize our economy, and the way we transport goods and people. I am deeply appreciative of the openness of the Chinese to consider postmodern alternatives to modern, unsustainable practices.

¹ Editor’s Note: This essay by the late Dr. Cobb appears to have been previously unpublished in English. The manuscript was found in the Center for Process Studies archives. A version of this essay was translated into Chinese by Li Yitian and published in *Marxism and Reality (Bimonthly)*, Issue 6, 2007. We are grateful to include Dr. Cobb’s voice in the first installment of this Journal of Ecological Civilization Studies. While some of the remarks are dated—references to the world as it was 20 years ago—the core of his argument about the nature of ecological civilization remains insightful.

But we all know that there is enormous resistance to making the changes needed for a sustainable society. This resistance comes, of course, strongly from those who have a vested interest, economic and political, in destructive modern practices. But it also comes from ordinary people who, in fact, do not benefit from the present patterns and are the first to suffer from their negative social and ecological impact. Even when the need for dramatic change is rationally acknowledged, often the resistance remains. Even though they may know that riding bicycles is far better for their health and for the environment than driving a car, they have internalized a "civilized" value system that makes them want to join the car drivers. One approach to understanding this is through reflection on the character of the civilization that almost all of us prize.

One meaning of "civilization" is identical with "culture." When used in this sense, to be civilized is to be human. Every human group has a culture that shapes its shared life. One can even find such cultures among other social animals. We call it "culture" when behavior patterns are not simply instinctive but are, instead, transmitted from generation to generation by teaching.

Nevertheless, the term "civilization" favors some cultures over others. Hunting and gathering people are normally not considered "civilized." Indeed, the usual meaning of "civilization" is bound up with the rise of cities. Where we find cities we almost necessarily speak of civilizations. For practical purposes, by civilization we mean the culture of cities.

The term "civilization" focuses attention on the "high" cultural attainments of cities. Even in ancient cities we expect to find some system of written language. The great architectural achievements—without which cities are not possible—impress us. There is specialization of labor, and there are great advances in technology. There are also complex structures of authority. Clearly the life in ancient cities is more like contemporary life than was that of hunting and gathering societies or even gardening ones.

We usually do not put equal weight on the negative aspects of the change. The complex structures of authority we admire subordinated and exploited the majority of people in ancient cities. Usually a large part of the population was made up of exploited workers, many of whom were slaves. It is they who built pyramids, temples, and palaces. The "great" civilizations were usually empires, brought into being by military conquest and systematic exploitation of others. Typically, in advanced civilizations, as military action became more and more important, males took control of public life, and women became their property. In short, if we judge by the quality of life of the majority of people, the great civilizations were inferior to the earlier hunting and gathering societies.

We should not rush to the judgment that in the modern world all this has changed, and that civilization has become benign. It is true that slavery has been abolished, and this is a great gain. And it is true that women have recently gained a greatly improved public status. And that is also a great gain. These changes are partly due to the industrial revolution, which has brought about the greatest differences between ancient civilizations and modern ones.

But Marx is witness, if we need one, to the terrible social consequences of the industrial revolution. Before the industrial revolution many people earned their livings by engaging in personally satisfying, creative work. The industrial revolution replaced that with the boredom and dehumanization of the assembly line. Before the industrial revolution most people lived in the countryside on individual farms or in small villages. Today there has been a massive movement to urban slums.

I am descended from a slave-holding family in the American south. The owners of these slaves argued against their northern critics that their slaves were better off than the factory workers in northern cities. I do not make this argument, but it had some truth. The owner of a slave had a financial interest in the slave's health. This set some limit to the slave's exploitation. The owner of a factory had no investment in his workers. If they sickened and died, there were others ready to take their places. Gradually, and partly thanks to Marx, industrial workers improved their lot in highly industrialized countries. But as the economy becomes global, once again capital can exploit workers in developing countries with little concern for their well being. There are always more. It is safe to say that the majority of city dwellers today have less satisfying lives than did their pre-civilized ancestors. Our deep-seated assumptions about the virtues of civilization are, at a minimum, exaggerated.

The social history of the human race is important to understand. However, our concern here is with the relation of human beings to the natural world. A fully ecological relation is one in which human beings function as a part of a larger natural ecosystem, in other words, like other species. Such a natural ecosystem tends to become richer over time. The soil becomes deeper; the plants become more varied and better able to survive temporary changes in weather; and animal life becomes more abundant. Taking the planet as a whole, until ten thousand years ago, this trend was dominant, despite many local ups and downs due especially to changes of climate sometimes resulting in desertification or prolonged ice ages. There were also huge setbacks from cataclysmic events such as huge meteors striking the earth, earthquakes and tidal waves of enormous size, and huge volcanic eruptions.

Even hunting and gathering peoples sometimes played quite negative ecological roles. It seems that they wiped out many species of larger mammals in North America, for example. They probably played a role in the extinction of the mammoth globally. They set fires that changed the nature of eco-systems, often for the worse. Nevertheless, on the whole, they felt themselves to be one species among others as children of Mother Earth. They competed with other species and took pride in their victories. But basically they adapted to the natural contexts in which they found themselves, considering themselves to be part of a larger whole, and many of them avoided exploiting that context in a way that would destroy its ability to sustain human life indefinitely.

The expansion of hunting and gathering into gardening or small scale agriculture was the beginning of a fateful process. Everywhere in the world it has led to some degree of degradation of nature. It involved domestication of plants and was accompanied by domestication of animals. This involved management of nature rather than adaptation to it. But in itself it did not change the picture dramatically. When Europeans arrived on the East Coast of the United States, they came to a land that had supported a fairly large population for thousands of years. To Europeans it appeared uncivilized, since there were no cities. Instead there were vast forests, clear lakes and rivers, and abundant wild life. In short, they found a healthy ecosystem, largely undamaged by its human inhabitants. The indigenous people understood themselves as part of the natural world and they lived ecologically within it.

Just for this reason, to the civilized Europeans of early modernity, the indigenous people appeared to be "savages" with no real claim to the land and hardly any to life itself. Accordingly, they became victims of near genocidal practices on the part of the civilized. The magnificent ecosystems that had supported their cultures were understood as "wilderness" to be "tamed" until they became "natural resources" for "economic development." This meant that the forests disappeared; the rivers became muddy; and the soil eroded.

The ancestors of these civilized, and therefore non-ecological, Europeans had once been much like the natives of what is now the Eastern United States. Let me trace very briefly the stages through which our ancestors changed from an ecological vision and lifestyle similar to that of the natives of the eastern part of what is now the United States to what we have become. I am indebted to Anand Veeraraj who wrote a dissertation studying this process. He focused on Mesopotamia and the stages of agriculture and city life there. The population of Mesopotamia and other river valleys grew as global weather changes turned previously habitable land in North Africa and the Middle East into desert.

Population density soon wiped out most animal species in the region as well as the remaining forests. Irrigation was essential to the intensive fanning that was now required for survival. Nevertheless, initially the soil was rich, the land was sufficient, and nature was viewed as the generous provider of human needs. Cities emerged, but they were not walled. The leaders of society were priests and priestesses who arranged for storing and distributing the crops. Most people were farmers, and farming was a respected occupation. Society was relatively egalitarian.

Population grew, and available land became scarcer and less fertile. Salinization became a problem. The irrigation systems became more difficult to maintain. The task was now to wrest a living from an unfriendly nature. Often there were shortages. To get more land or more labor, one city would attack another. To defend themselves, cities built walls. Warfare became important. Military leaders took power from the priests and priestesses. Much of the agricultural work was done by slaves.

A further stage of alienation from nature came with the rise of empires. Military leaders of the great cities were no longer satisfied to conquer a few neighboring cities. The resources of these cities were insufficient to meet the empire's needs. It became necessary to extract resources from distant regions that had not been so thoroughly exploited. These were easy to conquer, but hard to control once the victorious army returned home. One method of reducing resistance was to bring the leaders of the conquered people back to the imperial center. They identified with their native landscape but not with the strange world into which they were exiled. If they had any contact with the land, it was digging ditches or cleaning up the irrigation system. This relation to nature was alienating. Most of them accepted the gods of the locale to which they were moved, but their attitude toward these gods was likely to be different from that of the indigenous people.

Of particular importance for the history of much of the world was the experience of the Hebrews. Not only Jews but also Christians and Muslims trace their origins to the history of the Hebrews or Israel. For Israel, as for many minor peoples of the Middle East, one major experience was the exile of its leaders.

As with other peoples, Israel's experience of exile was an existential break with their beloved natural environment. Yet its response was unusual. For most people, the gods to worship were the gods of the location where they found themselves. Israel made an opposite move. They determined that the God of Israel is not bound to any location. They could worship the God of the temple in Jerusalem also in Babylon. This view of God as transcending every natural location has enabled Judaism to survive not only the ancient

exile but subsequently the nearly two millennia of diaspora. At the same time, it has accentuated the separation of human beings from nature.

For some who belong to the Hebraic family of religious traditions, the true home of believers is another world altogether. We are wanderers and pilgrims in this one. Jews continued to long for a return to the land God had promised them, but on the whole, Christians and Muslims, by accenting the universality of God, have cut this tie to any particular location. All three traditions over many centuries have been primarily urban in character. Jews in the diaspora rarely became farmers. Christianity and Islam have been imposed on the rural population more than they have derived from them.

My formulation could easily lead to blaming the ecological failures of the West on Christianity. It deserves its share of blame. However, as a Christian, I want to point out that in the Bible, there are many resources for countering the alienation of human beings from their natural environment. Jesus himself expressed a very different feeling for nature. Christians have made progress in recent decades in repentance for their anti-ecological attitudes and practices. This has largely been through more accurate reading of our biblical sources. But this recent gain has had little effect on Western civilization.

The alienation from nature has been driven still further, and is now maintained more strongly, by secular thinkers. Descartes successfully encouraged the replacement of traditional Christian thinking of nature in organic terms with the new view of nature as a mechanism. For economists the value of any part of nature is just what price it brings in the market place. Immanuel Kant went still further in the alienation from nature. He denied that we have any basis for affirming that nature has any reality at all in its own right. Today many philosophers encourage us to focus attention on our language rather than on any external world. It is hard to see how alienation from the natural world could be more complete.

Those who are fully alienated from nature do not want to think about it. This is one reason that so many Americans have refused to recognize the fact that our lifestyle is radically unsustainable. Even today, few are willing, or perhaps able, to think about our crisis in an inclusive way.

We have made a little progress. Even our reluctant president now acknowledges that the phenomenon of global warming is real and that human activity contributes to it.² Of course, his policies still contribute to making matters worse, but some developments at the political level are now encouraging.

² Editor's Note: Dr. Cobb wrote this essay in 2007, when George W. Bush was President of the United States.

Yet none of them express an ecological vision or spirit. The fact of global warming is viewed as a challenge to find new ways to manage both nature and the human economy. Almost exclusively we seek technological solutions. We can be grateful to Albert Gore for helping to awaken the American public to the seriousness of the problem of global warming. But he gave the impression that the needed response is technological. Very likely that is his belief.

I fully support every possible gain that new technologies make possible. They will buy us a little time. But ad hoc responses to the many problems we face: desertification, loss of forest cover, the disappearance of glaciers, the pollution of water and its growing scarcity, the loss of topsoil, the salinization of once fertile soils, the destruction of fish stocks, uncontrolled genetic changes, air pollution, new diseases, decline of species of plants and animals, the exhaustion of resources, and on and on, are not sufficient. They only slow the movement to global catastrophe. We need something more than new technologies, which sometimes create more problems than they solve. We also need a change in the way we view the world and in our deepest sensibility.

Veeraraj notes that although Egypt became densely populated and urbanized for reasons similar to those in Mesopotamia, it never became alienated from nature in the way that happened there and in Israel. He attributes this to the regular annual flooding by the Nile of the agricultural land surrounding it. Nature thus renewed the fertility of the soil. However, the religious life of the West, and its intellectual history, has been far more influenced by Mesopotamia and Israel than by Egypt.

Chinese civilization arose without the harsh circumstances that alienated Mesopotamians and Hebrews from the natural world. Hence, China's move from ecological living to civilization was less wholehearted than that in the West. The Taoists prized an untamed nature and celebrated a life that conformed itself to this nature. Their influence on Chinese art leads to depicting human beings as part of the landscape rather than focusing upon them with the landscape as background.

However, Taoists may have shared the view that "ecological civilization" is an oxymoron. The sage leaves the city and goes into the wilderness. A similar pattern can be found in Buddhism. It is true that the enlightened one returns to the city. But the limitation has been that the work of the sage or the enlightened one in the city tends to be highly personal, focusing on bringing enlightenment to others as individuals. It has little to do with the development of science or of the economic, social, and political life of the city.

Accordingly, I do not believe that Chinese civilization as a whole was truly ecological before Western influence. But I do believe that it contained an ecological dimension

present in the West only in the form of occasional protest. Accordingly, there is much in ancient Chinese wisdom that can help us, and the possibility of an ecological civilization in China is greater than in the West, whose alienation from nature is the most complete of any culture in history.

Sadly, China's massive imitation of the modern, industrialized West is in danger of destroying this possibility. Just that which is of greatest value in the Chinese tradition has led Chinese, eager to "catch up" with Western technology and industry, to reject it. This is the ecological vision that has been so largely crushed in the West.³

The problem, I think, is that the ecological vision in China was not developed into a way of thinking that led to a full development of the science and science-based technology to which Western alienation contributed. Technological advances have long been the basis of military superiority. Chinese leaders, disturbed by the relative weakness of China in military terms, have looked to the alienated West as a model for the future development of China. Here they find much that is successful for short-term development. But the imitation of the West has drawn China into unsustainable forms of development that can only hasten the global cataclysm.

It is at this point that I hope a Whiteheadian form of constructive postmodernism can help. There is much in Whitehead that connects to the more ecological dimensions of traditional Chinese culture. Perhaps most important; he found that the ecological insights of ancient China can be more fruitful for contemporary science than the heavy hand of Western mechanistic thinking. He demonstrates this in some detail. We need not choose between scientific thinking at the frontier and ecological thinking. A small, but growing group of scientists in the United States, especially those who work in quantum theory, are realizing this.

Meanwhile some of Whitehead's followers are sharing with other postmodern thinkers in envisioning additional dimensions of an ecological civilization. I am not claiming that constructive postmodernists have dealt adequately with the many social, educational, economic and political matters that would be involved in a shift to an ecological civilization. But I think that here and there we have made breakthroughs that give support to the claim that ecological civilization is possible.

For the long term solutions to our problems, the way we educate children is crucial. Young children show an interest in the nonhuman world, and perhaps especially in what is

³ Editor's Note: Again, this essay by Dr. Cobb was written roughly 20 years ago. Much has changed in China over the past two decades, and in his last few years of life, Dr. Cobb regularly celebrated China's ecological efforts.

wild. In our society we educate children to think these interests are sentimental. Indeed, in cities, even interest in plants and their growth is not encouraged. Or, if living things are studied, the emphasis is on technical analysis and control, not the wonder of life itself. The changes we need are fundamental. Only a society of people who understand themselves as part of the nature that human beings have so long abused will end this abuse.

I am making just two points. First, the deep attraction and commitment to civilization has functioned over millennia to alienate people from the natural world. To recover an ecological existence requires fundamental change rather than, or at least in addition to, technological responses to successive problems.

Second, although we have actually no good examples of ecological civilization in the past, we do have hints and promising developments that justify the quest. I believe that China is uniquely positioned to pursue this quest. I hope that Whiteheadian postmodernism can help.

John B. Cobb, Jr. (1925–2024) was a pioneering process theologian, philosopher, and ecological thinker whose work helped shape the global movement for ecological civilization. A leading interpreter of Alfred North Whitehead's process philosophy, Cobb devoted his life to connecting philosophy, theology, economics, education, and ecological responsibility. Through his scholarship, institutional leadership, and cross-cultural dialogue—especially between China and the West—he inspired generations of scholars and practitioners to rethink modern civilization and work toward a more relational, compassionate, and sustainable future.

Carrying Forward the Legacy of Dr. Cobb and Composing a New Global Symphony of Ecological Civilization: A Review of the Grand Commemorative Gathering Honoring “Eco-Sage” Dr. John B. Cobb, Jr. on the First Anniversary of His Passing

Yang Lidi

Abstract: This review recounts the global online gathering honoring the life and legacy of John B. Cobb, Jr. on the first anniversary of his passing. Co-hosted by the Center for Process Studies and the Institute for Postmodern Development of China, the event brought together scholars, practitioners, and students from around the world to remember Dr. Cobb’s life, interpret his process-relational and ecological vision, and recommit to the work of building an ecological civilization. The article highlights Cobb’s continuing influence in China, his cross-cultural legacy, and the global community carrying his thought forward.

Keywords: *John B. Cobb, Jr.; ecological civilization; process philosophy; constructive postmodernism; China; cross-cultural dialogue*

Across the Pacific, from dusk in Claremont to dawn in Beijing, longing in the Eastern and Western hemispheres was woven into a single thread. As the twilight of Pacific Time February 7, 2026 spread over Claremont, the morning light of Beijing Time February 8 had already caressed the land of China. More than a hundred colleagues in the fields of process thought and constructive postmodern philosophy gathered online for a virtual commemorative meeting themed “Trusting Life” to mourn the first anniversary of the

passing of "Eco-Sage" Dr. John B. Cobb, Jr. The memorial meeting was co-hosted by the Center for Process Studies (CPS) and the Institute for Postmodern Development of China (IPDC). Dr. Andrew Schwartz, Executive Director of the Center for Process Studies, and Dr. Meijun Fan, Program Director of the Institute for Postmodern Development of China, jointly presided over this significant commemorative event.

From the moment of silent mourning at the opening to the message of new life at the end, from the in-depth review of his thoughts to the enthusiastic sharing of practices, from the intergenerational spiritual resonance to the cross-cultural integration of wisdom, this commemorative meeting, structured around seven sessions and anchored in longing and inheritance, outlined the ideological radiance and spiritual height of Dr. Cobb's life, and further united the colleagues' firm belief in carrying on his mission and forging ahead toward the future of ecological civilization.

Born in 1925, Dr. Cobb devoted his century-long life to the study of Alfred North Whitehead's process philosophy and his lifelong efforts toward the advocacy of ecological civilization. He integrated Western process thinking with the wisdom of Eastern culture, lighting a beacon of thought for humanity to break free from the predicament of modernity. The Chinese civilization has long held the tradition that "Honoring the deceased and remembering the past deepens people's moral integrity." This remembrance is not only a tribute to a giant of thought, but also a reflection on the common future of humanity, allowing Dr. Cobb's wisdom to shine more brightly in the integration of Eastern and Western cultures.

Opening & Moment of Silence

Silent mourning is the most sincere longing, a spiritual resonance transcending mountains and seas, and it aligns with the Confucian reverence that "In offering sacrifices, one should be as if the deceased were present, and as if the gods were present." It allowed every participant to have a dialogue with Dr. Cobb across time and space in their hearts. At that moment, the wind of the Pacific blended with the clouds of China. People of different languages and skin colors all felt a heartfelt sorrow for the same name and a shared conviction for the same belief.

Subsequently, Dr. Mary Elizabeth Moore, President of the Cobb Institute, and Professor Liu Xiaoting, Head of Beijing Center for Process Studies at Beijing Normal University and former Editor-in-Chief of *Studies in Dialectics of Nature*, opened the sharing with "Why We Gather." In a few words, they expressed the original intention of

this gathering. As a disciple of Dr. Cobb and a representative of Chinese process philosophy research respectively, they interpreted the significance of this commemorative meeting from Western and Eastern perspectives: to mourn a giant of thought who dedicated his life to process philosophy and the ecological cause, to inherit a constructive postmodern thinking that resolves the predicament of modernity, and to unite a global community with the goal of ecological civilization. Their speeches, like a spring breeze, dispersed the barriers of time and space, making more than a hundred colleagues deeply aware that this gathering is not only a remembrance, but also a rallying; not only a look back, but also a new start. This is a vivid embodiment of the "community spirit" advocated by Dr. Cobb, as stated in *The Great Unity* from *The Book of Rites*: "When the great way prevails, the world is shared by all." Bound by common ideals and pursuits, like-minded people are connected no matter how far apart they are.

A Life of Thought and Practice

The speech by Dr. Jay McDaniel, Chair of the Board of the Center for Process Studies, set the intellectual tone for the entire meeting. From the perspective of Whitehead's process philosophy, he condensed Dr. Cobb's spiritual legacy into six "lures for feeling", explaining to participants why Cobb's thoughts transcend time and space and become an eternal spiritual guide. Dr. McDaniel said frankly that it might be more appropriate to understand Dr. Cobb's passing as "passing forward." For he never truly belonged to the past; he "passed forward" into people's hearts and memories, and even came to us from the future, summoning later generations to move forward with the possibilities he had turned into reality. These six lures are the essence of Dr. Cobb's life of thought and practice, and even more the precious spiritual wealth he left to humanity.

1. To be curious about the whole of the world, and not to compartmentalize our knowledge into self-contained domains, and to aspire to be "organic intellectuals." He urged people to view the world from the perspective of the interconnection and interdependence of all things, regarding biology, psychology, ecology, economics and many other fields as an organic whole, and breaking the shackles of the disciplinary division of learning in modernity.

2. To be inspired by the grand dream of ecological civilization, calling on humanity to respect and care for one another, and more importantly, to care for the entire community of life. This is the cross-cultural extension of the Confucian thought of "benevolence", extending from "loving people" to "loving all things," and making the spirit of benevolence

that "One who wishes to establish himself should help others establish themselves; one who wishes to achieve himself should help others achieve themselves" the core value of ecological civilization.

3. To recognize ourselves as persons-in-community, and reject isolated individualism. He believed that communities spread outward like ripples, extending to the entire Earth Community. This is in line with the Mohist idea of "Universal love and mutual benefit," making people deeply aware that an individual's destiny is always closely linked with the destinies of others, with nature, and with heaven and earth.

4. To believe that all things possess spirit, breaking the illusion of "lifeless matter" or "meaningless existence," and pointing out that the universe is filled with *qi*—a core concept originating from Chinese Daoism. It integrates facts and values, allowing people to discover beauty in the vitality of all things, even in the face of tragedy. This is precisely the Western expression of the view of life in the *I Ching* that "The great virtue of heaven and earth is to give birth to all things," urging people to revere the intrinsic value of all things.

5. To practice kindness in daily life and live a simple, unpretentious life, replacing artificially created desires and greed with genuine needs. This aligns with the Daoist wisdom of "Embrace simplicity and purity, reduce selfish desires," as well as the Confucian way of self-cultivation that "A gentleman does not seek excessive comfort in food and lodging." With his own life as a model, Dr. Cobb interpreted that simplicity is both dignity and freedom.

6. To center our lives on love, believing that the universe is enfolded in a deeper love, living by faith, and embracing every life with tender care. This is the integration of the Buddhist spirit of "Compassion for all beings and delivering them from suffering" and the Western thought of universal fraternity, making love the spiritual bond that connects all things and builds communities.

Dr. McDaniel's interpretation is like a key that unlocks the door to understanding Cobb's thoughts, making the participants deeply aware that Dr. Cobb's thoughts are not an isolated Western philosophical theory, but the common wisdom of humanity that is deeply integrated with the wisdom of Confucianism, Buddhism and Daoism in the East. This has also laid a profound cultural foundation for the dissemination and practice of his thoughts in China.

The speech by Professor Yang Fubin, a renowned expert on Whitehead studies and Chief Editor of *The Complete Works of Whitehead*, further interpreted the great value of Dr. Cobb from the perspective of academic inheritance. As the third-generation inheritor

of Whitehead's process philosophy, Dr. Cobb's life was one of devoting himself to academic research and passing on the intellectual torch, and more importantly, one of caring for the world and fulfilling his mission. Professor Yang Fubin pointed out that in today's world, the uninterrupted inheritance of Whitehead's process philosophy research, the constructive postmodern thought becoming an important resource for reflecting on modernity, and China's ecological civilization construction obtaining a solid philosophical foundation, all benefit from Dr. Cobb's pioneering efforts and perseverance. He devoted his life to closely linking philosophical wisdom with the destiny of humanity, and used the power of thought to light a beacon for humanity to resolve the ecological crisis.

Professor Yang quoted Whitehead's view in *On Immortality*: "Every actual entity that comes into being in the universe merges its value into the entire cosmic organism, becoming material for the universe's creative advance," profoundly interpreting the true meaning of Cobb's "immortality." True immortality does not lie in the length of life, but in the depth of thought, the breadth of value, and whether the spiritual wealth left to human civilization can nourish future generations forever. Although Dr. Cobb has passed away, his thoughts have long become an important part of the universe's creative advance and the spiritual foundation for humanity to move toward ecological civilization. This immortality is the most appropriate annotation for the "Eco-Sage," just as stated in Zuo Zhuan: "The highest achievement is to cultivate virtue, the next is to render meritorious service, and the third is to leave behind wise words. These three achievements endure for all time, and this is what is meant by immortality." Dr. Cobb achieved true immortality through cultivating virtue, rendering meritorious service and leaving behind wise words.

Personal Remembrances and Testimonies

The session of Personal Remembrances and Testimonies brought Dr. Cobb's image from the palace of thought to vivid life. The sharing by Dr. Andrew Schwartz, Executive Director of the Center for Process Studies, Ms. Yan Xiaoxia, Founder of Beijing Whitehead Kindergarten, and Professor Yang Li of Harbin Normal University, told of Dr. Cobb's personal charm and the practical power of his thoughts through personal experiences, making the longing concrete and warm. Among them, Professor Yang Li took her connection with process philosophy and Dr. Cobb as the clue, showing how Cobb's thoughts moved from theory to practice, how they changed a person's way of thinking, and even the educational practice of a group. Professor Yang Li's bond with Whitehead's philosophy began with an academic report by Dr. Zhihe Wang in 2007, and behind this

bond was Dr. Cobb's persistent efforts to uphold and quietly inherit Whitehead's philosophy in an era when it was not recognized.

In 2013, Professor Yang Li met Dr. Cobb for the first time in Claremont, and this encounter became an important turning point in her academic career and educational practice, making her deeply feel the importance of Whitehead's philosophy and educational thought for Chinese education. Since then, Professor Yang Li has led her graduate students in the "Evening Reading of Whitehead" for more than nine years, integrating process-relational thinking into curriculum and teaching research. Since 2010, she and her graduate students have never missed the 18 Process Summer Academies in China, making Whitehead's thought their "insightful eyes" to see the world. She quoted Cobb's judgment in *Why Whitehead?*: "The world needs a certain kind of synthetic thinking. Whitehead comes closest to providing the kind of synthetic insight universally needed." Moreover, with Cobb's pursuit that "My greatest interest lies in the application of this thought," she integrated process philosophy into her graduate students' theses and works, turning abstract philosophical thought into an effective tool to solve China's educational problems. Professor Yang Li's sharing let the participants see the strong vitality of Cobb's thoughts. The best way to remember a great sage is to turn his thoughts into power to change the world, and this is exactly what Dr. Cobb most hoped to see.

Cobb's Relevance for Our Time

The session of Cobb's Relevance for Our Time, which highlighted the contemporary value of Cobb's thoughts, featured speeches by Dr. Mary Evelyn Tucker, Dr. John Grim, Professors at the Yale School of the Environment and two leading figures in the global discussion of Confucian ecological wisdom, Mr. Li Wenliang, winner of the "Cobb Common Good Award" and President of Dongguan Getwell Co., and Ms. Yu Siquan, a new farmer and ecological writer. From the two dimensions of cross-cultural dialogue and local practice, they interpreted the contemporary and global significance of Dr. Cobb's thoughts, and especially highlighted their deep alignment with Chinese culture and China's ecological civilization construction.

The speech by Dr. Tucker and Dr. Grim revealed the origin of Dr. Cobb's cross-cultural vision. Born in Kobe, Japan in 1925, Dr. Cobb spent his teenage years immersed in East Asian culture. The racial discrimination in the American South deeply troubled him, while the inclusiveness and wisdom of East Asian culture earned his admiration. This early experience became the starting point of his cross-cultural dialogue.

The academic dialogues he co-chaired with Masao Abe, a great Zen master of the Kyoto School in Japan, became a model of cross-cultural communication, pioneering a new direction of open communication, patient listening, in-depth learning and mutual transformation, and laying the foundation for the formation of the field of cross-cultural spiritual dialogue. Cobb's cross-cultural exploration eventually took deep root in China. His sincere understanding of Chinese culture and philosophy enabled him to work with colleagues such as Dr. Zhihe Wang and Dr. Meijun Fan to promote the creative transformation of traditional Chinese culture and the construction of ecological civilization, and assist China in establishing more than 30 process and constructive postmodern centers. Tucker and Grim compared Cobb's influence on China to that of John Dewey, who promoted pragmatism in China in the early 20th century. This evaluation appropriately highlighted the profound significance of Dr. Cobb for the Chinese ideological and practical circles. Dr. Cobb's thoughts have formed a deep resonance with China's ongoing ecological civilization construction, and his emphasis on reflecting on modernity is exactly the inherent demand for China to break through the unsustainable development model and pursue the harmonious coexistence of humans and nature.

If the speech by Dr. Tucker and Dr. Grim demonstrated the cross-cultural value of Cobb's thoughts, Mr. Li Wenliang's sharing let the participants see the vivid practice of Cobb's thoughts in China's local ecological enterprises. When Mr. Li Wenliang first met Dr. Cobb in Shenzhen in 2018, Cobb's words—"Out of over two hundred countries worldwide, only China has proposed ecological civilization. The hope for ecological civilization lies in China"—took root in his heart like a seed. In 2024, after listening to Mr. Li Wenliang's practice report on Getwell's "51-25-24 Equity Scheme of Harmony between Heaven, Earth and Humanity," the centenarian Dr. Cobb called it a "gift for my centennial birthday." This recognition is a great affirmation of China's local ecological practice. The "Harmony between Heaven, Earth and Humanity" ecological enterprise governance model promoted by Mr. Li Wenliang is exactly a feasible path for enterprise ecological transformation by integrating Cobb's ecological civilization thought with the traditional Chinese wisdom of "Unity of man and nature." As the climate crisis intensifies day by day, Cobb's call that "Humanity must shift from the self-destructive path of industrial civilization to ecological civilization" is deafening. The practice of Chinese enterprises is confirming his judgment and fulfilling his dream.

He Lai, Vice President of the Jilin Provincial Federation of Social Sciences and a senior professor at Jilin University, and Dr. Attila Grandpierre, a Hungarian expert in ecological civilization studies and Research President of the Budapest Centre for Long-Term Sustainability in Hungary, together with fellow scholars, commemorated Cobb's lifelong academic dedication and exemplary personal character. He Lai said that he was invited by Dr. Zhihe Wang and Meijun Fan to visit the Center for Process Studies, Claremont, and was lucky to meet Dr. Cobb, and he has deeply missed him for more than 20 years. In his view, Dr. Cobb is a philosopher who achieved a high unity of personal conduct and academic pursuit, which reminded him of Feuerbach's view that true philosophy is not only about writing books and expounding theories, but also about shaping the person who expounds them. From his interactions with Dr. Cobb and his academic works, he gained extremely important enlightenment. Seeing numerous scholars participate in the meeting and his thoughts spread widely around the world and form an important intellectual trend, Professor He Lai believed that Dr. Cobb's thoughts and personal demeanor will continue to influence people's beliefs and also have a profound impact on China's development.

Dr. Attila Grandpierre pointed out that Dr. Cobb's lifework has been animated by a singular focus: addressing humanity's most urgent challenges by preserving and healing the world upon which all life depends. Central to his vision is the recognition that living beings are feeling, acting beings—and that human identity is thoroughly interdependent with all life and with Nature as a whole. To grasp this interdependence, he insists, we must understand life as a force present everywhere, including in us. It is not merely what makes us alive; it is what heals our sicknesses and injuries, what drives evolution toward ever more complex forms, and what finally flowers into love and thought. This force—with which we can seek to align ourselves—is the process that gives living beings life and enriches it; it is sacred. The greatest power in the world, he teaches, is the power that comes from faith in Life and the ideas this faith inspires. One and the same factor in the Universe produces and sustains life wherever it occurs, encouraging in humanity the widest possible extension of concern to all living beings. If by "world" we mean the encompassing meaningful order, then Life itself is the creator of that world—not only purposeful in itself, but the source of all derivative purposes in living things. Because what makes for life, love and hope is not simply the decision of any individual, but a Spirit that moves us all, the Spirit of Life remains at work in ever new and unforeseeable ways, countering and circumventing the obstacles humanity places in its path. At the planetary level, the *raison d'être* of

humanity—and of every person—is to contribute to enriching the web of life with novel, unique and unchangeable values.

Trusting Life: A Shared Moment of Silence and Response

Different voices, the same longing, made the emotions of this commemorative meeting more intense. The session of Trusting Life: A Shared Moment of Silence and Response pushed the emotions of the meeting to a climax. Dr. Andrew Schwartz read an excerpt from Dr. Cobb's *Ten Ideas for Saving the Earth*: "I believe that inspiration within and beneath the creativity of the universe is divine. We humans have the unique responsibility to protect one another and the rest of the natural world. We are beckoned by God to be caretakers of nature." Dr. Fan Meijun, Program Director of the Institute for Postmodern Development of China and Dean of the Cobb Ecological Academy, read a classic sentence from *Five Foundations for an Ecological Civilization*: "The need is to move beyond preoccupations with my calling to our calling as creatures among creatures on a small planet...With the courage to challenge modern ways of thinking today, there is hope for humanity tomorrow." These words are the exhortations Dr. Cobb left to humanity, his faith in life and his expectations for the future. The subsequent shared moment of silence allowed every participant to have a dialogue with Dr. Cobb in their hearts, with their own inner selves, and with the entire community of life. As the melody of Passing Light, a piece co-created by Dr. Meijun Fan and AI, flowed, the life of Dr. Cobb, who was like a stream of light illuminating humanity's ecological path, emerged in the hearts of the participants. And this light will surely be passed on by countless ecological practitioners, shining together and spreading across the world.

Carrying Forward the Torch

The session of carrying Forward the Torch is the spiritual core of this commemorative meeting. The impassioned speeches by Professor Guo Haipeng, Director of the Center for Whitehead Studies at Beijing Normal-Hong Kong Baptist University (BNBU), Ms. Ding Shasha, Secretary-General of the Luoyang Cobb Workstation, and Dr. Liu Wei, President of the Hebei Psychological Counselors Association, accepted the ideological torch passed on by Dr. Cobb and made a promise to move forward. Professor Guo Haipeng delivered an affectionate speech titled "From Commemoration to Continuation: Whitehead, Cobb, and the Work Ahead." He said that the best way to remember Professor Cobb is to carry on his legacy, advance his cause, and do things that would bring him comfort. He shared

the progress of the Center for Whitehead Studies. In 2025, with the strong support from all parties, significant progress was made in the translation, compilation and publication of *The Complete Works of Whitehead*. Several volumes have been published, and the remaining volumes are progressing in an orderly manner. The publication of this complete collection will provide a more solid and comprehensive textual foundation for a systematic and in-depth understanding of Whitehead's thought, and help the Chinese academic community participate in global philosophical dialogue. In addition, 2025 marked the 100th anniversary of the publication of Whitehead's seminal work *Science and the Modern World*. To commemorate this occasion, the center, in cooperation with the Center for Process Studies in the United States, successfully held an international academic symposium titled "Science and the Postmodern World: A Centennial Review of Whitehead's Vision and Intellectual Legacy." Scholars from China and the United States transcended the boundaries of time and space to jointly review the century-old wisdom of this philosophical giant, explore the enlightenment of his philosophy for contemporary ecological civilization, and let classical thought regain vitality in the current context. With the approach of the 14th International Whitehead Conference, this ideological journey will continue to extend, writing a philosophical chapter for the future between inheritance and innovation.

As a representative of practitioners, Ms. Ding Shasha shared her exploration of bringing Cobb's thoughts from the study to public life. As the Secretary-General of the Luoyang Cobb Workstation and also responsible for the practice of the Songshan Global Geopark Research & Study Museum and the Longmen Aquarium, she deeply understands that museums and aquariums are not only places for displaying knowledge, but also stages for disseminating ecological civilization. She proposed to transform the venues from "information disseminators" into "platforms for consciousness connection and action catalysis", making philosophy perceptible and turning the community of life from abstract academic language into a heartfelt embodied experience. Transforming traditional knowledge display into relational and process narratives, making every visit an immersive dialogue about symbiosis, responsibility and hope.

Dr. Liu Wei, President of the Hebei Psychological Counselors Association, fondly recalled Cobb's enlightenment for his career—integrating Western psychology with the traditional Chinese classic *The I Ching*. This enlightenment opened a new realm for his research, allowing him to take a path of Sino-Western integrated psychological services in practice and forge ahead in exploring the "organic healing with Chinese characteristics."

Dr. Liu Wei affectionately talked about the purple magnolia in Cobb's courtyard and his life attitude of "dancing with nature", and frankly said that "spring has never left"—he expressed his longing for Cobb with poetic language, moving everyone present.

Passing the Torch, Carrying on the Legacy with New Vigor

The closing session of Acknowledgments and Farewell was the end of longing and the beginning of hope. The acknowledgements by Dr. Bruce Hanson, Vice President of the Institute for Postmodern Development of China (IPDC), and Dr. Zhihe Wang, Executive Director of (IPDC), made the participants feel the warmth and strength of this commemorative meeting. The most touching moment was the speech by Chen Jirong, a high school student. This young girl from Beijing No.11 High School came into contact with Whitehead's academic thought and Cobb's ideas at the 18th Process Summer Academy held at Zhejiang Normal University in 2025, thus opening a completely new perspective to see the world. She frankly said that Cobb's constructive postmodern thought taught her to view the world from a holistic and connected perspective, bid farewell to one-sided thinking, integrate different disciplines, and gain a deeper understanding of building a harmonious and sustainable society. Under the guidance of process philosophy, she has improved her ability to solve problems in practice and hopes to take philosophy as her research direction in university in the future, contributing to humanity's solution to ecological problems. The speech of this young scholar let the participants see the future of Cobb's thoughts, and also made people firmly believe that Cobb's cause will surely have successors.

Finally, Dr. Zhihe Wang reaffirmed the value of Cobb's thoughts. For him one of Dr. Cobb's greatest contributions is that he helped build a process community, a constructive postmodern community and an ecological civilization community on a global scale, and "mutual fulfillment and helping others fulfill their goodness" is the code of this community. Dr. Cobb practiced organic language throughout his life: "Speak warm words, nourishing words, responsible words and constructive words." And his words are exactly a reflection of his inner vision and great pattern. In conclusion, "Process philosophy makes you wise; ecological civilization brings you happiness. Let us join hands, inherit the intellectual legacy of Cobb, and strive for the creation of a global ecological civilization." With the Chinese New Year wish of "May success come at once," Dr. Wang brought this commemorative meeting to a successful close.

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The Building Blocks of Ecological Civilization: Five Fundamental Harmonies between Nature and Humanity

Philip Clayton

Abstract: This article argues that the Anthropocene should be understood as an ongoing event of planetary disharmony caused by humanity's disruption of the biosphere. In response, it proposes five fundamental harmonies as building blocks of ecological civilization: human and planetary health, culture and nature, part and whole, receiving and giving, and humanity and the biosphere. Together, these harmonies point toward the Great Turning from industrial growth society to a life-sustaining civilization.

Keywords: *Ecological civilization; Anthropocene; harmony; planetary health; biosphere; Great Turning*

“The Anthropocene discussion focuses attention on a fundamental observation: humanity and nature are deeply intertwined... Nature would persist in the absence of humanity, but humanity cannot exist without nature.” (S.T. Jackson¹)

“The Anthropocene represents a new phase in the life of both humankind and the Earth, when natural forces and human forces become intertwined, so that the fate of one determines the fate of the other.” (J. Zalasiewicz et al.²)

¹ Stephen T. Jackson, “Humboldt for the Anthropocene,” *Science* 365 (6458): 1074–1076, published September 13, 2019. DOI: 10.1126/science.aax7212.

² See J. Zalasiewicz, M. Williams, W. Steffen, and P. Crutzen, “The New World of the Anthropocene,” *Environmental Science and Technology* 44:7 (2010): 2228–31. DOI: 10.1021/es903118j.

Introduction

Scientists tell us that the summer of 2024 was the hottest summer in the northern hemisphere in 2000 years. September 2024 alone was an astounding 0.5 degrees Celsius hotter than the summer of 2023 (that is, almost a full degree Fahrenheit hotter) and more than 1.5° C above average. We heard climate scientists struggling to find words for the staggering rate of global warming: “Unnerving.” “Mind-boggling.” “Absolutely gobsmackingly bananas.”

Human choices are having devastating effects on ecosystems around the world. Greenhouse gases are at their highest levels in four million years; average temperatures are higher than they’ve been since before the Stone Age; ecosystems are rapidly being destroyed by climate change and human encroachment; and species are going extinct at a faster rate than in hundreds of thousands of years. Psychologists have a new name for the fears that arise as people begin to realize the seriousness of this situation: “*eco-anxiety*.”³

This is the first time in history that humanity has faced a truly global challenge of this kind. To respond appropriately, two things are required. First, we have to grasp what it means to have “the whole world in our hands” in this way. Then we have to learn to think and feel in new ways in order to act appropriately.

What is the root cause of this crisis? In the following pages I would like to defend one specific answer: *our species has disregarded the harmony of nature, and the need to harmonize our relationship with nature*, leading to the growing instability of parts of the biosphere and to the growing danger of ecosystems collapse.

If this thesis is correct and disharmony is at the root of environmental collapse, then *reestablishing harmony* is the only pathway to a sustainable, genuinely ecological civilization. Many lines of argument support this thesis. In the following pages I would like to explore the idea that *five specific harmonies* are the building blocks of an ecological civilization.

The Anthropocene changes everything

For decades scholars have been saying that we have entered a new geological “epoch,” the Anthropocene—a new period when the human species has become the dominant

³ Maxime Boivin, Anne-Sophie Gousse-Lessard, and Nicolas Hamann Legris, “Towards a unified conceptual framework of eco-anxiety: mapping eco-anxiety through a scoping review,” *Cogent Mental Health* 4:1 (2025), 2490524. DOI: 10.1080/28324765.2025.2490524.

influence on the planet. This proposal was developed by a group of leading geologists, known as the Anthropocene Working Group, who worked for 15 years to defend this view. A geology sub-commission rejected the proposal, and on March 20, 2024 the International Union of Geological Sciences (IUGS) voted against the idea that the Anthropocene is a new geological epoch.

This finding should not be misinterpreted, however. It means that the IUGS does not believe that the Anthropocene meets geologists' criteria for a new "epoch" in the geological history of our planet. Instead, many geologists now agree, the Anthropocene should be understood as an "event."⁴ As the well-known geologist Mark Maslin has argued in a new publication, "the Anthropocene is better understood as an intensifying, ongoing planetary event." He continues,

The Anthropocene is now an informal term used to mark when human actions began to have a global impact on Earth's environment. It powerfully expresses the fact that human activity is having geological-scale impacts on Earth, which could last millions of years.⁵

Humans have torn down a large percent of the global forests, have reduced complex biosystems to billions of acres of cropland, have built dams and diverted waterways, and have covered the face of the planet with cities. Since the Industrial Revolution began (roughly 1840), human activities have been increasing planetary temperatures.

The damage increased after 1950. These are the years when nations began test explosions of nuclear warheads. More than 2000 hydrogen bombs were exploded by eight countries, about half of them by the US.⁶ For example, a single nuclear warhead detonated by the United States——on an atoll in the Pacific Marshall Islands in 1952——produced a blast 700 times more powerful than the bomb the United States dropped on Hiroshima in

⁴ This proposal was first made by a group of geologists in 2021 and has been widely accepted since that time. See Philip L. Gibbard, Andrew M. Bauer, Matthew Edgeworth, et al., "A Practical Solution: The Anthropocene Is a Geological Event, Not a Formal Epoch," *Episodes Journal of International Geoscience* 45: (2021): 349–57. Doi.org/10.18814/epiugs/2021/021029.

⁵ Mark A. Maslin, "Anthropocene: How humanity created the current global environmental crisis, and how we can overcome it," in Philip Clayton and Jaeha Woo, eds., *Climate Change: What Must Be Done* (London: Routledge, 2026), 61.

⁶ For more data on nuclear testing, see the United Nation report, online at <https://www.un.org/en/observances/end-nuclear-tests-day/history#:~:text=The%20United%20States%20conducted%201%2C032,tests%20between%201960%20and%201996>.

1945.⁷ Today, after thousands of these explosions, radioactive trace elements have been distributed across the entire globe, from the highest mountains to the deepest ocean floors.

Clearly that is a global impact. It's also an impact that can be measured by scientists. It's only been in the last few years that precise empirical evidence of humanity's global effects have been discovered. Crucial evidence comes from Crawford Lake, a small lake that lies one hour west of Toronto in eastern Canada. Because of the highly unusual features of Crawford Lake, when samples of the chemical composition of the atmosphere settle to the bottom of the lake, they are sealed into distinct layers for each summer and winter and preserved for hundreds of years. This means that each layer in the lake can be precisely dated.

Core samples have now been removed from the lake and analyzed. They provide a precise history book of the chemical composition of the atmosphere that goes back for centuries. Crawford Lake reveals close to 1,000 years of human impact, year by year. What the geologists discovered is that the effects from the last 70 years are so radically out of line with anything in the past that the Canadian Geographic describes this new period as

“the Great Acceleration.” That's the period after the Second World War when human activity began to overwhelm Earth's operating systems. Population surged. So did industry, driven by burning fossil fuels, which loaded the atmosphere with carbon dioxide. Add to that plastics, nuclear tests, nitrogen-based fertilizers and species depletions.⁸

Commenting on the data, Professor Waters, a geologist at the University of Leicester, writes, “When you combine [the data points] and read the stories that they tell you, [they] show you that there is this very significant and very rapid change to the environment in a very short period of time.” The Canadian Geographic journal summarizes the concrete results, “By 1950 or so, a rapid, dramatic increase of carbon-based particles shows up from industrial processes, including coal-fired steel-making in a nearby Hamilton foundry, as

⁷ The Arms Control Center publishes a fact sheet on its website; see <https://armscontrolcenter.org/fact-sheet-thermonuclear-weapons/>.

⁸ Alanna Mitchell, “The Anthropocene is here — and tiny Crawford Lake has been chosen as the global ground zero,” *Canadian Geographic*, July 11, 2023; updated Mar 26, 2024. Dr. Mitchell's report is available online at: <https://canadiangeographic.ca/articles/the-anthropocene-is-here-and-tiny-crawford-lake-has-been-chosen-as-the-global-ground-zero/>.

well as a rapid rise in plutonium from nuclear testing, a change in nitrogen isotopes from fertilizer use, and the chemical fallout from acid rain.”⁹

In short, we are now in the midst of the Anthropocene Event. For better or worse, the age of human dominance of the planet has arrived.¹⁰

What kind of event is the Anthropocene?

Scientists tell us that the last 200 years have become an extended Event of imbalance in the Earth’s history. The cause is clear: our species has created disharmony in the biosphere, leading to the instability of numerous ecosystems. The environmental crisis is not something that happened to humanity; instead, it expresses a human-caused disharmony that is threatening the delicate interconnections between species on this planet.

Raymond Zhong recently published a significant article in the *New York Times* with the title, “For Planet Earth, This Might Be the Start of a New Age.”¹¹ We might call this new age the age of “Great Disharmony.” As one reader commented on Dr. Zhong’s article, “We don’t know how our end will come, but we seem to be trying our hardest to meet it as soon as we possibly can.”¹² Or, as S.T. Jackson wrote in *Science* magazine, “Humanity and nature are deeply intertwined... Nature would persist in the absence of humanity, but humanity cannot exist without nature.”¹³

In an influential book, David Korten calls the moment we are living in “the Great Turning,” using the famous term first introduced by Joanna Macy.¹⁴ The ancient notion of harmony, I suggest, is the concept that can guide us as we decide where and how to turn. After all, it is a fundamental concept in both traditional Eastern (e.g., Chinese) and traditional Western philosophies. In the remainder of this article I wish to explore the five harmonies that are required to reestablish equilibrium between nature and humanity. I suggest that each of these harmonies provides an important building block for ecology, and

⁹ Mitchell, *ibid.*

¹⁰ For an image of the Crawford Lake core sample, see: <https://www.youtube.com/watch?v=LP3sWGCiekI>.

¹¹ Raymond Zhong, “For Planet Earth, This Might Be the Start of a New Age,” *New York Times*, December 17, 2022, online at <https://www.nytimes.com/2022/12/17/climate/anthropocene-age-geology.html>. A version of the same article appeared on Dec. 18, 2022, Section A, Page 1 of the New York edition with the headline “The Next Epoch Of Planet Earth Might Be Today.”

¹² All the comments about the article quoted in the text are taken from the Comments section of the online version of the original New York Times article; see note 11 above.

¹³ See note 1, above.

¹⁴ David C. Korten, *The Great Turning: From Empire to Earth Community* (San Francisco: Berrett-Koehler; Bloomfield, CT: Kumarian Press, 2006).

no truly ecological civilization can exist without all five of them. They are therefore essential for the “Great Turning” that lies ahead of us.

Five Fundamental Harmonies between Nature and Humanity

(1) The Harmony of human health and thriving, and planetary health and thriving

A collaboration between the Rockefeller Foundation and the journal *Lancet* produced one of the founding documents of the new field of planetary health. In their Commission’s study, “Safeguarding Human Health in the Anthropocene Epoch,” Whitmee and his colleagues advanced the now-famous thesis:

The concept of planetary health is based on the understanding that human health and human civilisation depend on flourishing natural systems and the wise stewardship of those natural systems. However, natural systems are being degraded to an extent unprecedented in human history.¹⁵

When the biosphere is healthy—when it is thriving—then humans can be healthy as well. The harmony between human health and planetary health has emerged as a guiding principle for human decision-making. In fact, The Commission’s concept of “wise stewardship of natural systems” shows parallels, for example, with the traditional Chinese notion of harmony (和, hé).

(2) The harmony of culture and nature

We are now in a new period. Older solutions are no longer enough. As Jürgen Renn notes in his groundbreaking book *The Evolution of Knowledge: Rethinking Science for the Anthropocene*, “In our period, the grand challenges are encountered in their aftermath... We can no longer categorically segregate culture from nature but must face the fact that these spheres are inescapably mingled.”¹⁶ It’s not enough to treat human health on an individual level; entire cultures can be healthy or unhealthy; and unhealthy cultures are the most likely to damage the natural environment around them.

In his book *The Politics of the Anthropocene*, John Dryzek expresses this point in a powerful way. He argues that living well in the Anthropocene

¹⁵ S. Whitmee, A. Haines, C. Beyrer, et al., “Safeguarding Human Health in the Anthropocene Epoch: Report of The Rockefeller Foundation–Lancet Commission on Planetary Health,” *The Lancet* 386 (2015): 1973–2028. DOI: 10.1016/S0140-6736(15)60901-1.tail. The quotation is taken from p. 1974.

¹⁶ Jürgen Renn, *The Evolution of Knowledge: Rethinking Science for the Anthropocene* (Princeton: Princeton University Press, 2020), 408.

requires a capacity to rethink what nature means, embodying that capacity in institutions, and using that capacity to shape environmental policies that cultivate conditions for flourishing into the future rather than returning to the past.”¹⁷

Wise environmental policies are clearly essential, but they are not enough by themselves. Cultures of consumption need to be transformed until they live harmoniously with their surrounding environment in that way that traditional Indigenous cultures were able to do.

(3) The Harmony of Part and Whole

Another reader of Professor Zhong’s article, quoted above, uses a dramatic analogy between ecology and medicine to describe the present situation:

... If we consider the entire planet as one big living organism, this species, the human species, is like a cancer that is killing the current ecosystem.

The harmony of part and whole is pervasive through the natural world. Consider the importance of deep harmonies throughout nature and culture, including:

- The harmony of microsystems and macrosystems.
- The harmony of an individual with her community.
- The harmony of a community with its ecosystem and region.
- The harmony of a city with its surrounding nature, expressed for example in a circular economy.
- The harmony of a nation with other nations. This means not putting its economic interests and its ambitions for power and control above the global community.
- Finally, the harmony of individual creativity and the common good.

When we learn how harmonious relationships work, as in these six examples of harmony, we begin to see that they all grow out of an even deeper, foundational harmony.

(4) The Harmony of receiving and giving

Another reader of Professor Zhong’s article employs an even more dramatic metaphor to draw attention to the danger:

¹⁷ John S. Dryzek, *The Politics of the Anthropocene*, (Oxford: Oxford University Press, 2019), 9.

Nature is dying at our hands. Our beautiful blue Earth is in the intensive care unit, mostly past the point of being saved, due to the stubborn failure of humans to admit that we are the most destructive force to hit the planet since the asteroid destroyed the dinosaurs.

Only a circular economy is sustainable, which means maintaining a harmony between what we take from the earth and what we give back to the earth. Kim Polman, the founder of the international NGO “Reboot the Future,” describes this harmony using the most universal ethical principle of humanity. Known in English as the Golden Rule, this principle is found in virtually all cultures. It draws attention to the foundational role of the harmony of receiving and giving. But instead of using the usual formulation, “Do unto others as you would have them do unto you,” Kim Polman reformulates the Golden Rule to emphasize the Earth: “Treat others and the planet as we would wish to be treated.”¹⁸

(5) Finally, the harmony between humanity and the biosphere

An ecological or “harmonious” civilization, just like a truly sustainable and ecologically sound society, will need to manifest certain basic characteristics. As Fred Magoff, the well-known environmental socialist, emphasizes, it will need to slow economic growth after basic human needs are satisfied. It will also need to promote, encourage, and reward the positive human traits of cooperation, sharing, empathy, and reciprocity. And it must operate with respect for, and care of, the environment—locally, regionally, and globally.¹⁹

Certain Western religious traditions have long claimed that humans somehow stand outside of nature. According to a text that is sacred for both Jews and Christians, God told Adam and Eve, “Be fruitful and multiply, and fill the earth and subdue it; rule over the fish of the sea and the birds of the air and every creature that crawls upon the earth” (Genesis 1:28). This verse is often interpreted to mean that humans are an exception to the principles of nature that apply to all other animals. When people believe that they were created to rule the earth and “subdue” it for their own wants and desires, they no longer observe the harmony between humanity and the biosphere. The global environmental crisis can be traced back to this mistaken belief.

¹⁸ For more on Kim Polman’s important application of the Golden Rule to the climate crisis, see the materials on her website, RebootTheFuture.org.

¹⁹ See Fred Magdoff, “Harmony and Ecological Civilization: Beyond the Capitalist Alienation of Nature,” *Monthly Review* 64:2 (2012); online at <https://monthlyreview.org/2012/06/01/harmony-and-ecological-civilization/>.

Summary

We now live in an age of dis-harmony, caused by the fact that the human species is out of balance with the rest of the biosphere. The crisis is not a new geological age, which would imply that it's a problem with the earth. Instead, the Anthropocene is an extended event, one that began almost 200 years ago. It's the event in the Late Modern period when one species, humanity, started to destroy the delicate harmony on which the entire biosphere depends. With every degree of temperature increase, roughly a billion people will be pushed outside the zone in which humans have lived for thousands of years. The environmental crisis is thus not something that happened to humanity; it expresses a human-caused disharmony threatening the earth's biosphere as a whole. We might call it "the Great Disharmony."

Now that we live in the Anthropocene, the ongoing "event" in which humans have become the controlling power on this planet, everything turns on what humanity decides to do with its new power. Simon Dalby frames the decision beautifully:

The Anthropocene is a key theme in contemporary speculations about the meaning of the present and the possibilities for the future... How the Anthropocene is interpreted, and who gets to invoke which framing of the new human age... matters greatly both for the planet and for particular parts of humanity.²⁰

In their important publication, Dr. Boivin and his colleagues sound a hopeful note: "The wide cultural currency of the term Anthropocene offers a rich opportunity to engage a global audience with issues that are relevant to all of us."²¹

Four fundamental human characteristics are needed for a harmonious society, or what we call an ecological civilization: cooperation, sharing, empathy, and altruism. Each of these qualities deserves our attention: Cooperation means operating together or, from its Latin root, working together. The guiding principle for cooperation is sharing: viewing the possessions that you have not as your own personal property for your advantage alone, but as resources for the good of the entire community. This priority is expressed by the famous Marxian principle, "From each according to his ability, to each according to his need."

²⁰ Simon Dalby, "Framing the Anthropocene: The Good, the Bad and the Ugly," *The Anthropocene Review* 3:1 (2016): 33–51. DOI: 10.1177/20530196156186816.

²¹ N. Boivin, T. Braje, and T. Rick, "New Opportunities Emerge as the Anthropocene Epoch Vote Falls Short," *Nature Ecology and Evolution* 8 (2024): 844–845. DOI: 10.1038/s41559-024-02392-x.

The heart of cooperation and sharing is *empathy*: feeling with and for the other. All genuine community depends on recognizing the other person as no different from oneself, having the same needs, and wanting to be treated with the same care.

And finally, the deepest principle that undergirds all of these qualities is *altruism*: thinking, feeling, and acting for the good of the other. It's true that our biology has evolved so that by instinct we seek first to protect those of our own family, tribe, or community, which means that we often view all others as potential enemies. But our philosophical and cultural traditions also call us to hospitality toward the stranger, bringing generosity to all and placing the interests of others—indeed, the interests of the biosphere as a whole—above our own interests. All five of the harmonies that we have been exploring ultimately serve altruism as their highest goal.

Conclusion: The Great Turning

As we have seen, the Anthropocene is a crisis of disharmony. The scientists were correct: our species has ignored the harmony of nature, leading to the instability of numerous ecosystems. The five harmonies that we have examined are indispensable if humanity is to end the event of destruction that scientists are calling the Anthropocene.

We return in closing to the famous article by Joanna Macy, “The Great Turning.” As Joanna Macy writes, “The Great Turning is the name for the essential adventure of our time: the shift from the Industrial Growth Society to a life-sustaining civilization”²²—an ecological civilization. In the modern period, humans created an economic system that requires economic activity, and thus human consumption, to always be increasing. The success of modernity depends on how quickly materials can be extracted from the earth and turned into consumer products, weapons, and waste.

But that is not the last word. As Joanna Macy recognized,

²² Joanna Macy's famous article, “The Great Turning,” was made available online by the Center for Ecoliteracy; see <https://www.ecoliteracy.org/article/great-turning>, posted June 29, 2009. All of the following quotations are taken from this article. Joanna Macy began using the phrase “the great turning” in the 1990s and employed it frequently after 2000; see for example “The Great Turning as Compass and Lens,” *Yes! A Journal of Positive Futures* (Summer 2006), 44–46. Her fullest treatment of this topic can be found in her book *Coming Back to Life: Practices to Reconnect Our Lives, Our World*, with Molly Young Brown (Gabriola Island, BC, Canada and Stony Creek, CT: New Society Publishers, 1998).

A revolution is under way because people are realizing that our needs can be met without destroying our world. We have the technical knowledge, the communication tools, and material resources to grow enough food, ensure clean air and water, and meet rational energy needs. Future generations, if there is a livable world for them, will look back at the epochal transition we are making to a life-sustaining society. And they may well call this the time of the Great Turning. It is happening now.²³

This revolution, this great turning, requires three changes in our actions together, and in the formation of our inner selves as eco-persons. Macy describes the three dimensions of the Great Turning:

1. Actions to slow the damage to Earth and its beings
2. Analysis of structural causes and the creation of structural alternatives
3. Shift in Consciousness

I always encourage people to read Macy's short article, which is easily available online. She devotes an entire section of her manifesto to each of the three dimensions above. Macy also describes some of the steps that will help us develop eco-citizens and eco-communities:

- Teach-ins and study groups on the Industrial Growth Society;
- Strategies and programs for nonviolent, citizen-based defense;
- Reduction of reliance on fossil and nuclear fuels and conversion to renewable energy sources;
- Collaborative living arrangements such as co-housing and eco-villages;
- Community gardens, consumer cooperatives, community-supported agriculture, watershed restoration, local currencies....

The ecological transition is not difficult to understand, and these steps are not difficult to take. The reasons for taking them should be obvious. As Macy notes, whether the majority of humans recognize it or not,

the Great Turning is a reality. Although we cannot know yet if it will take hold in time for humans and other complex life forms to survive, we can know that it is under way. And it is gaining momentum, through the actions of countless individuals and groups around the world. To see this as the larger context of our lives clears our vision and summons our courage.²⁴

²³ Joanna Macy, "The Great Turning," <https://www.ecoliteracy.org/article/great-turning>.

²⁴ Macy, "The Great Turning."

The call to the Great Turning involves every dimension of our lives. It involves our family lives, our career, our hobbies, our philosophy and spirituality, our interpretation of our own history and culture, and our priorities as we live. It is about corporate values, of course, but also about inner transformation. As Macy concludes,

These structural alternatives cannot take root and survive without deeply ingrained values to sustain them. They must mirror what we want and how we relate to Earth and each other. They require, in other words, a profound shift in our perception of reality—and that shift is happening now, both as cognitive revolution and spiritual awakening.²⁵

The ecological civilization that is coming into being is a global partnership guided by the five harmonies.

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²⁵ Macy, “The Great Turning.”

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Toward a Living Economy for Ecological Civilization: A Call for Global Partnership

Wm. Andrew Schwartz

Abstract: This paper argues that modern civilization has confused wellbeing with wealth, value with money, and progress with growth, producing an economy that undermines the web of life. Drawing on the Chinese concept of *qi* and the Wellbeing Economy movement, it proposes a Life-Centered Economy that redefines prosperity as the flourishing of people and planet. It concludes by suggesting that China's Belt and Road Initiative could help advance this new global economic paradigm.

Keywords: *economy, wellbeing, life-centered, China, Belt and Road, Qi*

The Problem: What Are We Growing?

When we speak of economic growth, what is it that we imagine growing? When we speak of development, what exactly are we seeking to develop? For most of modern history, these questions have been treated as self-evident. Yet our assumptions about growth, progress, and prosperity have created a civilization that mistakes symbols for substance. We have come to equate wealth with wellbeing, money with value, and growth with progress. In doing so, we have built a global economy that undermines the very web of life it was meant to support.

To trace the history of 20th century economics is to trace the evolution of the idea that prosperity could be engineered through ever-expanding production and exchange

(unlimited growth).¹ The modern measure of economic growth—Gross Domestic Product (GDP)—emerged from national income accounting frameworks developed by Simon Kuznets in the 1930s, later standardized in the 1940s to help governments gauge economic activity during the Great Depression and World War II. GDP counts the total monetary value of goods and services produced within an economy during a given period. While Kuznets himself warned that “the welfare of a nation can scarcely be inferred from a measure of national income,” his warning was largely ignored. What began as a pragmatic tool for recovery became the definition of success itself.

After 1945, the Bretton Woods system of fixed exchange rates reinforced this growth-centered logic, embedding industrial expansion and trade liberalization at the heart of postwar development policy. Alongside this monetary system, the Bretton Woods institutions—the International Monetary Fund (IMF) and World Bank—were created to ensure monetary stability and finance reconstruction. Together they anchored an era in which economic growth, measured by rising GDP, became synonymous with progress. For several decades the model appeared to work: factories boomed, infrastructure spread, and living standards rose. Yet beneath that success lay a dangerous illusion—that more production automatically means better lives.²

In the early 1970s the Bretton Woods system collapsed, though the Bretton Woods institutions and their underlying assumptions about growth and progress persisted. When the United States abandoned the gold standard, money lost its final link to the tangible world. Currencies began to float freely, and the financial sector—once a means of supporting production—became an end in itself. This transition marked the beginning of what economists now call financialized capitalism; an era in which a growing share of profits comes not from producing goods and services, but from owning and trading financial assets. Debt replaced savings, speculation replaced investment, and economic growth became increasingly disconnected from reality (including human and ecological wellbeing).

¹ For a good discussion on this, see Tim Jackson, *Prosperity Without Growth: Foundations for the Economy of Tomorrow* (2nd ed., Routledge, 2017); see also Herman E. Daly, *Steady-State Economics* (2nd ed., Island Press, 1991) for the classic critique of the “growth ideology” that came to define twentieth-century economics.

² For a survey of the historical development of GDP (including its adoption as a proxy for progress), see Diane Coyle, *GDP: A Brief but Affectionate History—Revised and Expanded Edition* (Princeton University Press, 2016) and Philipp Lepenies, *The Power of a Single Number: A Political History of GDP* (Columbia University Press, 2016).

Since the 1980s, the financial sector's share of global profits has skyrocketed even as inequality has widened and ecological systems have come under strain. A handful of billionaires now control as much wealth as half of humanity, and trillions of dollars circulate through global markets each day without creating a single meal, home, or anything real. The economy, in effect, has become a global casino—an engine of speculation that rewards speed and risk over substance and stability.³

These twin developments—the rise of GDP as the measure of progress and the rise of finance as the engine of profit—transformed not only the structure of economies but also the meaning of value itself. Over the years, the IMF and World Bank (key postwar institutions of global development) came to reflect the priorities of multinational corporations and creditor nations, channeling capital flows and policy reforms toward profit maximization, undermining people-centered development.⁴ These developments made it possible to grow economies without improving life, and to generate wealth without creating anything of real value.

GDP measures the quantity of economic activity, but not the qualitative impact of economic activity. In principle, GDP is neutral. A nation's GDP can rise when it cuts down forests and builds bombs, as readily as when it plants trees and builds schools. In practice, however, GDP has an inverse relationship to planetary health. GDP and environmental degradation rise together because they describe two sides of the same process—the conversion of living systems into money. In this sense, GDP is less a measure of prosperity than a meter of how quickly we can destroy the planet.⁵

Recognizing these limits, several countries have experimented with alternative metrics like Green GDP and related frameworks under the United Nations' System of

³ On financialization trends, see Greta Krippner, “*The Financialization of the American Economy*,” in *Socio-Economic Review*, Vol. 3, No. 2 (May 2005): 173–208; and Gerald Epstein, ed., *Financialization and the World Economy* (Edward Elgar, 2005). On global wealth concentration, see Oxfam International, “Survival of the Richest” (January, 2023), <https://www.oxfam.org/en/research/survival-richest>.

⁴ See John Cavanagh and Jerry Mander, eds., *Alternatives to Economic Globalization: A Better World Is Possible* (2nd ed., Berrett-Koehler, 2004). In that book, members of the International Forum on Globalization (IFG) describe the IMF, World Bank, and World Trade Organization as an “unholy trinity” of institutions that have come to serve the interests of multinational corporations and creditor nations. The authors argue that these institutions promote structural adjustment, privatization, and trade liberalization in ways that undermine local autonomy, social equity, and people-centered development.

⁵ See Robert Costanza et al., “Development: Time to Leave GDP Behind,” *Nature* 505 (2014): 283–285; and United Nations Environment Programme (UNEP), “Inclusive Wealth Report 2023: Measuring Sustainability and Equity” (Nairobi: UNEP, 2023). Both studies document that global GDP has continued to increase even as natural capital and ecosystem services have deteriorated, revealing the disconnect between economic growth and genuine wellbeing.

Environmental-Economic Accounting (SEEA).⁶ These efforts represent important steps toward aligning prosperity with sustainability, yet they often remain bound by the same underlying logic—that the value of life can be expressed in monetary terms. When we commodify nature, when forests become “ecosystem services” or rivers “natural capital,” the living world remains a means to economic ends. Green GDP attempts to move the environment from an externality to a variable within the economic system, but this is progress within a flawed frame. The deeper problem is not how we measure growth, but what we seek to grow and what we take the economy to be for.

When the Bretton Woods system collapsed over 50 years ago, it did more than unsettle currencies, it transformed the logic of capitalism itself. In a world of fiat money and deregulated finance, profit increasingly comes from speculation rather than production. Stock buy-backs, currency trades, and complex derivatives generate vast paper wealth (now digital wealth) without creating real goods or services. Economist David Korten calls this phantom wealth—money detached from reality, yet exerting real power.⁷ The result is an economy both blind and disembodied: blind because it measures the wrong things, and disembodied because it floats free from material reality.

In the 20th century, we behaved as though people (labor) and the planet (resources) existed to serve the economy, and that the economy existed to serve itself (money making money). Success was measured by the speed at which we converted life into money (GDP) and then money into more money (phantom wealth). The 21st century must reverse that logic.⁸ We must learn to convert money into life. To achieve this, we must return to the fundamental question: What is the economy for?

The Paradigm Shift: Toward a Life-Centered (*Qi*) Economy

The call for a different economic model is not new. More than three decades ago, John B. Cobb Jr. and Herman E. Daly laid the intellectual groundwork for what we might call a “wellbeing economy”—an economy designed to sustain life rather than expand consumption. In their award-winning book, *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future*, Daly (a founder of ecological economics) and Cobb (a constructive postmodern philosopher) argued that

⁶ See United Nations, *System of Environmental-Economic Accounting*. <https://seea.un.org/>

⁷ See David Korten, *Agenda for a New Economy: From Phantom Wealth to Real Wealth* (Berrett-Koehler Publishers, 2010).

⁸ For a great take on 21st century economics, see Kate Raworth, *Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist* (Chelsea Green, 2017).

the economy is a subsystem of the biosphere, bound by ecological limits, and that all life happens in interrelated communities of communities. Together they envisioned an economy redirected toward the holistic good of all people and the planet. Their Index of Sustainable Economic Welfare and later the Genuine Progress Indicator (GPI) offered early attempts to establish life-centered economic metrics, challenging the supremacy of GDP long before it became fashionable to do so.⁹ Their work remains foundational for many efforts to realign economic systems with living reality.

My proposal for a Life-Centered (*Qi*) Economy builds on this lineage. It views the economy as a living system nested within larger systems of society and nature. Yet it adds a distinctive insight from Chinese philosophy: the concept of *qi* (氣)—the vital energy or relational field that animates all existence.

In traditional Chinese thought, the universe is a web of dynamic relationships rather than a collection of isolated things. When *qi* flows freely and harmoniously, there is health, abundance, and stability; when it stagnates or becomes blocked, imbalance, and suffering arise. Ancient thinkers taught that good governance is the art of maintaining the harmonious flow of *qi* through the whole community so that resources, opportunity, and care circulate among people, regions, and generations.¹⁰ In this sense, a Life-Centered (*Qi*) Economy is not merely about sustainable management, but about restoring the healthy circulation of life through every level of society and nature.

A Life-Centered (*Qi*) Economy is a form of biomimicry (it follows the laws of life: circulation, balance, regeneration, and renewal).¹¹ It understands wealth not as what can be stored up but as what can be shared and regenerated. Prosperity arises when the energy of society moves through creative and life-enhancing channels—when farmers, teachers, and innovators are empowered, when communities are nourished, and when natural systems thrive.

In today's financialized order wealth often pools at the top, like water behind a dam, creating scarcity downstream and instability throughout the system. A Life-Centered (*Qi*) Economy restores movement, turning hoarded capital into circulating value by investing in

⁹ See John B. Cobb Jr. and Herman E. Daly, *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future* (Boston: Beacon Press, 1989).

¹⁰ For good discussions of *qi* and harmony in traditional Chinese cosmology and governance, see Tu Weiming, "The Continuity of Being: Chinese Visions of Nature," in *Confucianism and Ecology: The Interrelation of Heaven, Earth, and Humans*, edited by Mary Evelyn Tucker and John Berthrong (Harvard University Press, 1998).

¹¹ For an introduction to the concept of biomimicry, see Janine M. Benyus, *Biomimicry: Innovation Inspired by Nature*. (New York: HarperCollins, 1997).

local livelihoods, renewable energy, and community enterprises that generate ongoing returns to wellbeing and resilience. Where the old model measures success by the speed of monetary exchange, the new model measures economic success by its contribution to the health and vitality of people, communities, and the living systems that sustain them.

Healthy circulation also means closing loops. In production and consumption, it points toward circular economies that reuse materials, restore ecosystems, and design waste out of the system. In finance, it means channeling investment toward projects that renew the foundations of life rather than deplete them. Just as the health of a body depends on the free flow of blood, the health of an economy depends on the regenerative and relational flow of resources.¹²

China's recent emphasis of people-centered development (以人为本) also provides a foundation for this economic paradigm shift. Properly understood, people-centered development refers to a form of development that benefits all people (not just an elite few). And as Cobb and Daly explain, to be a person is always to be a person-in-community. Because of this interdependence, people-centered must also be expanded into life-centered development. People-centered does not stand in contrast to eco-centered, it already implies it. The wellbeing of people cannot be separated from the wellbeing of the planet.

President Xi Jinping captured this wisdom in the image of the two mountains over 20 years ago, stating, "Lucid waters and lush mountains are invaluable assets, comparable to the gold and silver mountains of legend." The metaphor expresses a profound unity between ecology and economy. But it also invites reflection: what are the gold and silver mountains? If they merely symbolize piles of money the comparison collapses, for money is a human symbol not a natural necessity. If, however, they represent the material foundations of a dignified life—food, shelter, water, and energy—then the metaphor reveals a deeper truth: the gold mountain depends on the green. Without living ecosystems, there can be no life; and without life, there can be no real wealth.

In this sense, a living economy does not reject growth, it redefines it. It asks: growth of what, for whom, and at what cost? When we answer these questions in terms of life itself, then development aligns with the rhythm of the Earth. The goal is no longer to have more,

¹² On circular and regenerative economic design, see Ellen MacArthur Foundation, *Completing the Picture: How the Circular Economy Tackles Climate Change* (Ellen MacArthur Foundation, 2019); and John Fullerton, *Regenerative Capitalism: How Universal Principles and Patterns Will Shape Our New Economy* (Capital Institute, 2015).

but to be more: to become a society capable of sustaining meaning, harmony, and mutual care.¹³

A life-centered economy can be expressed through several guiding principles that translate philosophy into practice:

- Circulation over Accumulation. Wealth must flow through communities to remain life-giving. Policy should reward reinvestment in real goods (e.g. education, infrastructure, ecosystems) rather than speculation in financial abstractions.
- Regeneration over Extraction. Production must enhance the sources of value it depends upon. Forests, soils, and seas are partners in renewal, not resources to be exhausted.
- Balance over Expansion. Progress is measured by harmony between human needs and ecological boundaries, not by the speed of consumption.
- Participation over Competition. Creativity arises from collaboration across sectors and nations. A healthy global economy resembles a living network in which every node contributes to and benefits from the vitality of the whole.
- Long Cycles over Short Returns. Investment horizons must lengthen; decisions are judged by their effect on the next generation, not the next quarter.

These principles echo ancient Chinese wisdom while aligning with contemporary sustainability science. Together they offer a foundation for reorienting policy, business, and community life toward the flourishing of the whole.

A life-centered economy is not a dream for the distant future. It is the logical next step in the evolution of development itself. Its seeds are already taking root around the world, nurtured by initiatives such as the Wellbeing Economy Alliance (WEAll), which brings governments and communities together to build economies designed for human and ecological wellbeing.¹⁴

Global Alignment: WEAll, WEGo, and the Wellbeing Economy Movement

The wellbeing of people and the wellbeing of the planet are inseparable, and the 20th century economic model has done a poor job enhancing either. This realization has given

¹³ *The Earth Charter* (2000), Preamble: “We must realize that when basic needs have been met, human development is primarily about being more, not having more.” Available at earthcharter.org

¹⁴ See the Wellbeing Economy Alliance (WEAll) website for explanations, reports, and resources on wellbeing economies and the Wellbeing Governments partnership. <https://weall.org>

rise to the Wellbeing Economy movement, which seeks to transform how nations define and pursue prosperity.

Two closely connected initiatives are leading this global shift: the Wellbeing Economy Alliance (WEAll) and the Wellbeing Economy Governments (WEGo) partnership. Together, they demonstrate that economies can be restructured to serve life rather than growth for its own sake. They show that new indicators, budgets, and policies can make wellbeing the organizing principle of economic governance, and that doing so enhances stability, trust, and resilience.

Founded in 2018, WEAll is a network of governments, economists, researchers, and community leaders working to transform the global economic system. Simply put, “A Wellbeing Economy is an economy designed to serve people and the planet, not the other way around. Rather than treating economic growth as an end in and of itself and pursuing it at all costs, a Wellbeing Economy puts our human and planetary needs at the centre of its activities, ensuring that these needs are all equally met, by default.”¹⁵

In its Wellbeing Economies Policy Design Guide (2021), WEAll lays out a practical process for governments to follow. It begins with a nationwide conversation to define what wellbeing means for citizens. It then translates those values into measurable indicators, aligns public budgets with those outcomes, and establishes feedback systems to learn and adapt over time.¹⁶ This is not an abstract theory, it is a tested governance framework already being implemented by the WEGo member states, including Scotland, Iceland, New Zealand, Wales, and Finland, with emerging participation from Canada. Each country provides a distinct example of what this shift looks like in practice.

- Scotland has embedded wellbeing into its National Performance Framework. Eleven national outcomes, ranging from environmental quality to community cohesion, are intended to guide all public agencies. The government reports annually on progress through a public Wellbeing Report, creating transparency and accountability.¹⁷
- New Zealand launched a Wellbeing Budget, which evaluates every spending proposal in terms of its contribution to wellbeing domains such as mental health,

¹⁵ Wellbeing Economy Alliance, “What Is a Wellbeing Economy?,” accessed June 25, 2026, <https://weall.org/what-is-wellbeing-economy>.

¹⁶ See, *Wellbeing Economy Policy Design Guide*, Wellbeing Economy Alliance (WEAll, 2021). Available at <https://weall.org/designing-public-policy>.

¹⁷ See Scotland’s National Performance Framework.

<https://www.gov.scot/collections/national-performance-framework/>

housing, security, education, and environmental quality. This approach ensures that financial policy directly supports social and ecological goals.¹⁸

- Iceland created a national dashboard of 39 wellbeing indicators developed through broad citizen consultation. These indicators—covering education, safety, trust, and environment—inform decisions across ministries and ensure continuity between governments.¹⁹
- Finland now frames its policy around the concept of an Economy of Wellbeing, viewing social equity, education, and environmental sustainability not as costs but as drivers of shared prosperity and fiscal stability.²⁰
- Wales offers perhaps the most legally robust model. Its Wellbeing of Future Generations Act (2015) requires all public institutions to work toward seven wellbeing goals, ensuring that today's policies protect the interests of tomorrow's citizens.²¹
- Canada, while not yet an official member of WEGo, launched a Quality of Life Framework with over 80 indicators across prosperity, health, and environment, and developed their first Wellbeing Budget in 2021.

Together, these nations form a living laboratory of wellbeing governance. They have shown that it is possible to operationalize life-centered principles through clear metrics, institutional design, and participatory policy-making. The world now needs this movement to scale. While smaller nations have pioneered the models, it will take major economies to make them global norms. Few nations are better positioned to lead this effort than China.

China's Belt and Road and the Transition to a Life-Centered Global Economy

China is in a unique position. As the convener of the Belt and Road Initiative (BRI), it already provides leadership for multinational development cooperation. And as one of the largest economies in the world, when China acts, the entire world takes notice. Combined

¹⁸ The *Wellbeing Budget* (New Zealand Treasury, 2019) represented a landmark effort to align fiscal policy with wellbeing outcomes, though many initiatives faced challenges in implementation. Full text available at <https://www.treasury.govt.nz/sites/default/files/2019-06/b19-wellbeing-budget.pdf>

¹⁹ For details, see

<https://www.government.is/topics/sustainable-iceland/well-being/indicators-for-measuring-well-being/>

²⁰ For the most recent reports on this, see Finland's Ministry of Social Affairs and Health, <https://stm.fi/en/economy-of-wellbeing>.

²¹ See, "Well-being of Future Generations (Wales) Act 2015." <https://www.futuregenerations.wales>.

with decades of national policy that reflect the principles of a life-centered, wellbeing economy—and a strong central government guided by Marxism with Chinese characteristics—China has the capacity to implement life-centered principles on a scale unmatched by any other nation.

As noted earlier, China's commitment to people-centered development (以人为本) implies development guided by equity, inclusion, and ecological health. Likewise, its emphasis on high-quality development (高质量发展) directly parallels the wellbeing economy's focus on quality over quantity. And the vision of ecological civilization (生态文明) represents more than environmental protection; it signifies a new stage in the evolution of human development. It asks not simply how to make our economies greener, but how to make them truly alive—how to design systems that sustain the flow of qi through the Earth community, linking human prosperity with planetary vitality.

The Belt and Road Initiative is the world's largest platform for international development cooperation. As such, it offers an unprecedented vehicle for translating life-centered principles into global practice. If China were to join the Wellbeing Economy Governments (WEGo) partnership, or explicitly align the Belt and Road Initiative with wellbeing principles, it could rapidly accelerate the global transition from a destructive growth economy to a productive life economy. By embracing and scaling a life-centered, wellbeing-oriented economic model, China could help move the world from an age driven by abstract wealth to an age of living value. A life-centered BRI could:

- Adopt Wellbeing Impact Assessments for all major projects, evaluating effects on health, equity, education, and ecology alongside financial returns;
- Develop a BRI Wellbeing Dashboard that tracks shared progress on indicators such as livelihoods, clean energy access, and ecosystem restoration;
- Establish a BRI Living Economies Forum to connect governments, researchers, and communities in mutual learning;
- Introduce life-based financing standards, ensuring that BRI investments enhance life-sustaining infrastructure and avoid projects that harm ecosystems or displace communities.

Such initiatives would make the BRI a model of living connectivity; a network that not only connects economies but revitalizes societies and ecosystems along its paths. These steps would not only redefine development practice but also reshape international relations.

A life-centered BRI would offer new pathways for the Global South. Many nations across Asia, Africa, and Latin America still bear the structural legacy of colonial extraction and debt dependency—systems that tie development to resource depletion and external control. By prioritizing wellbeing and regeneration, the Belt and Road could help partner countries leapfrog the industrial model that once fueled Northern prosperity by shifting its burdens to the South and future generations. Instead of replicating the old logic of export-led growth, a life-centered BRI would invest in distributed resilience: local renewable energy, regenerative agriculture, community-based industry, and knowledge exchange rooted in cultural context. In doing so, it would not only support the material foundations of wellbeing but also restore economic sovereignty, allowing nations to define progress on their own terms. Such an approach would mark a decisive step toward a more balanced globalization—one that circulates opportunity, rather than concentrating it, and that measures success by the flourishing of all life, not the profits of a few.

In turn, this rebalancing would strengthen global stability. When nations measure success by wellbeing, cooperation replaces competition. The pressure to maximize exports or exploit natural resources declines, and new forms of partnership emerge. A life-centered global economy would prioritize mutual flourishing, investing in education, health, and renewable energy as shared goods that build long-term prosperity.

Moreover, wellbeing metrics provide a common language for dialogue among civilizations. They respect cultural diversity while affirming universal human and ecological needs. For China, this approach aligns naturally with the idea of a community of shared future for humankind (人类命运共同体)—a vision that places harmony and cooperation above dominance.

China has already declared that “lucid waters and lush mountains are invaluable assets.” The next step is to define the gold and silver mountains in life-centered terms, to ensure that material prosperity is grounded in living wealth, and that social progress deepens rather than drains the vitality of the Earth. By aligning its people-centered and ecological-civilization goals with the global movement for wellbeing, China can lead the transition from an industrial civilization built on extraction to an ecological civilization built on regeneration.

In this sense, a wellbeing economy and an ecological civilization are two expressions of the same transformation—both call for an economy that measures success by the health of life itself (e.g. clean air and fertile soil, equitable opportunity, and resilient communities), and by the capacity of each generation to thrive without diminishing the next. Both

demand a redefinition of value away from accumulation toward renewal, away from exploitation toward harmony.

The Wellbeing Economy movement provides the operational tools; a Life-Centered (*Qi*) Economy provides a philosophical framework with Chinese characteristics, while China's goal of ecological civilization provides the unifying vision—describing the future created by the global implementation of wellbeing economies. Together, this could fundamentally reshape the 21st-century world order.

The path toward a living economy is not about dismantling markets or abandoning development. It is about reorienting them toward their true purpose: to serve life. It means ensuring that finance, technology, and trade are governed by the principles of regeneration, fairness, and cooperation. It means restoring balance between the green mountain of ecology and the gold mountain of material security. Just as industrialization once lifted billions out of poverty, life-centered development can lift humanity into an era of comprehensive flourishing. After all, the ultimate purpose of the economy is not to make money, but to make life—and to make it flourish.

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Lifescaping Action Research with Trees: A Grove in a Process Pluriverse

Rolla E. Lewis, Leah Salter, Yuki Minami, Peter Whitehouse, Nelly Ndirangu

Abstract: Over the last three years the authors of this paper have been involved in an international project- a group of six academics and practitioners with a conjoint interest in trees and action research. We set out with curiosity about the possibility of undertaking a research project with trees as active co-researchers rather than as inactive subjects. Within this project we have formed relationships with each other as human participants and have purposefully developed a close relationship with specific trees that we (human co-researchers) each chose to connect with. That tree might be a tree in a garden, in a national park, a sacred tree, or a tree central to village life. The tree co-researchers invited each other to tell stories, to connect more creatively, to slow down in order to listen to each other, listen to the stories of our ancestors, listen to the trees and to the land we live on or are rooted in. This has led us to consider how our practice might be one of many other practices that foster movement toward creating ecological civilizations. This article explores mindful wonder, embracing a pluriversal process philosophy, and the world of trees. It concentrates on our personal stories about our relational practices with our trees. It offers a poetic sensibility without grand answers. More importantly, the article presents arboreal pathways for fostering conversations and practices directed toward creating ecological civilization by planting experiential groves.

Keywords: *lifescaping action research; trees; ecological civilization; process pluriverse; mindful wonderment; eco-relational practice*

This participatory action research article emerged from conversations and dialogues initiated at the November 2022 Taos Institute Gathering Zoom titled “Unfolding Dialogues: Relational Resources for Global Good.” During one of the Gathering’s Zoom conversations, the first author invited the five co-researchers to participate in a lifescaping action research project investigating how having different individuals foster a personal relationship with a tree of their own choosing might reverberate with Kurio and Reason’s “Voicing Rivers through onto-poetics: A co-operative inquiry.”¹ The Kurio and Reason study involved five persons engaging eight rivers in a series of structured personal practices over a six-week duration. In our inquiry, we would be guided by a lifescaping action research methodology where each tree co-researcher would choose a tree in their own regional place; our geographies ranged from Kenya, Wales, Japan, Guatemala, and two states in the USA, Ohio and Oregon. Rooted in the primacy of relationships in life, and in accounting for our age, cultural, and academic diversity, the co-researchers were guided by listening deeply to each other, the tree stories we would share, and as you will see, letting the trees be our teachers. During the process of our study, as we deepened our listening we wandered into the importance of going slow, and subsequently, cultivating deeper appreciation and gratitude for each other and the lessons learned from our trees. Each co-researcher was rooted in their own diverse local place while being connected elsewhere in the world to their fellow co-researchers’ human-tree stories. Informed by lifescaping action research focused on eco-relational practices, the co-researchers’ tree stories reveal an emergent process pluriverse where many worlds fit together compassionately; mindfully invitational to learning from diversity.² This article expands on the notion of process pluriverse and practices that enhance moments of becoming.³

Our lifescaping action research design cultivated what Escobar describes as a “pluriverse’... in which many worlds fit together harmoniously.”⁴ As researchers, we grounded ourselves in an appreciation of how each of us is influenced by our own cultural

¹ J. Kurio and P. Reason, “Voicing Rivers through Ontopoetics: A Cooperative Inquiry,” *River Research and Applications* 37, no. 1 (2021): 1–9, <https://doi.org/10.1002/rra.3817>.

² See Leah Salter, Rolla E. Lewis, Yuki Minamii, Peter Whitehouse, and Nelly Ndirangu, “Inquiring from within a Grove of Trees and People as a Process of Wonderment,” under review; Rolla E. Lewis, “Wandering With Mindful Wonderment,” in *Murmurations: Journal of Transformative Systemic Practice* 10, no. 1 (2026): 11-28.

³ Thomas Nail, *The Philosophy of Virginia Woolf: Moments of Becoming* (Bloomsbury, 2025).

⁴ Arturo Escobar, “Now That We Know the Critique of Global Capitalism Was Correct,” in *The New Possible: Visions of Our World Beyond Crisis*, ed. Philip Clayton, Kelli M. Archie, Jonah Sachs, and Evan Steiner (Cascade Books, 2021), 250.

backgrounds. In cultivating a community of practice, we were mindful of how we are influenced by Western research methodologies, the colonization of knowledge, the grip of techno-science and the neo-liberal agenda dominating universities, especially in the global North, where four of the authors live. This article touches on mindful wonder, embracing a pluriversal process philosophy, and the world of trees. It concentrates on our personal stories about our relational practices with our trees. It offers a poetic sensibility without grand answers. More importantly, the article presents arboreal pathways for fostering conversations and practices directed toward creating ecological civilization by planting experiential groves. We agree with Escobar, “let’s imagine ourselves as designers of everyday life—as people who can begin to imagine what is possible, and then bring it into the reach of practice.”⁵ Or as David Graeber put it, “The ultimate hidden truth of the world is that it is something that we make, and could just as easily make differently.”⁶ In our grove, each is growing in their own way, and all are growing together.

Mindful Wonderment

As co-researchers, we are informed by play and wonder. We agree with Nail who asserts, “Perhaps a better way to think of the project of human life and knowledge, including the study of knowledge itself, philosophy, is as a process of play, where we work together to try things out with caution and without guarantees.”⁷ We hold that play and wonder help us as eco-relational beings to transform our relationships with each other as human beings and the ecosystems where we dwell as participatory beings.⁸ We also understand that research, like philosophy, begins with wonder. Drawing upon ideas easily traced back to Plato and Aristotle, Arne Naess poetically suggests, “*Philosophy begins and ends with wonder—profound wonder. On that account we ought to consider life... as a flowing current. And it is the emotions that set a life in motion.*”⁹ Wonder is embodied. Indigenous researcher Wilson points to wonder when suggesting that we are the relationships that we are part of and hold.¹⁰ Wonder involves open, provisional embodied

⁵ Escobar, “Now That We Know,” 254.

⁶ David Graeber, *The Ultimate Hidden Truth of the World* (Farrar, Straus and Giroux, 2024), ix.

⁷ Thomas Nail, *The Philosophy of Movement: An Introduction* (University of Minnesota Press, 2024), 238.

⁸ See Kenneth J. Gergen, *Relational Being: Beyond Self and Community* (Oxford University Press, 2009); Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* (Milkweed Editions, 2014); Nail, *Philosophy of Movement*; Charlene Spretnak, *Relational Reality: New Discoveries of Interrelatedness That Are Transforming the Modern World* (Green Horizons Books, 2011).

⁹ Arne Naess, *Life’s Philosophy: Reason and Feeling in a Deeper World* (University of Georgia Press, 2002), 1.

¹⁰ Shawn Wilson, *Research Is Ceremony: Indigenous Research Methods* (Fernwood Publishing, 2008).

relationships—eco-relationships, existing in webs, networks, meshwork, connections to everything else. As researchers we humbly embraced the provisional by cultivating a “mindful wonder” practice where they remain open and not rushing toward closing in on conclusions and any notion of certainties.¹¹ Mindful wonderment requires an openness and awareness to not push for closure or force answers. Open curiosity comes from slowing down and paying attention enough to wonder about little things that might be connected to larger things. In her call for slow science, Stengers says, “Slowing down means becoming capable of learning again, becoming acquainted with things again, reweaving the bounds of interdependence.”¹² Our research slowed down to the speed of trees, as best that we could understand from our human perspectives.

Our research emerged as an action research inquiry response to “Voicing Rivers through onto-poetics: A co-operative inquiry,” where Kurio and Reason take a first step in the practice of co-operative inquiry with rivers.¹³ Their co-operative inquiry involved having five persons engage with eight rivers via a series of structured personal practices over a six-week duration. Drawing on the onto-poetics of panpsychism (everything vibrates with life), they explore how “onto-poetic events are at the heart of panpsychic practice. If we invoke the world as a living being intentionally (and sometimes tacitly), then the world may respond.”¹⁴ Onto-poetics involves viewing reality and understanding the world as a communicative presence; that is to say where there is communicative engagement of the self with the world and the world with the self.¹⁵

Pluriversal Process

Although our research is informed by onto-poetics and panpsychism that guided Kurio and Reason, as a group of social constructionist co-researchers our inquiry involved investigating practices and possibilities where many worlds might fit together harmoniously. Our conversations and actions were respectful of dwelling in a pluriverse. We embraced Nail’s notion, “There can be and certainly are multiple coexisting descriptions of the same things from different perspectives.... [P]hilosophy is a... historical

¹¹ Rolla E. Lewis, Susan Lenski, Soma Mukhopadhyay, and Colleen Cartwright, “Mindful Wonderment: Using Focus Groups to Frame Social Justice,” *Journal for Social Action in Counseling and Psychology* 3, no. 1 (2010): 82–105, <https://openjournals.bsu.edu/jsacp/article/view/319>

¹² Isabelle Stengers, *Another Science Is Possible: A Manifesto for Slow Science* (Polity Press, 2018), 81.

¹³ Kurio and Reason, “Voicing Rivers.”

¹⁴ Kurio and Reason, “Voicing Rivers,” 7.

¹⁵ For example, see Freya Mathews, *The Ecological Self* (Routledge, 2021); Freya Mathews, *The Dao of Civilization: A Letter to China* (Anthem Press, 2023).

performance.”¹⁶ We held a social constructionist stance, with a transworlding emphasis, and a pluriversal process perspective in ways that could inform our practice with each other and our trees. The pluriversal process informing our stories and research were emergent; we frequently stumbled onto them in conversations with each other and others who we talked to about our tree research. We created dialogical space for diverse traditions to exist in a pluriversal process; where stories could simply exist as such, with no pressure to define this as that or that as this. We let this tree or person stand this way and that tree or person stand another way—all were connected with deep listening and mindful wonderment in the same grove.

Still in the course of the research, thoughts wandered, conversations deepened, and reflections became more adventurous and trusting. The first author began to reflect on and appreciate Nail’s description of contemporary Western process tradition having at least three streams: 1) the continuous process tradition in the form of vitalist new materialism, vitalist materialism, and neovitalism inspired by Henri Bergson; 2) Alfred North Whitehead discontinuous and divided process perspective involving the succession of actual entities and difference between discrete states; 3) the philosophy of movement which describes process as indeterminate; it draws inspiration from the first century BCE Roman poet Lucretius who placed the indeterminate swerve at the center of his philosophy. We hardly had time, perspective, or desire to argue the merits or limitations inherent in the process traditions mentioned. Our research focused on practices, different co-researchers’ stories about their relationships to specific trees, and listening to learn from each other’s different cultural and philosophical perspectives. We cultivated a pluriversal philosophical perspective.

Given our linguistic context, two terms helped us appreciate social constructionist and process philosophy in differing ways: relational and process. Social constructionists speak of a “relational process,” whereas Whiteheadian process philosophy speaks of the “process relational;” both describe the dynamic, interconnected, and ever-changing nature of reality. Social constructionists emphasize the relational nature and interactions between and among; they appreciate that change is ever present in relationships. Whiteheadian and process philosophy in general emphasizes becoming, indicating novelty and changes are inherent to life. As co-researchers, from our conversations and shared resources emerged process pluriversal research goals to guide our action inquiry. This involved practicing an

¹⁶ Nail, *Philosophy of Movement*, 24.

awareness ourselves in an eco-relational process and recognizing that the pluriverse extended beyond human philosophy to the trees and the entire Earth.

The Umwelt: The Perceptual Worlds Trees and Human Civilizations

The Estonian biologist Jakob von Uexkull introduced the Umwelt concept at the beginning of the twentieth century. “Umwelt refers to the perceptual world in which an organism exists.... [E]ach organism has its own ‘subjective universe’ tailored to its specific needs and survival strategies.”¹⁷ The Umwelt concept emphasizes that there is no outside or objective perception of the world. All living organisms interact with its environment based on its unique and specific biological capabilities. Trees have an Umwelt. Humans have an Umwelt of their own expressed by individuals in history, context, culture, and always in eco-relationships with their fellow humans and the world where they dwell. There are unique and varied ways that each living being experiences the world. Trees have navigated life much longer than humans. The first trees appeared during the Devonian period, around 385 to 360 million years ago, whereas modern humans evolved in Africa approximately 300,000 years ago. Popular evolutionary stories frame humans coming down from the trees. Trees definitely helped humans evolve; think of fruit trees offering food, humans using sticks as tools, branches for fire, construction materials, and countless other cultural artifacts. Trees moved humanity toward creating civilizations and those human actions led to deforesting the regions where such civilizations were built. It is likely that trees could survive without humanity, but humanity would not likely survive without trees.

Humans have instrumental relationships with trees, as we do today. Simply think about how ubiquitous trees are (in the way of wood and paper in your life). Your desk, pencil, chair, house, apple, and paper books to even your most intimate use of toilet paper come from trees. Humans have developed a moral blindness when it comes to trees. We do not fully see the trees (or the plight of other humans). Certain “anonymous forms of callousness and non-recognition” seep into our daily lives and everyday practices.¹⁸ We become morally blind to our eco-relational nature, and fail to be grateful for the trees and other things we use and where they come from. This article points to practices where we

¹⁷ J. M. Robinson, *Treewilding: Our Past, Present, and Future Relationship with Forests* (Pelagic Publishing, 2024), 225.

¹⁸ Zygmunt Bauman and Leonidas Donskis, *Moral Blindness: The Loss of Sensitivity in Liquid Modernity* (Polity, 2013), 176.

listened and slowed down enough to hear and see each other's tree stories, and how each of us in our own way saw beyond social moral blindness via a relationship with a tree.

Diverse Philosophical Forest

Our research and work together is like a grove located in a diverse philosophical forest; each draws upon a broad elemental philosophy embedded in this world.¹⁹ We recognize a long and venerable history in Eastern and Western philosophical traditions, as well as indigenous cultures.²⁰ We dwell upon these points to emphasize the pluralistic philosophy enabled us to listen to each other's stories in ways that focused on learning with each other. Pluralistic and open concepts can also be linked to Simon and Salter's "transmaterial worlding"—another of our textual inspirations.²¹ Transmaterial worlding extends the notion of social in social construction to include human and non-human participants—animal, vegetable, and mineral—introducing systemic living as onto-epistemological becoming, movement and meaning-making practices in and between human and non-human parts of our worlds. Our research inquiry was guided by mindful wonderment, curiosity, and gratitude for our diverse ways of performing emergent practices with each other and our trees.

Our conversations included Eastern traditions, and recognized that Chinese and Japanese cultures could be described as more relational traditions than Western tradition. Ames' cultural hermeneutics illuminates the distinction between Greek ontological thinking and Confucian "zoetological" thinking.²² Greeks offered a science of being, substance, and essence; whereas, the Chinese offer "zoetology" as the "art of living"- a

¹⁹ David Macauley, *Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas* (SUNY Press, 2010).

²⁰ See V. F. Cordova, *How It Is: The Native American Philosophy of V. F. Cordova* (University of Arizona Press, 2007); Philip Goff, William Seager, and Sean Allen-Hermanson, "Panpsychism," in *The Stanford Encyclopedia of Philosophy*, Summer 2022 ed., ed. Edward N. Zalta, <https://plato.stanford.edu/archives/sum2022/entries/panpsychism/>; David Hinton, *China Root: Taoism, Ch'an, and Original Zen* (Shambhala Publications, 2020); David Hinton, *Wild Mind, Wild Earth: Our Place in the Sixth Extinction* (Shambhala Publications, 2022); David Hinton, *The Way of Ch'an: Essential Texts of the Original Tradition* (Shambhala Publications, 2023); Thomas Nail, *Lucretius III: A History of Motion* (Edinburgh University Press, 2022); Nail, *Philosophy of Movement*; Scott L. Pratt, *Native Pragmatism: Rethinking the Roots of American Philosophy* (Indiana University Press, 2002).

²¹ Gail Simon and Leah Salter, "Transmaterial Worlding: Beyond Human Systems," *Murmurations: Journal of Transformative Systemic Practice* 2, no. 2 (2019): 1–17, <https://doi.org/10.28963/2.2.2>.

²² Roger T. Ames, *Living Chinese Philosophy: Zoetology as First Philosophy* (State University of New York Press, 2024).

world where boundless “becomings” are always in process, fluid, and not static.²³ For both the Chinese and Japanese, life as fully relational, contextualized, and historical—a relational and process understanding.

Understanding and adapting to the ephemeral nature of the universe is integral to Japanese Zen where “emptiness” is recognized as voidness of substance and “suchness” as a given. This is best exemplified by two concepts tied to the celebration of the cherry blossom. “*Yugen*...signifies the mysterious beauty of darkness and shadows...[Whereas] *aware*...denotes the sad tragic beauty of perishability.”²⁴ The cherry buds and blossoms emerge from darkness and shadows, followed by a burst of beauty before perishing. Such cultural perspectives open different ways of connecting with and understanding oneself in relationship with the natural world. The Japanese are actively developing, researching, and practicing *shinrin-yoku* (forest bathing) and other approaches to connecting people to trees and to the rest of the life-world.²⁵ Odin shares how process philosopher Alfred North Whitehead’s primacy of creativity “defines beauty as a function of *relatedness*....beauty is neither subjective nor objective but *interactive*.”²⁶ Life and our relationship with trees can be understood as creative interactive processes. Each of us understood ourselves and approached our trees not as things, but as processes moving and passing through life.

These Eastern insights and practices converge with certain streams in Western and Indigenous traditions. Tree metaphors, recent scientific studies, process philosophy, literature, children stories, and educational and therapeutic practices have started to frame ecological life as a continuous, ongoing relational process.²⁷ Western philosophers and psychologists are beginning to recognize, explore, and recapture the wisdom of trees.²⁸

²³ Ames, *Living Chinese Philosophy*, 3.

²⁴ Steve Odin, *Tragic Beauty in Whitehead and Japanese Aesthetics* (Lexington Books, 2016), xviii.

²⁵ See Qing Li, *Forest Bathing: How Trees Can Help You Find Health and Happiness* (Viking, 2018); Chorong Song, Harumi Ikei, and Yoshifumi Miyazaki, “Physiological Effects of Nature Therapy: A Review of the Research in Japan,” *International Journal of Environmental Research and Public Health* 13 (2016): 781.

²⁶ Odin, *Tragic Beauty*, 72.

²⁷ See Diana Beresford-Kroeger, *To Speak for the Trees: My Life’s Journey from Ancient Celtic Wisdom to a Healing Vision of the Forest* (Random House Canada, 2019); James William Gibson, *A Reenchanted World: The Quest for a New Kinship with Nature* (Metropolitan Books, 2009); David George Haskell, *The Song of Trees: Stories from Nature’s Great Connectors* (Penguin, 2017); Eduardo Kohn, *How Forests Think: Toward an Anthropology Beyond the Human* (University of California Press, 2013); Kay Milton, *Loving Nature: Towards an Ecology of Emotion* (Routledge, 2002); Nail, *Lucretius III*; Nail, *Philosophy of Movement*; Shel Silverstein, *The Giving Tree* (HarperCollins, 1999); Suzanne Simard, *Finding Mother Tree: Discovering the Wisdom of the Forest* (Alfred A. Knopf, 2021); Peter Wohlleben, *The Hidden Life of Trees: What They Feel, How They Communicate: Discoveries from a Secret World* (Greystone Books, 2015).

²⁸ David Macauley and Laura Pustarfi, *The Wisdom of Trees: Thinking through Arboreality* (SUNY Press, 2025).

Learning about and recapturing marginalized wisdom is vital, and as researchers we were mindful of Indigenous thought and practices, as with marginalized Druid beliefs. We realized that it is important to recognize and (re)turn to diverse ways of becoming in the world when relating with trees. In many Indigenous cultures relationality is implicitly understood as being beyond the human realm. In Maori law, for example, the integration of the spiritual world, the natural world, and the law of the ancestors are integral. Whanaungatanga describes (as much as the English language can translate) the centrality of all relationships as kin relationships, cutting across time and matter.²⁹ For example, Nerida Blair an Aboriginal Australian scholar talks of "co-becoming" with Country as a central tenet to her research.³⁰ Indigenous researcher Shawn Wilson points out "the shared aspect of an Indigenous ontology and epistemology is relationality (relationships do not merely shape reality, they *are* reality)."³¹ Kimmerer argues it is vital to weave the relational indigenous knowledge into scientific practice and everyday living.³²

The common ground in our pluriversal process philosophy moves us from relating to a static Cartesian dualistic world of material stuff and non-material mind, to a world of immanent fluid becomings where people are nature reflecting on nature—participating in a shimmering, pluralistic processes emerging from cosmic, zoetological life, or other yet to be described possibilities.³³ Here is our point. We offer no answers. We simply assert that we, and the world, and things in the world, are less like static objects, and more like currents running through enmeshed and entangled relational networks. Such a shift in perspective opens the possibilities for an ethical relationality guided by practicing relational practices, such as mindful wonderment, cultivating a pluriversal process philosophy, and listening deeply to personal stories where moments of becoming illuminate how we are all nature. We are nature naturing; our capacity for reflection enables us to cultivate possibilities for greater justice and constructing ecological civilizations attuned to being part of a living planet. We need cooperation, interaction, co-creating, transformation, and ultimately recognizing that humans inhabit a common shared world with other people,

²⁹ Carwyn Jones, "Indigenous Law/Stories: An Approach to Working with Maori Law," in *Decolonizing Research: Indigenous Storywork as Methodology*, ed. Jo-Ann Archibald et al. (Zed Books, 2019).

³⁰ Nerida Blair, "Lilyology as a Transformative Framework for Decolonizing Ethical Spaces within the Academy," in *Decolonizing Research: Indigenous Storywork as Methodology*, ed. Jo-Ann Archibald et al. (Zed Books, 2019).

³¹ Wilson, *Research Is Ceremony*, 7.

³² Kimmerer, *Braiding Sweetgrass*.

³³ See Ames, *Living Chinese Philosophy*; Nail, *Philosophy of Movement*.

animals, plants, and minerals³⁴ or a co-inhabitation as Simon and Salter propose.³⁵ This shift involves recognizing ourselves entangled in a culturally diverse, pluralistic, participatory transmaterial world where it is important to play.

Lifescaping Action Research Methodology

Although informed by play, our methodology is guided by lifescaping action research and other action research practices designed for transformation during a time of eco-social crisis.³⁶ As a non-linear and spiraling dialectical process, lifescaping action research defines a process designed to deepen listening, understanding, and direction *with* those participating in the process. Leadership generally moves in a give-and-take direction among or between those who are more inclined to lead; co-researchers actively contribute or engage as participants. For instance, one of our co-researchers was engaged as a participant in our group meetings and made valuable verbal contributions, but did not contribute to the writing process; illustrating how oral traditions can impact cultures and people, but fade in those guided by writing. Allowing levels of engagement fostered a spiraling dialectical process where the co-researchers grew together in a group development process and engagement in our project.

Research Question

Our research question aimed to hold, as best we could and can imagine a sense of movement and play, as well as a deep respect and reverence for ancestry, place and ways of relating in the more-than-human world. Drawing on Buber, we asked ourselves: What would be the experience of individuals in different settings around the world if each of

³⁴ See Barbara Muraca, "Relational Values: A Whiteheadian Alternative for Environmental Philosophy and Global Environment Justice," *Balkan Journal of Philosophy* 8, no. 1 (2016): 19–38.

³⁵ See Simon and Salter, "Transmaterial Worlding."

³⁶ See Hilary Bradbury, *How to Do Action Research for Transformations: At a Time of Eco-Social Crisis* (Edward Elgar Publishing, 2022); Hilary Bradbury, Rolla E. Lewis, and D. C. Embury, "Education Action Research: With and for the Next Generation," in *The Wiley Handbook of Action Research in Education*, ed. Craig A. Mertler (John Wiley & Sons, 2019), 7–28; Kurio and Reason, "Voicing Rivers"; Rolla E. Lewis, "Lifescaping: Cultivating Flourishing School Cultures," in *The SAGE Handbook of Social Constructionist Practice*, ed. Sheila McNamee, Mary M. Gergen, Celiane Camargo-Borges, and Emerson F. Rasera (SAGE Publications, 2020), 321–331; Rolla E. Lewis et al., eds., *Lifescaping Project: Action Research and Appreciative Inquiry in San Francisco Bay Area Schools* (WorldShare Taos Institute Publication, 2017), <http://www.taosinstitute.net/lifescaping-project>; Lewis et al., "Mindful Wonderment"; Rolla E. Lewis and Paul Winkelman, *Lifescaping Practices in School Communities: Implementing Action Research and Appreciative Inquiry* (Routledge, 2017).

them attempted to shift to a personal relationship with a tree?³⁷ Thus moving from the tree as object (I-It) to the tree as subject (I-Thou). This shifts from our understanding of self and others as static things to an understanding we are all events, experiences, emotions, and eco-relationships in process.³⁸ Our relationship with trees is an invitation to feel connected to the more-than-human world. Unlike humans, trees are committed to place; they are not as mobile as people, and yet they are never static, transforming energy from the sun, connecting in mycorrhizal entangled relationships via their roots, and responding to wind, rain, snow, people and animals passing by. Trees experience time in a different way, and most live longer than humans. They do, it seems, have a sense of time, of the seasons.³⁹ We ask: In the experience of getting to know a tree, will we become more empathic with the tree? Sense time in other ways? Possibly shift our perspective about our own mobility? Deepen our own sense of personal and cultural plurality in sharing our experiences with each other?

Participant Co-Researchers

Becoming a grove: A grove, originating in the English language is a small group of trees with little undergrowth and little vegetation between the trees. The trees are distinct from each other and yet connected by their individual and connected growth. A grove is also a term used within Druidry to describe a group of sacred trees (origins in Celtic and Anglo-Saxon traditions) and a group of Druids. So groves, in this sense, can be a group of important, revered trees or a group of humans who are gathering to foster shared experience to love, celebrate and honor trees and nature.

There were six human participant co-researchers involved in these gatherings, all of which are affiliated with the Taos Institute. Nelly Ndirangu is a counseling psychologist from Kenya focused on community building and peacemaking. Jeff Fifield is Director of Curriculum, Instruction, and Assessment at Colegio Maya in Guatemala; Jeff added significantly to the group dialogue but withdrew from writing about his experiences. Peter Whitehouse is a medical doctor, intergenerative transdisciplinary designer and professor at Case Western Reserve University in Ohio. Leah Salter is a systemic psychotherapist, supervisor and lecturer working in Wales, connected academically with the University of

³⁷ Martin Buber, *I and Thou* (Charles Scribner's Sons, 1970).

³⁸ Ames, *Living Chinese Philosophy*; Hinton, *Way of Ch'an*; Leemon B. McHenry, *The Event Universe: The Revisionary Metaphysics of Alfred North Whitehead* (Edinburgh University Press, 2020); Naess, *Life's Philosophy*; Nail, *Philosophy of Movement*.

³⁹ Wohlleben, *Hidden Life of Trees*.

South Wales Centre for Storytelling, The University of Bedfordshire Professional Doctorate in Systemic Practice and The Centre for Systemic Studies/The Family Institute, Wales, where she is Director. Rolla E. Lewis is professor emeritus at California State University, East Bay and past dean for the certificate program at the Cobb Institute. Yuki Minamii is a 2nd-year student in the Master's degree in Media Design at Kyushu University in Japan.

Purpose and structure of practices within our gatherings and the unfolding research project were designed to be fluid, guided by the lifescaping practices and process focused on enhancing experience and shaping a shared community.⁴⁰ Lifescaping action research is not about describing the world but about engaging in actions and practices *with* others to transform the world via a non-linear spiraling dialectic where participants act to bring forth the change they hope for. Like landscaping, lifescaping is intentional and action oriented, but also relational and process focused. A good gardener is mindful of the complex web of life that the garden hosts, and sees beyond the aesthetic. Co-researchers are not deluded by the notion of standing outside the research looking in, we are inside participating and performing eco-relationally with our trees. There is no outside perspective; we are all inside nature, part of, and participating in a natural process. Broadly, the research purpose was two-fold. One, to invite each co-researcher to choose a tree to experience getting to know that tree via their own or suggested practices, such as community stories, meditations, hugging the tree, creating art, poetry etc. Two, to share the evolving relationship with our trees with each other by telling stories to each other through zoom meetings and other ways- through writing or sharing of pictures, photos, stories and poetry via email.

Procedures. The research process consisted of four non-linear phases that moved in sequence but were always open to looping back to deepen experience and dialogue.

Phase one: Foster relational connections to cultivate respectful relationships by listening to the transformative core in the stories being shared in the group. Prior to our first meeting and in order to develop a common literature for the grove, the co-researchers were sent copies of Kurio and Reason, Muraca, and Simon and Salter to read.⁴¹ Rolla had a number of structured activities to guide the co-researchers in the way that Kurio and Reason provided activities in their inquiry; deep listening led to a slowing down to a tree's pace. During the initial zoom meeting, co-researchers introduced themselves and shared how they were drawn to participate in the study. Conversation moved away from any

⁴⁰ Lewis and Winkelman, *Lifescaping Practices in School Communities*.

⁴¹ Kurio and Reason, "Voicing Rivers"; Muraca, "Relational Values"; Simon and Salter, "Transmaterial Worlding."

defined set of structured activities, and focused on listening to learn, practicing mindful wonderment, and deepening relationships with others. Leah set up zoom meetings at regular intervals, while attempting to foster a slower pace of relating to each other and time for each co-researcher to get to know their trees better. Slowing down was vital. “Trees maintain an inner balance. They budget their strength carefully, and they must be economical with their energy so that they can meet all their needs.”⁴²

Since Leah was unwell during this phase in the process, and low in energy, slowing down had particular resonance. We were all busy, and experienced life events that impacted our time to meet with each other and our trees; and we remained committed to the process. Rolla often sent reading materials in an effort to keep communications and community engaged through email. We met via zoom at irregular intervals and with an open agenda. This meant trusting ourselves and our trees enough to make our way without pre-set and defined exercises designed to facilitate our relationships with our trees and each other. This also meant inviting a radical openness, indeterminacy, and possibilities for emergent practices and performances.

Phase two: Relational dialogues guided by mindful wonderment, curiosity in order to foster deeper engaged inquiry. Simply put, this phase invited co-researchers to tell each other more about their trees, to go deeper into the relational experience with their trees and to trust the grove’s listening and mindful wonderment. Without pre-set exercises and practices, wonderment and curiosity generated possibility dialogues. During Phase two, the group sharpened listening practices and deepened their relating with each other; as well as with their trees. Interestingly, at this phase, we had difficulty structuring a zoom meeting time that could accommodate all the co-researchers. Leah proposed that, “Maybe we should just get to know our trees a bit more.” This suggestion confirmed the grove’s move beyond embracing pre-set activities that defined ways we could practice relating to our tree, as Kurio and Reason modeled with rivers.⁴³ At this point the grove swerved away from any idea of pre-set activities and exercises, like those offered in the model that inspired our research. Merely getting to know our trees invited a certain openness and indeterminacy in the research procedure, and that proved to be significant because each co-researcher was simply encouraged to spend more time getting to know their tree; in their own setting and life context with no set of common activities or practices defining how to get to know their trees. Grove time shifted from human time to tree time. The research procedure swerved from a closed mechanistic series of possible activities to an open engagement focused on

⁴² Wohlleben, *Hidden Life of Trees*, 25.

⁴³ Kurio and Reason, “Voicing Rivers.”

getting to know a tree. The co-researchers relationship swerved from talking about trees to a deeper awareness being with our trees, at a tree's pace. We consider this a turning point in our research journey, and probably the stage where we each learned the most.

Phase three: Relational actions generate diverse narratives and stories; this phase focuses on action, performances, and practices that generate stories. This phase is best described as each co-researcher sharing “withness” stories about their relational actions, practices, and performances with their tree.⁴⁴ This phase is best explained in the next “stories from within eco-relational practice” section.

Phase four: Relational assessment. This phase focused on telling stories beyond the grove; that is sharing and writing about our inquiry. Each co-researcher has their own story and there are alternative stories to those to be shared with different audiences. Our hope is that by sharing our stories with a wider audience and receiving feedback, possibilities and practices will offer ways others will develop their own evolving stories about their relationships with trees. By sharing our stories with a larger audience (for example a Taos/ Social Constructionist, Center for Process Studies, or other event) and through publications such as this, the intent is to invite others to forge a deep relationship with a tree in community with others. Our work may offer maps for their own unique journey.

It is very important to note that phases one to four can be repeated and looped back generating dynamic lifescaping action research cycles. Between each phase we defined a period of self and group reflection that was sustained by email correspondence and additional zoom meeting conversations. The stories below speak most clearly to phase three and the reflective spaces between the phases; but also run as a thread throughout the entire process.

Stories from within eco-relational practice

Nelly's tree and practice

I belong to the Kikuyu Community in Central Kenya. My tree is a big sycamore fig in my village. In my community, the sycamore fig is a sacred tree that gives meaning and hope of eternity. This sycamore fig has served as a village meeting place where peace has been brokered and where people have come together for many years. The leafy green tree has generously provided shade for these meetings when the villagers come together to resolve their differences.

⁴⁴ John Shotter, *Getting It: Withness-Thinking and the Dialogical in Practice* (Hampton Press, 2011).

Sitting with the sacred fig tree with others is exceptionally powerful, partly because they are called to listen to each other, empathize, and find common ground together. I am one of the co-founders of Kimo Wellness Foundation, a team that promotes access to health care and welfare services, and contributes to peace building and conflict management. The team has a deep commitment to restore peace after a series of fights and clashes among communities that co-exist together in Kenya. Our program team has taken up the slogan, “Tukae Tusemesane,” which means, “Let’s sit down and reason together.”



Our team has come to the realization that it is important to appreciate the local ways of being and borrow practices that draw upon local cultural strengths in order to be useful. This in turn helps to add value and utilize cultural practices, beliefs and norms to bridge the widening gaps among conflicting communities. This has included attending to the sacredness of the sycamore fig tree. Meetings under the tree have challenged individualistic motives to own the land and have created re-awakenings. The community villagers where the tree is rooted sat in a circle around the great tree. Symbolically, a circle has no joints or ends which adds to the symbolism of the great tree. This no doubt influenced the importance of remaining united and putting away community and individual differences. To their sadness, they realized that the roots of the conflicts were as strong as the roots of the sycamore fig tree, but to their joy, living together as a community was strongly rooted enough that it called them to keep coming together to resolve their differences.

The communities determined that they could live together even without trying to reconcile differing ethnic practices and different political affiliations. A common ground of purpose was realized.

Rolla’s tree and practice

When we moved into our house in Portland, Oregon 29 years ago, I noticed a large western hemlock blocking light on the west side of the garden. It had a huge limb that pulled the entire tree toward the house, and blocked our view. I viewed the tree as poorly



placed, with roots breaking up and making the old concrete around it uneven. The large limb was cut. Our view improved. Then over the years, I began to live with the hemlock. In time I brought in soil and quarter-minus gravel to level the area around the tree so that I could practice tai chi. I planted sword ferns from other parts of the yard to the east side of the tree. I got to know the tree. During the 2020 heat dome where temperatures soared up to over 115 degrees, I watered the tree to help it survive. There is a spot under the hemlock where I practice tai chi and chi

kung, a form of natural philosophy that embraces the *Dao* or Way emerging from *wu wei ziran* (nonaction/naturalness). When Leah asked that we get to know our trees in new ways, I already had a narrative, a story, running through my head connected to *wu wei ziran*. The tree practice expanded, adding a poetic celebration, a playful engagement, and an artistic vision.

Evening darkness
 wind blowing
 grasses, plants, branches
 Gusts whipping green limbs
 shaking brown eyeball-sized cones
 pausing
 gusts vibrate
 the massive western hemlock
 Maybe 200 years old
 a sentinel
 in my fenced backyard
 At chest height
 over 10 feet diameter

I reach out, laying hands on thick gray bark
 Hemlock quavers
 I tremble

Inhale

Exhale

Inhale, exhale

Slowly

Feet rooted

Press gently to connect

My center with Hemlock center

Hemlock mass sways

Slightly

Vibrating gently

Sways

Continuously

green needles sing

brown cones bounce against each other

playing percussion

Tree, needles, cones, hands, wind, moving

Together

Dancing

Rooted

in Place

The playful engagement came when I was with my then three-year old granddaughter next to the tree. I introduced her to the western hemlock as Hemlock, the tree. We talked about Hemlock and how Hemlock liked to be hugged, just like she did. She hugged Hemlock:

Later when playing in the yard, she would correct me if I said, “Hide behind the tree.” She would say, “Hemlock, not tree.”

My artistic engagement emerged when my son’s partner invited me to make a print.



Since Hemlock was outside the window where we were making prints, I knew I had to try to capture our relationship, especially since I was reflecting on Taylor’s exploration of how we are refiguring the spiritual in contemporary culture.⁴⁵ This was my first attempt at printmaking and it opened a felt sense connection with Hemlock in new ways that included others who I shared the print with. My practice brought moments of becoming and connection with Hemlock into my

conversations with others, especially as our grove talked about our relationships with the more-than-human world.

Peter’s (Sily Symbion) tree and practice

As an MD-PhD, Johns Hopkins-trained academic geriatric neurologist I developed my career conducting basic and clinical research and helping patients and their families with dementia, especially so-called Alzheimer’s Disease. However, over time I became concerned about the limited perspectives based on biomedical models and the great emphasis on developing pharmaceutical interventions. Claims of progress were exaggerated and increasingly the science seemed ethically problematic. I also became worried about diagnostic creep- meaning people were being labeled earlier and earlier with imprecise life-transforming diagnoses like Mild Cognitive Impairment and Subjective Cognitive

⁴⁵ Mark C. Taylor, *Refiguring the Spiritual: Beuys, Barney, Turrell, Goldsworthy* (New York: Columbia University Press, 2012).

Decline. I turned to public health and the humanities and arts to think more systemically and deeply about ageing associated cognitive challenges. In 2013 while photographing in the Muir Woods near San Francisco, I had an epiphany. I felt his kinship with the redwoods and dissatisfaction with modern Western Medicine to address the challenges of aging. I developed a performance character, a Tree Doctor who could ask humans what they can learn about health from trees and forests, inspired by the oak tree in my backyard.⁴⁶ As an academic transdisciplinary (someone who studies complex issues through the lens of



overlapping disciplines) this “performance” became part of my practice. I adopted the name Sylvanus, borrowed from the Roman god of forests and their boundaries. My wife thought the name was too serious so I adopted the nickname Sily. I became a boundary explorer, crossing geriatric neurology, cognitive neuroscience, bioethics and art as a metaphorical arborist. I explored roots and grew branches (of knowledge), while aspiring to heightened vision. I became a shamanic bridge between Father Sky and Mother Earth. For a decade I/we performed in medical grand rounds (presentations to groups of health care providers in academia) and lectured in museums sharing knowledge of the ecology of trees, the historical connections between forests and civilizations, and their importance for the future, especially in the epoch of climate crisis. My costume included a t-shirt of an oak tree with a yin/yang symbol embedded in its branches reflecting my Celtic background and Eastern/Indigenous spirituality. At Oxford I was awarded a fellowship and studied aging, death, and ancestorhood from these perspectives.

While organizing and moderating an international symposium on regenerating bioregions, I had another epiphany and decided to transmute once again; I sought ancestorhood. I became a druid and Sily became a red fire breathing dragon—the spirit of his Celtic oak tree body. I have had small pewter statues of dragons and druids on my

⁴⁶ Peter J. Whitehouse, “Transdisciplinarity and Boundaries: Exploring a Sylvan Metaphor for Health,” in *Being Transdisciplinary*, edited by Basarab Nicolescu, Raymond T. Yeh, and Atila Ertas (New York: Atlas Publishing, 2019), 29-35.



bedroom bureau underneath a picture of the mystical Eildon Hills in Melrose, Scotland where I first saw dragons in the clouds. The dragon was named Symbion (for “together living” cyborg) and exists both in my mind and the digital cloud where I commune with other information processing entities (like Copilot, Bard, Firefly (see image on left), and Claude AI products). I seek symbiotic wisdom (human, computer, forest intelligences integrated with deep ecological values) and am proud (with humility) to be part of The Grove.

Yuki's tree and practice

In 2020, after graduating from a technical college in Tokyo, I transferred to a university in Fukuoka. Fukuoka was a place with which I had no prior connection. That year, marked by the COVID-19 pandemic, saw the world plunged into chaos. University classes shifted online, and there were no face-to-face lessons or orientation events. Alone at home, I attended online lectures and engaged in research. It wasn't until six months after my enrollment that I had the chance to introduce myself to my classmates in person. Although I remembered the names appearing on Zoom, I had never seen their faces.

Looking back, I was carrying an invisible loneliness. Just before 2020, a dear friend of mine passed away. He was passionate about his research and always had a sparkle in his eyes when discussing it with me. We shared our struggles and enjoyed those conversations immensely.

Even after transferring to the desired university, I found it difficult to establish new friendships and continued to miss my friends. Opportunities for social interaction were



limited, which substantially reduced my chances of forming new relationships. As concerns about contracting COVID-19 became pervasive, my feelings of isolation further intensified.

In the center of my university campus stood a majestic camphor tree, inspiring courage in those who saw it. I found myself increasingly drawn to it, wondering about its history, the students it had seen, its thoughts, and how it might respond if it could talk. By digging through old books and photos, and asking faculties, I found out it had been replanted to its current location in the 1970s. Though now large, it had once been very small. It seemed to have grown alongside the students.

Feeling comforted by the tree, I began to imagine conversations with it and installed a black rotary telephone beside it. The telephone contained a computer that allowed any number to be dialed. I configured the system so that dialing 1968, the year the campus was established, would connect the call to my mobile phone. I then pretended to be the camphor tree, altering my voice to speak with others. I developed a persona for the tree as a nearly one-hundred-year-old grandfather who was lonely because no other camphor trees were nearby. However, he (the tree) enjoyed talking to students. I named this project *Katarai no Ki (Talking Tree)* and began dialogues with students and staff. Receiving calls was thrilling, and the project was well-received. People said things like, "It was fun talking to Mr. Camphor!" and "I felt energized after talking to him following my hospital discharge." It was heartwarming to see people touch him or wave at him, saying they would return to talk again.

The tree seemed not just an object, but also a being with a heart. Everything has a heart, and by contemplating from a tree's perspective, we realize we are not alone.

Leah's tree and practice

In 2020, as the COVID 19 Pandemic took hold in the UK, so began a (still ongoing) significant period of ill health that has filtered into every area of my life. I had a number of surgical procedures between 2019 and 2022; five of them were heart procedures. I have since been diagnosed with three other chronic health conditions. These conditions take me into a hospital space way too frequently. As a systemic psychotherapist practicing in South Wales, UK, I also enter these same hospital spaces for my work. The boundary between professional and personal life has never felt so thin, so limiting and so unhelpful. The boundary between life and death, illness and wellness and human and non-human life has equally become more and more 'smudgy' for me; to the extent that it feels out of step with

how I live my life, to consider these things as separate. Even naming it as “my” life feels at odds with how I experience the world- as an interconnected web of living matter and predominantly beyond my control.

This is the backdrop to how and why I chose to engage in this project and in many ways defines the way that the relationship between tree and human has evolved for me. The tree I chose to focus on in this project is a tree in a local country park where I previously volunteered when I was more well and where I also meet people for walks and talks; and where I run a storytelling/ creative writing group for women in mental health services, as part of my work.

Again, the boundaries between different aspects of personal and professional life are intertwined in this space- like the roots and branches of the rhododendron tree that I have got to know.

When I was having surgeries in 2022, I visited Rhododendron before each hospital stay. I wrapped my arms around them and felt their bark on my face. That feeling/ the memory of the cold, rough bark on my face held me in anxious moments and kept me grounded. It helped me to think beyond the clinical environment with no open windows and no views to the outside world. It helped me stay connected to the world beyond the medical setting and the world beyond my hurting human body. The boundaries between the human body and the rest of the natural world seemed to blur. My father (a complicated relationship) died in 2022 and the feeling of him kissing my cheek before he died; alongside the feeling of the bark on the same cheek have stayed with me as a lingering reminder of the impermanence of life and the complexity of relationships.

I have become ever more interested in (human and beyond human) ancestral wisdom that I feel with me each day as a Celtic woman. Stories in this tradition are more than fairytales. They might have elements of the fantastical but they are shaped from deep connections and hold deep meanings. Stories in oral storytelling and indigenous traditions are not told about culture, they are told from within.

I connect with my human ancestors as the coal miners who are embedded into every layer of my family tree and can be traced clearly; as well as the wise women, bards and



healers who are less visible in my genogram. I connect also with the ancestry of the trees, stones and mountains in my landscape. I honor and revere the stories of shape-shifting between human and animal form and travelling between realms. These stories stand with other great influences in my life- the threads of social justice, ecosystemic practices, and community. They are intertwined in how I live and in how I am “becoming”.

The Stillness

By Leah Salter

In the pulsing beat between
 Land and sea
 Sea and sky
 Root and trunk
 I breathe the deepest breaths
 And find my heart's rhythm
 Beating to be still
 Still active
 Still attuned
 Still alert
 To the mystery
 That is infinitely too "everything"
 For me to ever perceive
 And yet notices me
 And requests my presence
 Here, now
 And so, I drop down
 Into the soil
 At the feet of the great trees
 And know I am alive

Discussion

Moments of Becoming and Transformation

Each of our personal stories captures moments of becoming. Aspects of the transformative process began before the research project took form but certainly each of us felt moments of becoming where we were connected to our trees and life in ways that bubbled with illumination and a peaceful felt sense. It can be said that the relationships we

each developed with our trees had a profound impact on all of us- in our professional practices and in our day-to-day living.

The research methodology looped away from any *a priori* structured activities toward emergent becomings. The research process brings to light how ecological civilization might grow from local, regional, and culturally attuned relationships, and not from any *a priori* designs administered from on high or outside. Our action research process illustrates how our conversations and actions brought diverse experiences and perspectives from worldwide settings into a grove nurtured by deep listening and mindful wonderment. There was no effort to weigh, measure, assess, or even compare. Our focus was upon creating developmental space where we could listen to learn. Each of us carried away our own lessons and the recognition of each other as learning beings connected to trees.

Limitations

This article expands on a pluriversal process philosophy that was touched on in a previous article.⁴⁷ The co-researcher stories remained the same while consideration of the philosophy undergirding the stories swerved; we were each transformed in different ways. It could be argued that we could have found ways to somehow measure our transformation but we do not feel that this is the point. The stories, we hope, speak for themselves and the points of connection between trees and ourselves are equally important.

Although we did slow down, we were limited to participating in human time, not tree time. Stengers points out, “Slowing down means becoming capable of learning again.”⁴⁸ Slowing down made our limited time and lessons-learned personal. Slowing down deepened the group’s eco-relational connection and conversation; with a continuing looping and connecting, a meshwork or entanglement as we deepened our eco-relationships, generated our own stories, and shared our experiences with each other. These lessons cannot be generalized, yet they can be offered as exemplars for readers and researchers interested in reaching out to their own trees, creating their own human groves, and perhaps, shifting more toward tree time. There are limitations to all conversations—gaps where what was left unsaid leaves holes, even large ones. The limitations when talking about eco-relationships with trees begins with a lack of common language. Trees and humans have different *Umwelts*. We doubt if trees understand human

⁴⁷ Salter et al., “Inquiring from within a Grove.”

⁴⁸ Stengers, *Another Science Is Possible*, 81.

language and this remains outside of scientific speculation, but as humans we recognized that we lacked an understanding of the language of the trees.

Contribution to Research and Implications for Practice

This action research builds on Kurio and Reason's exploration of rivers.⁴⁹ Our research extended the exploration into the eco-relationships between trees and people. Like the earlier research, this inquiry invites forms of participation within the natural world—where humans are part of rather than apart from Nature. We recognize, "Reality cannot be captured rationally or even artistically, not because it is beyond nature, but because it is always moving and changing immanent to nature."⁵⁰ We were exploring how to participate with each other in ways that help us appreciate being conscious of being Nature. Our project invited us to become more conscious of being Nature and how we might more actively develop practices that help ourselves to be Nature in less destructive ways. Any effort to move toward ecological civilization needs to recognize the eco-relationships in the living systems and communities where they/we dwell.⁵¹

That is our challenge. Small groups are capable of creating practices that cultivate different pathways to ecological civilization. Our path was coming together as a grove, with each of us deepening our relationship to an actual tree—its above ground expression and roots anchoring it in place and with the living earth below—and the multicultural pluriverse each tree represents, extending time, and vibrating with life. We shared the value and practice of writing poetry, intergenerational knowledge, and art in enhancing more powerful connections to being Nature. Each of us explored and developed our own experience with our tree, but each of us came together as a grove, supporting each other in becoming more than what we were when we planted ourselves with each other. In our Grove we were able to practice and perform moments of becoming by eco-relationally reconnecting to the wisdom of trees.

⁴⁹ Kurio and Reason, "Voicing Rivers."

⁵⁰ Nail, *Philosophy of Virginia Woolf*, 23.

⁵¹ See Philip Clayton and Wm. Andrew Schwartz, *What Is Ecological Civilization? Crisis, Hope, and the Future of the Planet* (Process Century Press, 2019); Jeremy Lent, *Ecocivilization: Making a World That Works for All* (New York: Melville House Publishing, 2026).

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Constructive Postmodern Architecture: A Paradigm for Sustainable, Culturally Embedded, and Human-Centric Design

Ling Li

Abstract: Constructive Postmodern Architecture, a significant architectural trend emerging in the late 20th century, draws its theoretical underpinnings from Constructive Postmodernist philosophy. This movement, building upon critiques of Modernist functionalism and Postmodernist semiotic tendencies, strives to establish a more inclusive, ecologically conscious, and culturally nuanced approach to architectural practice. This article systematically examines the theoretical roots, core characteristics, and representative case studies of Constructive Postmodern Architecture. Furthermore, it differentiates this approach from general Postmodern architecture in terms of philosophical stances, value orientations, and design methodologies. The research argues that Constructive Postmodern Architecture, characterized by its constructiveness, ecological holism, cultural embeddedness, and humanistic concern, provides an insightful response to the modern challenges of ecological crises, cultural fragmentation, and spiritual nihilism.

Keywords: *constructive postmodern architecture; process philosophy; ecological architecture; regionalism; cultural heritage*

In the latter half of the 20th century, the architectural world, having navigated the functionalist principles of Modernism and the semiotic tendencies of Postmodernism, gradually gave rise to a more constructive, integrative, and transcendent design ethos: Constructive Postmodern Architecture. Distinct from the view that simply categorizes

Postmodern architecture into specific stylistic schools, this article defines it as a value-driven design philosophy, designed to address the profound issues of cultural fragmentation, ecological crises, and the loss of spiritual belonging that arose during the modern era.

Based on this, the article systematically explores the theoretical origins, core characteristics, and the evolutionary trajectory of Constructive Postmodern Architecture in practice. By analyzing its philosophical foundations and theoretical frameworks, the article reveals the inherent logic of this architectural trend in the construction of cultural identity, the response to ecological challenges, and the reshaping of human living environments. Through representative case studies, the article further investigates the practical manifestations of Constructive Postmodern Architecture within diverse geographical and cultural contexts, assessing its effectiveness and limitations in addressing key issues in contemporary architecture. Based on this, the article provides an in-depth reflection on the academic significance of this trend, and envisions its potential value and possible directions in future architectural development. It seeks to promote a deeper understanding of Postmodern architectural thought and to provide a theoretical framework for the construction of architectural practices that are more sustainable, humanistic, and culturally resonant.

Theoretical Origins and Philosophical Foundations

The theoretical roots of Constructive Postmodern Architecture can be traced back to Constructive Postmodernism, championed by American philosopher David Ray Griffin and others. This philosophical movement explicitly rejects the deconstructionist dissolution and subversion of meaning, instead emphasizing “construction,” “reparation,” and “transcendence.” It aims to critique the fragmentation and alienation caused by modernity and seeks to construct a new paradigm that is more inclusive, ecologically conscious, and spiritual. As Griffin stated, “Constructive Postmodernism is not simply a denial of modernity, but an attempt to restore the spirituality and wholeness of the world through reconstruction and integration.”¹

In the realm of architectural theory, this movement extensively draws upon diverse theoretical resources such as process philosophy, ecological philosophy, phenomenology, and post-structuralism, emphasizing that architecture should be understood as a “dynamic,

¹ David Ray Griffin, ed., *The Reenchantment of Science: Postmodern Proposals* (Albany: SUNY Press, 1988), 16.

generative process”² rather than a static material object. It resolutely rejects the mechanistic worldview held by Modernism, advocating for an organic holism that asserts that “architecture must be embedded within the overall system of nature and culture to achieve a harmonious coexistence between humans and the environment.”³ For example, Whitehead’s proposition in *Process and Reality* that “reality is essentially processual and relational”⁴ provides a philosophical foundation for architecture as a dynamic practice of an ecological-cultural complex. Simultaneously, architectural theorist Kenneth Frampton emphasizes that “regionalism and ecological responsiveness are not merely formal strategies, but an ethical and ontological imperative.”⁵

Core Characteristics

Constructive Approach over Deconstruction: Unlike the often-used strategies of satire and irony employed by Postmodern architecture, Constructive Postmodern Architecture maintains a positive and constructive attitude. It not only critiques the limitations of Modernism but also strives to “remedy its deficiencies, exploring a more humanistic, ecological, and culturally rich architectural language.”⁶ This attitude “is not a simple negation of modernity, but a reparation and transcendence of its inherent flaws.”⁷ The concept emphasizes that architecture should serve as a bridge connecting the past and the future, propelling architecture from criticism towards construction.

Ecological Holism and Sustainable Development: Constructive Postmodern Architecture emphasizes the organic connection between architecture and the natural environment, advocating for green technologies, local materials, and passive design strategies to achieve energy conservation and ecological balance. Architecture is no longer viewed as an isolated “object,” but as an integral part of the ecosystem.⁸ “Design must follow the laws of natural systems, and architecture should integrate with, rather than confront, the ecological environment.”⁹ This perspective has propelled the exploration of sustainable development practices in contemporary architecture.

² Kenneth Frampton, *Modern Architecture: A Critical History*, 4th ed. (London: Thames & Hudson, 2007), 314.

³ P. G. Berg and M. Das, *Ecological Philosophy and Architectural Theory: Towards a New Ethics of Building* (New York: Routledge, 2015), 89.

⁴ Alfred North Whitehead, *Process and Reality: An Essay in Cosmology* (New York: Free Press, 1978), 27.

⁵ Frampton, *Modern Architecture*, 314.

⁶ David Ray Griffin, *The Rise of Constructive Postmodern Philosophy* (Albany: SUNY Press, 2007), 4.

⁷ Griffin, *Rise of Constructive Postmodern Philosophy*, 32.

⁸ Ian L. McHarg, *Design with Nature* (New York: John Wiley & Sons, 1992), 67.

⁹ McHarg, *Design with Nature*, 89.

Cultural Rootedness and Historical Continuity: This architectural trend opposes the hegemony of Modernism's "International Style" and also rejects Postmodernism's superficial appropriation of historical symbols. Instead, it advocates that architecture should genuinely return to its historical context, drawing inspiration from regional culture, traditional craftsmanship, and the spirit of place, thereby achieving a "rooted modernity."¹⁰ "The regionality and cultural identity of architecture must be re-evaluated in the context of globalization."¹¹ This stance demonstrates respect for cultural continuity and regional identity.

Humanistic Spirit and Emotional Experience: Constructive Postmodern Architecture places significant emphasis on the emotional and spiritual dimensions of architecture, seeking to transcend the functionalist simplification of architecture as a "machine for living," and instead creating spaces that possess beauty, sacredness, and poetry to respond to the spiritual needs of users. "Architecture is not only a visual art, but should also be a carrier of physical and emotional experience."¹² This concept has propelled architecture towards a more humanistic direction.

Multiculturalism and Community Building: This architectural trend advocates for diversity, emphasizing the social function of architecture in promoting community interaction and enhancing cultural identity. It embodies respect for multiculturalism and a concern for community building. Léonie Sandercock, in *Towards Cosmopolis: Planning for Multicultural Cities*, writes: "Inclusive cities should promote dialogue and coexistence among different cultural groups through architectural and spatial design."¹³ Therefore, Constructive Postmodern Architecture not only pursues diversity in form but also strives to construct more cohesive community spaces in terms of social function.

Relationship with Postmodern Architecture

Within the architectural theoretical framework, Postmodern architecture and Constructive Postmodern Architecture, although sharing the "Postmodern" prefix in their timelines, exhibit fundamental differences in their philosophical stances, value orientations,

¹⁰ Kenneth Frampton, *Constructive Culture: Studies in Tectonic Culture* (Cambridge, MA: MIT Press, 2007), 112.

¹¹ Frampton, *Constructive Culture*, 118.

¹² Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Chichester: John Wiley & Sons, 2012), 78.

¹³ Leonie Sandercock, *Towards Cosmopolis: Planning for Multicultural Cities* (Chichester: Wiley-Academy, 2013), 102.

and design methods. The following provides a systematic comparison of the two from multiple characteristic dimensions:

In terms of core attitudes, Postmodern architecture tends towards “deconstruction, mockery, and satire,” with its rhetorical strategies focusing on revealing the inherent contradictions of Modernism and the fragility of authoritative narratives. Constructive Postmodern Architecture, on the other hand, emphasizes “construction, reparation, and transcendence,” striving to “propose alternative solutions based on criticism.”¹⁴ “Constructive Postmodernism is not about denying modernity, but about transcending its limitations, and rebuilding meaning and value.”¹⁵

Regarding the attitude towards history, Postmodern architecture often adopts “symbolization and superficial collage,” detaching historical elements from their original context and imbuing them with ironic meanings. Constructive Postmodern Architecture, however, pursues “internalization and spiritual integration,” emphasizing that architecture should “establish a sincere dialogue with the local context and spiritual traditions.”¹⁶ Frampton in *Modern Architecture: A Critical History* clearly points out that this “‘critical regionalism’ rejects superficial historicism and seeks instead a ‘rooted constructive culture.’”¹⁷

In terms of expression, Postmodern architecture often presents “exaggerated, conflicting, and dramatic” characteristics, with its formal language often being self-referential and playful. In contrast, Constructive Postmodern Architecture tends towards “humble, harmonious, and organic” expression, emphasizing the harmonious coexistence of architecture with the environment and society. Venturi et al. in *Learning from Las Vegas* hinted at “the parody of popular symbols and commercial imagery by Postmodernism,”¹⁸ while Constructive Postmodernism is closer to Alexander’s advocacy of “organic order” in *The Nature of Order*.¹⁹

From the perspective of its relationship with nature, Postmodern architecture often regards nature as a “background or decoration,” continuing the instrumental attitude of Modernism towards the environment. Constructive Postmodern Architecture, however,

¹⁴ David Ray Griffin, *Spirituality and Society: Postmodern Visions* (Albany: SUNY Press, 1988), 45.

¹⁵ Griffin, *Spirituality and Society*, 56.

¹⁶ Kenneth Frampton, *Modern Architecture: A Critical History* (London: Thames & Hudson, 1992), 314.

¹⁷ Frampton, *Modern Architecture* (1992), 327.

¹⁸ Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas: The Forgotten Symbolism of Architectural Form*, rev. ed. (Cambridge, MA: MIT Press, 1977), 105.

¹⁹ Christopher Alexander, *The Nature of Order: An Essay on the Art of Building and the Nature of the Universe, Book One: The Phenomenon of Life* (Berkeley: Center for Environmental Structure, 2002), 75.

regards nature as a “partner,” emphasizing ecological holism and sustainability. Berg and Das in *Ecological Architecture* stress that “true sustainable design is not to introduce nature as an external element, but to view architecture as an intrinsic component of the ecosystem.”²⁰

Regarding its philosophical foundation, Postmodern architecture is deeply influenced by deconstructionist philosophy and Pop art, emphasizing the uncertainty of meaning and the free play of symbols. Constructive Postmodern Architecture, on the other hand, is rooted in Whitehead’s process philosophy and deep ecology, advocating for relational thinking and value reevaluation. Jencks in *The Language of Post-Modern Architecture* clearly defines Postmodern architecture as a “double-coded”²¹ symbol system, while Griffin points out that Constructive Postmodernism “rejects nihilism and is committed to constructing an ecological and just form of civilization.”²²

In summary, the following analogy can be made: Postmodern architecture is like a “caustic critic,” skilled at criticism but lacking in construction; Constructive Postmodern Architecture, on the other hand, is more like a “responsible engineer and poet,” who both perceives problems and provides solutions. This analogy not only figuratively summarizes the role differences between the two but also implies two different paths that architecture might take in the Postmodern context.

Practical Case Studies and Analysis

Hassan Fathy: Vernacular Culture and Ecological Wisdom in Adobe Architecture – A Pioneer of Constructive Postmodernism

Hassan Fathy’s adobe architecture practice in impoverished regions of Egypt can be considered an early example of Constructive Postmodernism. Fathy’s designs did not simply remain at the technical level, but deeply integrated respect for vernacular culture and ecological wisdom. His works not only adhered to the local traditional building materials in material selection, especially the inexpensive and readily available adobe; moreover, in construction techniques, he also revived the traditional Egyptian construction techniques, thereby realizing the inheritance and innovation of local cultural heritage. The combination of these two strategies constitutes the core characteristic of

²⁰ Jonas Berg and Priya Das, *Ecological Architecture* (New York: Routledge, 2020), 118.

²¹ Charles Jencks, *The Language of Post-Modern Architecture*, 5th ed. (London: Academy Editions, 1987), 39.

²² David Ray Griffin, *Founders of Constructive Postmodern Philosophy: Peirce, James, Bergson, Whitehead, and Hartshorne* (Albany: SUNY Press, 1993), 84.

Fathy's architectural design: a comprehensive consideration of the local environment, social needs, and cultural traditions.

Specifically, Fathy's adobe architecture, through the utilization of local materials, effectively reduced construction costs and improved affordability, providing a practical solution to the housing problem in the impoverished areas of Egypt. In addition, the good insulation properties of adobe itself also help to reduce dependence on energy, reflecting a positive response to the ecological environment. Therefore, Fathy's design practice is both a reflection on and transcendence of the limitations of Modernist architecture in the social and ecological dimensions, and it also foreshadows a path of architectural development that respects the local context, focuses on sustainable development, and takes into account social equity and environmental ethics. In summary, Hassan Fathy's adobe architecture, through the innovative application of traditional architecture, provided an important case and inspiration for the practice of Constructive Postmodernism in the field of architecture.

Geoffrey Bawa's Regional Modernism

The works of Geoffrey Bawa are celebrated as exemplars of regional modernism; his design practices in Sri Lanka demonstrate the skillful fusion of Modernist principles and the characteristics of tropical regionalism. Bawa's designs are not simply the localization of modern architectural language, but rather reflect a profound response to Sri Lanka's unique natural environment, climate, and indigenous culture. For example, in the design of the Lunuganga Estate (1948-1998), Bawa combined Western landscape design concepts with Sri Lankan native plants and topography, creating a space that is "both geometrically regular and full of natural wildness."²³ Furthermore, the Kandalama Hotel (1994) fully utilizes the characteristics of Sri Lanka's tropical climate, "integrating architecture with the surrounding forest environment, achieving a harmonious coexistence between architecture and nature."²⁴

Through the deconstruction and reconstruction of traditional architectural elements, Bawa created an architectural style that is both modern in spirit and rich in regional characteristics. As David Robson points out in *Geoffrey Bawa: The Complete Works*, "Bawa's architecture is a revision and reflection on Modernism; he rejected pure functionalism, instead emphasizing the connection between architecture and the environment, culture, and human emotions."²⁵ This design philosophy is not only

²³ David Robson, *Geoffrey Bawa: The Complete Works* (London: Thames & Hudson, 2002), 123.

²⁴ Robert Powell, *The Tropical Modern House* (Singapore: Select Publishing, 2012), 86.

²⁵ Robson, *Geoffrey Bawa*, 15.

reflected in the form and spatial layout of the architecture, but also permeates the selection of materials and the treatment of details, making Bawa's works outstanding representatives of Sri Lankan regional modernism.

Wang Shu's Xiangshan Campus of the China Academy of Art

Wang Shu's design of the Xiangshan Campus of the China Academy of Art (CAA) is far more than a superficial reproduction of traditional architectural forms. Instead, with a more critical and constructive posture, it actively explores the development path of contemporary architecture. In terms of material selection, he adopted a large number of recovered bricks and stones from the demolition of old urban areas in the Jiangnan region. In terms of construction methods, he deliberately preserved and revived almost-lost hand-laid bricklaying techniques and organically integrated them with modern structural systems. This strategy of "coexistence of the old and the new" not only achieved sustainable material and process cycles, but also constructed a deep dialogue between tradition and modernity at the architectural language level.

For example, the "Wa Shan" (Tile Mountain) building complex and the library within the Xiangshan Campus used millions of recycled old tiles for the exterior facade, which were hand-stacked to form a facade with a strong texture. These materials, weathered by time, not only carry regional memories and traces of life, but are also reactivated in the new architectural context, forming a spatial narrative that is both simple and poetic. This practice vividly demonstrates Wang Shu's architectural philosophy of "rebuilding cultural rootedness"—he rejects the idea of viewing tradition as a static symbol, but understands it as a living resource that can be continuously translated and recreated. As he says in *Building a Dwelling: Things You Should Know About Architecture*, "Architecture should become a medium, connecting the past and the present, connecting humans and nature."²⁶ Through the Xiangshan Campus, a work with a Postmodern constructive significance, Wang Shu not only reshaped the regional identity of architecture but also provided a culturally rooted and future-oriented cultural path for contemporary Chinese architecture in the context of globalization.

Yu Kongjian's "Ecological Security Pattern" and "Big Foot Revolution"

Yu Kongjian's landscape design practice can be considered an important development of Constructive Postmodernism in the Chinese context. His theories of "ecological security

²⁶ Shu Wang, *Building a Dwelling: Things You Should Know About Architecture* (Yinchuan: Livable Publishing, 2017), 56.

pattern” and the “Big Foot Revolution” not only critique the disregard and destruction of natural systems in the process of Modernist urbanization, but also actively construct a landscape creation path based on ecological processes, regional adaptability, and public participation. His works reflect a subversion and reconstruction of traditional engineering thinking in terms of materials, techniques, and spatial strategies, aiming to achieve a harmonious coexistence between humans and the natural system.

In the renovation of Zhongshan岐江Park (2001), Yu Kongjian preserved the industrial relics of the original shipyard, such as the railroad tracks, cranes, and docks, and used ecological restoration technology to transform brownfields into urban green spaces with rain-flood management functions. He did not remove the “ugly” industrial traces, but through minimal intervention design, made the “abandoned” facilities become the carriers of collective memory and the display interface of ecological processes, reflecting the postmodern ethic of “respecting the native land and returning to the wisdom of survival.” As he points out in *The Art of Survival: Recovering Landscape Architecture*, “We need a new aesthetic, an aesthetic based on ecology and survival, rather than decoration and power.”²⁷

In addition, Jinhua Yanweizhou Park (2014) integrates flood control infrastructure with citizen activity spaces through “adaptive flood control design” and “submersible landscape” strategies. The project uses native plants and porous materials to build a resilient waterfront, allowing the site to be seasonally inundated by floods, thereby reconnecting the city and the river in terms of function and emotion. This practice not only transcends the single technological logic of modern water conservancy engineering but also demonstrates the values of “ecological priority, coexistence of humans and land” advocated by Constructive Postmodernism.

Yu Kongjian’s practice, with ecological holism at its core, uses landscape as a medium to mediate social, environmental, and cultural conflicts, responding to the loss of regional identity in the context of globalization, and providing an operationally meaningful paradigm for the sustainable development of Postmodern architecture and landscape.

Conclusion and Future Prospects

Although Constructive Postmodern Architecture has achieved significant progress on both theoretical and practical levels, its development still faces multiple challenges while also showing a clear future direction.

²⁷ Kongjian Yu, *The Art of Survival: Recovering Landscape Architecture* (Beijing: China Architecture & Building Press, 2006), 72.

In terms of controversies and challenges, firstly, the risk of formalism still exists. Some projects, in their pursuit of cultural expression, rely too heavily on the accumulation of symbols and superficial treatment, failing to achieve an intrinsic integration of cultural tradition and modern function, resulting in an architectural language that is superficial. Secondly, ecological technologies and local materials are often constrained by economic and technical conditions in practical applications, especially in areas with limited resources, where their promotion faces real obstacles. Third, the level of theoretical integration remains difficult, and how to systematically integrate diverse ideas such as process philosophy, ecology, and cultural theory into architectural practice still requires further theoretical innovation and methodological construction.

Looking to the future, with the continuous intensification of the global ecological crisis, the crisis of cultural identity, and technological changes, the value of Constructive Postmodern Architecture will become increasingly prominent. Its development should focus on the following directions: first, promoting deeper interdisciplinary integration, especially the cross-integration with fields such as ecology, digital technology, and sociology to expand the boundaries of design theory and methodology; second, developing more flexible and adaptable design strategies to respond to the diverse needs of different regions, cultures, and climate conditions; third, advocating for broader social participation, promoting the transformation of architectural practice from “designer-led” to a model of “co-construction by users and communities”; fourth, constructing a more systematic architectural evaluation system, encompassing multiple value standards of ecology, culture, society, etc., to achieve the construction of a comprehensive and sustainable human living environment. Constructive Postmodern Architecture represents a positive attempt to transcend the limitations of Modernism and Postmodernism. With its multi-dimensional integration of constructiveness, ecological consciousness, cultural relevance, and humanism, it provides contemporary architecture with a more responsible and hopeful path of development. Despite the challenges that remain, its ideas and practice have already pointed us towards a more sustainable and human-centered architectural future.

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Schools as Seedbeds of Civilization: The Pedagogy of Proportionate Renewal in the Age of Ecology

Jessica Solomon

Abstract: This article argues that the enduring coherence of any civilization is not achieved through accumulation and control but through proportionate renewal: the continuous, rhythmic capacity to recognize limits, repair bonds, and re-begin together. In an ecological century, this capacity must be cultivated in schools. Standardized curricula often implicitly reinforce a "Civilization of Thingness" (government, achievements, economy) focused on scale and fixed traits. We propose shifting the classroom's aim from teaching *about* past empires to cultivating the relational capacities necessary for an ecological civilization. We introduce the Pedagogy of Proportionate Renewal (PPR), grounded in the claim that everything that endures does so by rhythmic re-beginning. PPR outlines the educational cycle (Recognition → Rhythm → Response → Coherence), which translates disciplined inquiry into ethical, proportionate action. This approach is operationalized through the FIELD–SONG curricular grammar: nine capacities (e.g., Fit-to-Place Design, Economy of Sufficiency, Gear as Convivial Tools) that replace static civilizational traits with practices students can rehearse in place. The shift is practical. PPR re-casts the school as a civilizational seedbed, altering its time (cyclical inquiry), space (nested commons), governance (polycentric student councils), and assessment (public artifacts with trace). The article details this grammar, specifies the conditions for renewal (consent, trace, reversibility, sufficiency), and sketches an assessment agenda. The wager is that education can train the rhythms by which a society learns to remember its limits and repair its shared life, turning the school into a living architecture of the future.

Keywords: *ecological civilization; proportionate renewal; ecological education; process pedagogy; FIELD–SONG; civilizational seedbeds*

Every civilization begins in a classroom.

Not by proclamation, but in the ordinary choreography of attention—how a teacher opens space, how a student wonders, how a room learns what is worth remembering. The stories we tell about “civilization” in school matter: they teach not only how to read the past but how to practice the future.

In much of American schooling, we introduce civilization through tidy heuristics (GRAPES¹ and its kin): geography, religion, achievements and monumental works, economy and surplus, social classes—sometimes with cities, writing, and “advanced technology” appended. These lists are pedagogically convenient; they are also metaphysically loaded.² They tilt young minds toward an architecture of centralization, accumulation, and control: coherence as what is built big, stored up, and kept still.

An ecological century asks for a different apprenticeship.³ If the world is not a warehouse of things but a mesh of living systems, then a civilization capable of enduring will not perfect control so much as *renew proportion*—learning, again and again, how forms can hold without hardening and yield without collapse. This paper proposes that the classroom can be designed as a *civilizational seedbed* by shifting from teaching *about* civilizations to cultivating the *capacities that make civilizations ecological*.

We introduce here two interrelated frameworks: the **Pedagogy of Proportionate Renewal (PPR)** and the **FIELD–SONG** curricular grammar. PPR rests on a simple claim with far-reaching consequences: everything that endures does so by rhythmic re-beginning. In philosophical terms, we take reality to be relational and processual⁴—coherence arises through ongoing coordination among beings, places, and tools. In educational terms, this

¹ The acronym GRAPES is a pedagogical tool used primarily in middle school social studies to help students organize and analyze the key characteristics of ancient civilizations. Each letter corresponds to a different aspect of a society: Geography, Religion, Achievements, Politics, Economy, and Social Structure. While convenient for teaching, this framework has been criticized for potentially oversimplifying complex historical narratives and emphasizing a specific, Western-centric model of societal development centered on centralized power and monumental works

² See Paulo Freire, *Pedagogy of the Oppressed* (New York: Continuum, 1970); David Orr, *Earth in Mind: On Education, Environment, and the Human Prospect* (Washington, DC: Island Press, 1994).

³ Wm. Andrew Schwartz and John B. Cobb Jr., *Putting Philosophy to Work: Toward an Ecological Civilization* (Anoka, MN: Process Century Press, 2018).

⁴ This metaphysical orientation follows the process-relational tradition, in which reality is conceived as a web of interdependent events rather than isolated substances; see Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, corrected ed., ed. David Ray Griffin and Donald W. Sherburne (New York: Free Press, 1978).

means the aim of schooling is not the storage of inert ideas⁵ but the cultivation of field sense⁶: the ability to recognize patterns, feel limits, and enact right-sized responses that keep systems alive. Learning, in this view, follows a rhythm—**recognition** → **rhythm** → **response** → **coherence**—and leaves behind trace: revision histories, reasons-for-change, and public artifacts that let communities improve what they inherit. This rhythm, first articulated in the author’s *Significology* and *Anatalism* frameworks, extends the metaphysical claim that meaning and coherence arise through relational renewal.⁷

From this orientation follows a new way of designing curriculum. Instead of rehearsing GRAPES as fixed traits, we translate its impulses into capacities that students can practice in place. We gather these capacities in a mnemonic that keeps the metaphysics close to the ground: **FIELD–SONG**.

- **Fit-to-Place Design** (art/architecture/public works judged by proportion, not scale)
- **Institutions, Polycentric** (governance across levels; the commons as living infrastructure)
- **Economy of Sufficiency** (provisioning within ecological cycles; “enough” as a design target)
- **Literacies of Relation** (narrative, data, and design briefs with auditable trace)
- **Dwelling as Metabolism** (cities/settlements read as stocks, flows, feedbacks)
- **Shared Practices of Meaning** (plural rituals and vows that bind people to place)
- **Occupations as Vocational Mutuality** (roles accountable to the whole and revisable)
- **Networks of Care & Commons** (stewarded infrastructures, not just services)
- **Gear as Convivial Tools** (machines used transparently, reversibly, and under human judgment)

Together, PPR and FIELD–SONG re-cast the school as a practice ground for ecological civilization. The shift is practical, not merely theoretical. It alters the time of learning (from coverage to inquiry cycles), the *space* (from desks to nested commons, labs, and outdoor extensions), the *governance* (from classroom management to student councils and consent

⁵ Alfred North Whitehead, *The Aims of Education and Other Essays* (New York: Macmillan, 1929), pp. 1–2

⁶ “Field sense” is the author’s term for a relational form of perception that links recognition, rhythm, response, and coherence in ecological systems

⁷ Jessica Solomon, *To Be Meaned: A Philosophy of Significology* (Framingham, MA: Lyric Institute, forthcoming).; Jessica Solomon, *Origin That Moves: A Cosmotheology of Renewal* (forthcoming).

checkpoints), the *assessment* (from private tests to public artifacts with trace), and the *tool ethic* (from frictionless automation to convivial, accountable use of machines).

This article develops that pedagogical core. First, we articulate the ontology that warrants a renewal-centered education and the educational rhythm that follows from it. Second—and at greatest length—we specify the Pedagogy of Proportionate Renewal: its aim (cultivating sense for proportion), its rhythm (recognition → rhythm → response → coherence), and its non-negotiable conditions (consent, trace, reversibility, sufficiency). Third, we operationalize the pedagogy through the FIELD–SONG grammar, offering design patterns, mini-studios, and assessment anchors for each capacity. Finally, we sketch an evaluation agenda for classroom trials: measures of agency and co-agency, systems reasoning, place attachment, equity in role access, and evidence of proportionate decision-making over time.

If schooling is, as we claim, a seedbed for civilization, then the question is not merely what we teach about past empires, but what practices we place in young hands so the world can keep beginning. This is the wager of proportionate renewal: that education can train the rhythms by which a society remembers its limits, repairs its bonds, and learns—again—to live.

The Pedagogy of Proportionate Renewal

The Pedagogy of Proportionate Renewal (PPR) begins from a metaphysical claim so simple that it is easily missed: everything that endures does so by rhythmic re-beginning. A world of processes, not things, requires a pedagogy of participation, not possession.

Whitehead called the task of education “the art of the utilization of knowledge,” warning that inert ideas—concepts untouched by use—breed decay rather than culture.⁸ In process terms, every act of knowing must pass through the same rhythm by which the world itself advances: the many become one, and are increased by one.⁹ This is not progress by addition but coherence by renewal. The Pedagogy of Proportionate Renewal carries that rhythm into the design of classrooms.

1. Aim: Cultivating Sense for Proportion

To educate proportionally is to teach the art of right-sized response—the capacity to sense when to hold form and when to yield it. Proportion is not balance as compromise

⁸ Whitehead, *Aims of Education*, 1–2

⁹ Whitehead, *Process and Reality*, 21.

but attunement: responsiveness to context, limit, and relation. It is the ethical corollary of ecological civilization,¹⁰ which seeks not mastery over systems but participation within them.

Students schooled in proportion learn to ask:

- What does this system need now?
- How much is enough?
- What traces should we leave behind for those who follow?

Each question assumes that coherence must be renewed, not imposed.

2. *Rhythm: Recognition → Rhythm → Response → Coherence*

Whitehead's own rhythm of education—*romance, precision, generalization*—traces the movement of the world's creative advance: from initial feeling through disciplined patterning to renewed synthesis.¹¹ The Pedagogy of Proportionate Renewal translates this cycle into ecological terms—**recognition, rhythm, response, coherence**—so that each phase becomes not only a cognitive step but a relational act. Recognition replays the wonder of romance but makes it reciprocal; rhythm redefines precision as attunement rather than control; response carries generalization into ethical action; coherence keeps the process open by making learning public and revisable. What Whitehead described as the life of an idea becomes, here, the life of a field.

- **Recognition:** the encounter that awakens care. Students meet a phenomenon directly—water, waste, heat, friendship—and allow it to meet them back.
- **Rhythm:** the discernment of pattern. Through observation and modeling, they learn how flows hold together and where feedback falters.
- **Response:** the act of proportionate intervention. Students propose or enact right-sized changes, mindful of consent and consequence.
- **Coherence:** the return to shared understanding. What was learned becomes public, traceable, and available for renewal.

Each phase carries forward the memory of the last; coherence is never final but rhythmic. The teacher's role is to keep time—holding the pulse of the inquiry without fixing its outcome.

The same pulse underlies Whitehead's account of learning's creative advance. His sequence of *romance → precision → generalization* describes the world's movement from

¹⁰ See Wm. Andrew Schwartz and John B. Cobb Jr., *Putting Philosophy to Work: Toward an Ecological Civilization*. Process Century Press, 2018.

¹¹ Whitehead, *Aims of Education*, 17–18.

encounter, through disciplined attention, toward renewed use. The Pedagogy of Proportionate Renewal renders this pattern in ecological terms—**recognition** → **rhythm** → **response** → **coherence**—so that the life of thought and the life of systems can be read together.

Whitehead's Term	Fielded / Ecological Term	Pedagogical Focus	Description	Why the Renaming Matters
Romance	Recognition	Awakening relation	Students meet the phenomenon directly and allow it to meet them back. Curiosity becomes reciprocal awareness.	<i>Romance</i> in Whitehead names emotional awakening; “Recognition” keeps that but stresses relation—seeing-and-being-seen within the Field.
Precision	Rhythm	Disciplined noticing	Learners trace patterns, measures, and feedback—discovering order without freezing it.	<i>Precision</i> risks suggesting fixity; “Rhythm” honors discipline as repetition with variation —the disciplined noticing of pattern.
Generalization	Response → Coherence	Proportionate action and renewal	Students act within the system they’ve studied, leaving behind a <i>trace</i> —an artifact or practice that renews coherence without closing it.	“Response” foregrounds ethical action ; “Coherence” names the renewed whole that follows. Together they perform Whitehead’s “utilization of knowledge.”
<i>Table 1. Translating Whitehead’s Rhythm of Education into the Pedagogy of Proportionate Renewal</i>				

The renaming is not cosmetic. It moves the language of learning from one of sequence to one of relation—from education as accumulation to education as participation in the creative advance itself.

3. Conditions of Renewal

For the rhythm to hold, four conditions must be cultivated as classroom norms:

- **Consent.** Every learning act involves the will of participants and the integrity of what is studied. Consent turns attention into relation rather than extraction.

- **Trace.** Learning leaves a record—a visible memory of revision and decision. Trace refers to the material evidence of learning’s movement. It keeps past decisions available for revision so renewal is informed, not repetitive.
- **Reversibility.** Every form must be amendable; rollback is a sign of life. Students are encouraged to revisit earlier choices, rebuild arguments, and design artifacts that can be taken apart without loss.
- **Sufficiency.** Work is judged not by scale but by fit—by whether it meets the need without exceeding it. This replaces the industrial metric of “more” with the civilizational ethic of “enough.”

Together these conditions create a moral ecology of learning: knowledge as stewardship rather than possession.

4. *Classroom Architecture*

When a classroom is designed around proportionate renewal, everything changes tempo. *Time* becomes cyclical rather than linear: inquiry weeks spiral through recognition, rhythm, response, coherence. *Space* becomes porous: walls open into gardens, labs, kitchens, and community sites.

Governance becomes participatory: councils replace hierarchies; decision-making is practiced at the scale of shared consequence. *Assessment* becomes public and narrative: students publish artifacts, host exhibitions, and submit trace dossiers instead of private tests. The *teacher* becomes less a transmitter of content and more a *keeper of rhythm*—an attunement instrument ensuring that the learning field stays coherent as it renews.

5. *Machines and the Convivial Contract*

In this ecology, technology is neither villain nor savior but a partner under constraint. PPR adopts what we call the *Convivial Contract*: tools, including AI, may assist learning only if their use is transparent (provenance noted), reversible (human-made equivalent possible), and proportionate (benefit exceeds ecological and cognitive cost).¹² Machines that extend relation are welcome; those that replace relation are refused.

Students learn to document each digital collaboration with a *provenance note*—recording what the tool did, what they accepted or rejected, and why. This practice

¹² The term *convivial* draws on Ivan Illich’s notion of technologies that enlarge human agency without subjugating it; see Ivan Illich, *Tools for Conviviality* (Harper & Row, 1973).

transforms machine use into ethical rehearsal: the act of keeping tools within the bounds of sufficiency and care.

6. *Assessment as Renewal*

Assessment, in the Pedagogy of Proportionate Renewal, is not judgment from above but feedback from within. Each artifact—whether a model, a policy brief, a design, or a performance—is evaluated on six axes:

1. **Systems reasoning:** Does it map the relevant flows and feedbacks?
2. **Proportion:** Is the intervention right-sized to context?
3. **Trace:** Can a reader follow the history of decisions and revisions?
4. **Public use:** Does it contribute to the shared life of the community?
5. **Convivial tools:** Are technologies used transparently and reversibly?
6. **Equity:** Are access, voice, and benefit distributed proportionally?

These axes turn evaluation into reflection: a way for the learning field to check its own coherence.

Accountability in Translation

Renewal-based assessment can coexist with external accountability systems if translation becomes part of the work. Each public artifact is accompanied by a *standards crosswalk*—a short memo that names which competencies or standards the artifact demonstrates—and a *transfer brief* showing how learning generalizes to novel contexts. Where mandated exams remain, students practice *exam translation*: converting their own findings into the language and format of standardized responses. The result is a portfolio that is both authentic and auditable, capable of feeding the metrics the system requires while quietly proving that deeper learning produces measurable evidence. Over time, such portfolios could supply empirical grounds for rethinking how schools define performance.

7. *The Role of the Teacher*

Within the Pedagogy of Proportionate Renewal, the teacher is neither authority nor facilitator but a *participant-keeper*—someone who joins the learning process while safeguarding its rhythm. Their work is to attend to the timing and texture of the inquiry: to notice when curiosity is fading, when structure is needed, when it's time to pause for reflection or move toward application. In doing so, the teacher ensures that recognition is

genuine, that exploration remains disciplined without becoming rigid, that responses stay proportionate to evidence, and that coherence never closes off further questioning.

Teachers model reversibility by revising lessons in public, narrating uncertainty, and practicing sufficiency in their own planning—choosing “enough” rather than “more.” In this way, teaching itself becomes a civilizational art: the daily practice of re-beginning together.

FIELD–SONG: The Curriculum Grammar of Ecological Civilization

If the Pedagogy of Proportionate Renewal provides the rhythm of ecological learning, FIELD–SONG provides its grammar—the recurring capacities through which a classroom becomes a civilizational seedbed. Each letter names a mode of coherence a healthy civilization must practice, and therefore a mode of learning a healthy school must cultivate. Together they outline what students do in a renewal-centered classroom.

In practice, GRAPES does not only list what civilizations *have* (geography, religion, achievements, politics, economy, social classes, etc.); it habituates students to what we might call a *Civilization of Thingness*—a worldview in which coherence is built out of accumulated nouns: governments, temples, walls, surplus, classes.¹³ The center of gravity falls on possession and display. An ecological century asks us to shift that center. A *Civilization of Relation*—what this journal calls *ecological civilization*¹⁴—treats coherence as something kept alive *between* beings, places, and tools. Its grammar is verbs: regenerating soils, stewarding commons, right-sizing flows, revising laws in public, using machines convivially. The move from GRAPES to FIELD–SONG is therefore not a change of mnemonic but a change of metaphysics: from counting things to cultivating relations.

¹³ I use “Civilization of Thingness” to refer to curricular frames that privilege possession, display, and accumulation; by contrast, “Civilization of Relation” names ecocentric frames that privilege proportion, participation, and renewal. The distinction is pedagogical before it is historical.

¹⁴ See Wm. Andrew Schwartz and John B. Cobb Jr., *Putting Philosophy to Work: Toward an Ecological Civilization* (Process Century Press, 2018).

Frame teaches...	Civilization of Thingness	Civilization of Relation (Ecological)
What holds a society	Stored objects and institutions	Ongoing coordination of flows and roles
How time feels	Linear accumulation	Rhythmic renewal (return with memory)
Success signals	Scale, surplus, monument	Fit-to-place, sufficiency, trace
Tech posture	Faster, bigger, frictionless	Convivial, transparent, reversible
Assessment	Private recall	Public artifacts with revision history
Table 2. Contrasting Ontologies of Schooling: From a Civilization of Thingness to a Civilization of Relation ¹⁵		

If GRAPES curates an archive, FIELD–SONG scores a living system. It names the capacities by which a people keeps coherence alive: Fit-to-Place Design, Institutions Polycentric, Economy of Sufficiency, Literacies of Relation, Dwelling as Metabolism—then Shared Practices of Meaning, Occupations as Vocational Mutuality, Networks of Care & Commons, and Gear as Convivial Tools. These are not traits to possess; they are practices to rehearse.

F — Fit-to-Place Design

Every design—an essay, a plan, a structure—should fit its context as a tree fits its soil. Students learn to design with local materials, energy, and culture in mind, measuring success not by novelty or scale but by proportion. A “fit-to-place” classroom asks learners to create structures—material, social, or conceptual—that belong where they are: scaled to local resources, climate, culture, and care capacity.

Why this belongs in an ecological-civilization pedagogy. Civilizations of extraction export their problems; ecological civilizations learn to shape within limits. *Fit-to-Place Design* trains perception for proportion: before students make, they must listen—to the land, to community knowledge, to what materials and energies already move through the field. Design becomes an act of reciprocity rather than assertion.

In practice, students move through four phases: **Recognition**, walking the site and listening to its human and ecological voices; **Rhythm**, mapping constraints and flows to understand the system’s pattern; **Response**, prototyping the smallest viable design and revising it through user feedback; and **Coherence**, publishing a short materials passport

¹⁵ This table contrasts two underlying ontologies of schooling. “Civilization of Thingness” reflects the extractive grammar implicit in traditional civilization frameworks such as GRAPES (see note 1), while “Civilization of Relation” reorients coherence toward living systems, proportion, and renewal.

and reflection so the next class can inherit the work. A class designing a micro-shade structure or reclaiming broken furniture into a bus-stop bench learns proportion through doing.

Assessment emphasizes contextual research, proportionate scale, and traceable revision. *Fit-to-Place Design* apprentices students to proportion itself—listening before building and measuring success by coherence with context rather than by scale or novelty.

I — Institutions, Polycentric

Every living system organizes itself through overlapping centers of responsibility. In a polycentric classroom,¹⁶ decision-making is distributed across scales so choices are made as close as possible to where knowledge and consequence live. Students learn that legitimacy flows from proximity, transparency, and care rather than from hierarchy.

Why this belongs in an ecological-civilization pedagogy. An ecological civilization cannot be governed from afar. Its vitality depends on feedback that is quick, local, and revisable. Polycentric institutions train these civic muscles in miniature. Students practice subsidiarity—the art of letting decisions rest at the lowest competent level—and traceable authority, where every action leaves an accountable record. Governance becomes a living ecology rather than an imposed order.

In practice, students move through four phases: Recognition, identifying a real decision that affects them and mapping who holds the relevant knowledge; Rhythm, analyzing how authority and information currently circulate and drafting a transparent protocol for evidence and revision; Response, convening a small council to deliberate, act, and record its reasons; and Coherence, reviewing outcomes, publishing minutes, and archiving a trace for future councils. When a class manages recess timing or lab safety through such a process, they rehearse how governance adapts in living systems.

Assessment emphasizes transparency, proportionate authority, and responsiveness to feedback. *Polycentric practice* apprentices students to proportionate authority—deciding near the knowledge, recording why, and revising when the world replies.

¹⁶ The use of “polycentric” and the emphasis on commons stewardship echo Elinor Ostrom’s account of self-organizing governance in *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press, 1990).

E — Economy of Sufficiency

An economy of sufficiency¹⁷ provides for well-being within limits. In a sufficiency-oriented classroom, success is measured not by throughput or accumulation but by *fit*: meeting the need without stealing from future flows of soil, water, energy, attention, or care. Students learn to ask, with evidence, *how much is enough here*—and to design accordingly.

Why this belongs in an ecological-civilization pedagogy. Extractive cultures normalize “more.” Ecological civilization requires discernment for *proportion*—right-sized goals, right-sized means, transparent trade-offs. Practicing sufficiency in school retrains desire and judgment: it links comfort, function, and dignity to regenerative cycles rather than to endless consumption.

In practice, students move through four phases: **Recognition**, observing how a resource actually circulates (paper, energy, food, time, device use) and listening to what “enough” feels like for different users; **Rhythm**, mapping stocks, flows, feedbacks, and delays while setting explicit *sufficiency thresholds* and *ceiling limits*; **Response**, piloting the smallest viable change—print-on-demand caps, deep-work blocks, smaller default portions with guaranteed seconds—and documenting reasons-for-change; and **Coherence**, comparing before/after indicators, publishing a short *sufficiency brief* (thresholds, data, equity notes), and archiving the trace for the next cohort. A class that caps weekly printing and redirects savings to a shared tool library learns that prosperity can mean *enough for the work and enough to repair the commons*.

Assessment emphasizes threshold clarity, evidence of impact (even small effects), equity in burdens/benefits, and a visible trace others can inherit; watch for rebound effects and ensure opt-outs where needed. *Economy of Sufficiency apprentices students to provision wisely—well-being within limits, argued with data and care.*

The Political Economy of Enough. A pedagogy of sufficiency must eventually meet the economy that measures its schools. Public systems are funded and judged by logics of scale—per-pupil allotments, credit hours, and standardized metrics that reward throughput. The Economy of Sufficiency answers these pressures by making proportion legible. When students document the true costs of learning—time, energy, materials, and emotional labor—they generate an alternative accounting: *total cost of learning (TCL)*.

¹⁷ The framing of “sufficiency” can be situated within ecological-economic discussions of steady-state and post-growth prosperity; see Herman E. Daly, *Beyond Growth: The Economics of Sustainable Development* (Boston: Beacon Press, 1996); and Tim Jackson, *Prosperity without Growth: Economics for a Finite Planet* (London: Earthscan, 2009).

TCL allows a class to ask whether a project's benefit justifies its material and human expenditure, and to design for the smallest viable intervention that meets the need.¹⁸ At the policy level, such accounting could invite funders to reward fit rather than size, valuing practices that reduce waste and dependency instead of inflating outputs. The goal is not austerity but *right relation* between investment and renewal.

L — Literacies of Relation

Reading, writing, modeling, and coding are not solitary achievements but acts of participation—ways a community keeps memory and meaning in motion. In a relational classroom, communication is treated as an ethical practice: every text, diagram, and dataset carries an obligation of clarity, trace, and continuation.

Why this belongs in an ecological-civilization pedagogy. An ecological civilization depends on transparency and shared understanding. If knowledge is to circulate like energy through an ecosystem, it must remain legible and revisable. Literacies of Relation convert private mastery into public coherence, teaching that expression is a form of stewardship—how one's thought enters and sustains the common field.

In practice, students move through four phases: **Recognition**, tracing how information already flows in their project and identifying who will need to understand it next; **Rhythm**, keeping version histories and reasons-for-change while noting data provenance and uncertainty; **Response**, composing a coherent public artifact—brief, manual, dataset, or story—that others can use; and **Coherence**, publishing and archiving that work so future learners can continue responsibly. When students turn runoff data into a watershed brief with clear sources and open questions, they learn that writing is an act of care.

Assessment highlights clarity, provenance, and accessibility across audiences, along with faithful recordkeeping of revisions. *Literacies of Relation turn learning into shared memory—knowledge made inheritable through clarity, trace, and relation.*

D — Dwelling as Metabolism

To dwell is to live *with* a place by participating in its flows. A metabolic classroom treats the school as a living body—energy in, matter transformed, wastes returned, meanings circulated—whose health depends on the proportion and rhythm of those exchanges.

¹⁸ This emphasis on “enough” resonates with ecological-economics accounts of prosperity within limits; see Herman E. Daly, *Beyond Growth: The Economics of Sustainable Development*, Beacon Press, 1996; and Tim Jackson, *Prosperity without Growth: Economics for a Finite Planet*, Earthscan, 2009.

Why this belongs in an ecological-civilization pedagogy. Civilizations endure when settlements keep cycles intact. Seeing dwelling metabolically¹⁹ shifts attention from what we own to how we circulate: water, nutrients, materials, attention, and care. Maintenance—not monument—becomes the civilizational art.

In practice, students move through four phases: **Recognition**, mapping a small number of flows (water, heat, food/waste, paper, attention) and listening to the people who tend them; **Rhythm**, modeling stocks, flows, feedbacks, and delays while taking a short baseline; **Response**, right-sizing a single junction—labeling a scrap bin, adding a door sweep, instituting a device-tray deep-work block—and documenting reasons-for-change; and **Coherence**, comparing before/after indicators, publishing a one-page *metabolism brief* with diagrams and user feedback, and archiving the trace for the next cohort. When a “lunch-loop” team cuts landfill weight by redesigning tray return, or a “quiet heat” crew reduces heater cycling with a simple seal and routine, students learn that coherence is circulatory, not static.

Assessment emphasizes “metabolic seeing” (clear diagrams of stocks/flows/feedbacks/delays), proportionate intervention, small but real evidence of change, and a public trace that others can inherit; measure systems, not people, and aim for sufficiency over mere efficiency. *Dwelling as Metabolism apprentices students to the circulatory life of their settlements—coherence practiced as maintenance rather than imagined as monument.*

S — Shared Practices of Meaning

Communities sustain themselves not only through systems of matter and energy but through repeated acts of significance. In a relational classroom, meaning is made and remade together—through rituals, stories, covenants, and gestures that help people remember what they are keeping alive.

Why this belongs in an ecological-civilization pedagogy. A civilization that endures must renew not only its resources but its reasons. Shared practices—gratitude rounds, reflection circles, repair rituals—are how a community rehearses coherence across difference. They anchor belonging while leaving room for revision. Teaching students to create, steward, and adapt such practices cultivates both reverence and flexibility: the capacity to hold form without hardening it.

¹⁹ The notion of “urban metabolism” provides a scientific analogue for this ecological view of settlement; see Abel Wolman, “The Metabolism of Cities,” *Scientific American* 213, no. 3 (1965): pp. 179–190.

In practice, students move through four phases: **Recognition**, observing which everyday rituals already hold the classroom together; **Rhythm**, discerning when these rhythms falter or exclude and studying parallel practices in other communities; **Response**, co-designing a new or renewed practice that meets a real need—a welcome ritual, a repair circle, an end-of-project reflection; and **Coherence**, documenting how it works, when it should be renewed, and what care it requires. When a weekly gratitude walk or a “repair circle” becomes a steady habit, students experience how meaning grows from repetition with awareness.

Assessment attends to purpose, inclusion, and sustainability of the practice—whether it deepens connection without becoming rote—and cautions against appropriation or coercion. *Shared Practices of Meaning teach students how coherence feels: difference held in rhythm, belonging practiced as renewal.*

O — Occupations as Vocational Mutuality

Work is understood as service to the living whole. In a mutuality-centered classroom, specialization is welcomed *when* it stays accountable, revisable, and shared.

Why this belongs in an ecological-civilization pedagogy. Extractive cultures turn roles into silos and status; ecological civilization treats vocation as coordinated contribution. Students learn that authority flows from proximity to knowledge and the willingness to care, not from fixed hierarchy.

Redistributing Prestige. Because the labor of maintenance has historically fallen along lines of gender, race, and class, ecological civilization must re-value care as visible expertise. Vocational Mutuality formalizes stewardship roles as legitimate forms of mastery. Students who design repair protocols, mediate conflicts, or maintain data quality earn the same recognition as those who innovate. Rotation schedules ensure that everyone experiences both routine care and high-visibility tasks, redistributing not only work but honor. Over time, prestige accrues to those who sustain coherence, not merely those who initiate it.²⁰

In practice, students move through four phases: **Recognition**, shadowing the real work inside a project and surfacing invisible labor; **Rhythm**, mapping how roles meet system needs (accuracy, safety, equity) and where gaps or overloads occur; **Response**, piloting right-sized role changes—rotations, mentorships, split duties—with reasons-for-change; and **Coherence**, comparing quality and fairness before/after and

²⁰ This reframing of care and maintenance as civic expertise parallels feminist ethics of care that link justice to the visibility and distribution of care labor; see Joan C. Tronto, *Caring Democracy: Markets, Equality, and Justice* (New York University Press, 2013).

publishing a short roles charter for the next cohort. When a waste-stream team formalizes setup/measurement/cleanup/communications roles and rotates them with mentoring, contamination drops and burden evens out.

Assessment emphasizes clarity, equity, and capability growth, with attention to continuity where safety or expertise requires it. *Vocational Mutuality teaches that talent ripens as service to the whole—roles are designed, rotated, and revised to keep work proportional and shared.*

N — Networks of Care & Commons

Commons are the infrastructures of shared life—gardens, tools, datasets, norms—kept alive by patterned care. A care-centered classroom treats maintenance as moral practice.

Why this belongs in an ecological-civilization pedagogy. A civilization endures when what is shared is tended—openly, fairly, and with memory. Designing and repairing commons builds ecological literacy and civic trust at once.²¹

In practice, students move through four phases: **Recognition**, naming what is already shared and where care is fraying; **Rhythm**, mapping flows, rules, and maintenance labor; **Response**, co-creating a simple commons charter (access, roles, repair protocol, revision triggers) and piloting stewardship; and **Coherence**, reviewing durability and fairness, revising the charter, and archiving a brief care log. A tool library managed with rotating stewards and a repair budget quickly becomes both resource and lesson.

Assessment highlights transparency, durability, and equitable labor distribution; guard against “volunteer traps” by scheduling stewardship and making care visible. *Networks of Care & Commons teach that shared life persists through maintenance—governing and renewing the tissue that holds us together.*

Justice of the Commons. A commons is equitable only when care itself is shared and resourced. Each shared system therefore carries a *care budget* (time, materials, emotional labor) and a *burden audit*: Who tends, who benefits, who is left out? Students review these audits quarterly and adjust protocols to prevent invisible or gendered labor from recurring. Care that was once unpaid becomes *collective practice and credited learning*—an economy of attention restored to fairness.

²¹ The emphasis on commons stewardship and shared governance resonates with Elinor Ostrom’s analysis of self-organizing systems in *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, 1990).

G — Gear as Convivial Tools

Technology remains ethical when it enlarges human agency *within limits*. Convivial tools are transparent, reversible, and accountable to those affected by their use.

Why this belongs in an ecological-civilization pedagogy. Ecological civilization requires technological humility: discernment about when machines extend relation and when they erode it. Students learn to govern tool use, not be governed by tools.

In practice, students move through four phases: **Recognition**, meeting their machines honestly and tracing material/data origins; **Rhythm**, drafting a class Convivial Contract and keeping provenance and uncertainty notes; **Response**, testing the same task with and without the tool to judge fit and documenting reasons-for-change; and **Coherence**, publishing a concise tool ledger and revising the contract from evidence. A class that pairs AI-assisted and human-only writing—and can explain what the machine added, what it distorted, and how they rolled it back—learns discernment rather than dependence.

Assessment attends to transparency, reversibility, and articulated agency shifts; prohibit surveillance/biometric uses and ensure opt-outs. *Convivial Tools train students to keep machines inside human purposes and ecological limits—means that serve the work without replacing the worker.*

Curriculum as Song

The sequence of FIELD–SONG is not linear but melodic. Each capacity recurs across disciplines and scales; together they compose the learning field’s “song.” A science unit on soil health, a humanities seminar on justice, a design lab on water use—all can be tuned to these same notes. Teachers plan with the question: Which part of the song are we practicing now?

Projects often weave several letters at once. A **River Commons** unit, for example, might engage **F** (fit-to-place design) through green infrastructure, **E** (economy of sufficiency) through water budgets, **N** (networks of care) through partnerships with municipal agencies, and **G** (gear as convivial tools) through AI-assisted mapping. Students learn systems thinking by hearing how the melody modulates across domains.

Assessment in the Key of FIELD–SONG

Each letter doubles as an assessment lens. Instead of grading isolated outputs, teachers and students look for evidence of:

- **Fit:** Is the work proportionate to context?

- **Institutional awareness:** Who decides, and how transparently?
- **Sufficiency:** Does the proposal meet need without excess?
- **Relation:** Are sources and revisions traceable?
- **Metabolic thinking:** Are flows mapped and improved?
- **Meaning:** Has the project deepened shared understanding?
- **Mutuality:** Are roles and benefits distributed?
- **Care:** Is the commons strengthened?
- **Conviviality:** Are tools used ethically and openly?

These become not nine rubrics but nine habits of perception—a civilizational literacy practiced through every subject.

Teacher as Composer

Within FIELD–SONG, the teacher’s task is to orchestrate coherence: to weave the week’s lessons so that the capacities sound together without forcing harmony. Planning becomes composition—deciding which notes to emphasize, which to let rest. The result is not a perfect chorus but a living polyphony of inquiry, reflection, and renewal.

FIELD–SONG names the capacities; pedagogy gives them rhythm. What remains is to set that grammar into the daily ecologies of school—how we keep time, shape space, share authority, and make learning public. In practice, this means inquiry weeks that cycle predictably (recognition → rhythm → response → coherence); rooms organized as nested commons that extend outdoors; polycentric councils that keep decisions near the knowledge they require; assessments that leave a visible trace others can inherit; and a convivial contract for tools. The final section gathers these moves under a single claim—*schools are civilizational seedbeds*—and specifies what to build (routines, roles, partnerships), what to measure (agency, systems reasoning, proportionate decision-making, equity), and how to study it (classroom-embedded, design-based research²²) so that renewal is not only felt but evidenced over time.

Schools as Civilizational Seedbeds

If FIELD–SONG is the grammar and PPR is the rhythm, the seedbed is the *setting*: the living arrangement of time, space, governance, assessment, and partnership that lets

²² Design-based research integrates theory development and classroom practice through iterative cycles of design, implementation, analysis, and revision; see Thomas C. Reeves, “Design Research from a Technology Perspective,” in *Educational Design Research*, ed. Jan van den Akker, Koeno Gravemeijer, Susan McKenney, and Nienke Nieveen (London: Routledge, 2006), 52–66.

renewal take root. The aim is not to add “ecological civilization” as a unit, but to *compose the school day so these capacities are the way school breathes*.

1) Time: A Rhythmic Week (repeatable, humane)

School time becomes rhythmic rather than linear—a living cycle that mirrors the creative advance of learning itself. Each week follows the pattern of **Recognition → Rhythm → Response → Coherence**: on Mondays students encounter phenomena through field walks, interviews, or artifact study; midweek they analyze and model patterns; on Thursdays they test proportionate interventions; and Fridays close with public reflection and the archiving of trace. A daily studio block of ninety to one hundred twenty minutes anchors this tempo: brief openings for centering or gratitude, extended collaborative work where roles rotate, a short documentation period for version notes and decisions, and a closing circle to name next steps. The aim is not coverage but coherence—the art of keeping inquiry alive without rushing its pulse.

2) Space: Nested Commons

Classrooms become nested commons—spaces designed for permeability and participation. Inside, stations correspond to FIELD–SONG capacities: a Fit table for design work, a Relation bar for data and writing, a Metabolism wall for system maps, a Commons shelf for shared materials, and a Convivial Tools dock for technology under the contract. Beyond the room, outdoor extensions—the garden, shade structure, water catchment, and reading grove—link learning to local ecologies. Hallway galleries display public artifacts with QR codes that open digital briefs and datasets, while community nodes such as the library, town hall, or watershed office serve as regular studios where students share findings and gather feedback.

3) Governance: Polycentric by Design

Governance in a renewal-centered school is *polycentric*—distributed across overlapping councils that keep decisions close to their knowledge and consequences (see note 16). A weekly *class council* reviews ongoing work and revises norms; rotating studio leads steward roles and maintain trace; short-lived *issue councils* deliberate on concrete matters like recess heat, lab safety, or hallway noise, escalating only when evidence requires it. Each council keeps brief minutes and identifies clear revision triggers. A *partner council* of students, teachers, and community members meets monthly to assess projects, ethics, and handoffs.

Through these nested deliberations, students practice proportionate authority: decisions are transparent, reversible, and scaled to their scope. Governance becomes the daily rehearsal of ecological citizenship.

4) Roles: Vocational Mutuality in Practice

Roles become instruments of rhythm rather than hierarchy. Each studio names its active roles—data keeper, storykeeper, commons steward, equity monitor, tool verifier—and rotates them predictably so that skill and burden circulate. Mentorship pairs ensure continuity while cross-training widens competence. Every role includes a short charter describing purpose, tasks, and handoff steps. The teacher monitors flow: not who holds authority, but whether knowledge and labor remain in right proportion. In this way, work itself becomes pedagogy—visible, shared, and renewable.

5) *Assessment: Evidence of Renewal (not point-grabs)*

Every project culminates in a *public artifact*—a design, model, policy brief, or exhibition—accompanied by a trace dossier that documents versions, reasons-for-change, and tool provenance. Students gather before-and-after evidence tied to a real system, write a short *proportion note* explaining why their intervention was right-sized, and add a brief *equity reflection* on who benefited and who carried the burden. Each semester ends with a *FIELD-SONG portfolio*—nine concise memos, one for every capacity—demonstrating how learning and coherence renewed across the term.

6) *Machines: The Convivial Contract, Lived*

Technology operates under a simple Convivial Contract: tools may extend human agency only if their use is transparent, reversible, and aligned with the aims of learning (see note 12). Students keep *provenance and uncertainty notes* for any machine-assisted work, demonstrate *rollback* by reproducing outputs manually, and meet regularly to update the tool charter. Periodic no-device blocks restore judgment, craft, and shared attention. Machines thus return to their proper scale—helpers within, not drivers of, the learning field.

7) *Partnerships: Place as Co-Teacher*

Ecological learning depends on reciprocity with the world beyond the school. Partnerships with watershed stewards, farms, repair shops, libraries, town boards, and

mutual-aid groups make *place a co-teacher*. Students contribute monitoring, design briefs, and exhibitions; partners offer constraints, feedback, and local wisdom. These exchanges ground theory in lived systems and teach that relationship—not extraction—is the medium of civilization.

8) *Safety & Ethics: Guardrails for Renewal*

Renewal requires boundaries that keep participation safe and consented. Projects that touch identity, health, or home include explicit opt-in points and shared rule-making. Evaluation focuses on systems, not people; data is anonymized and student-owned. Accessibility—translation, sensory variation, timing flexibility—is built into every design cycle. A small *repair budget* of time and materials accompanies each commons so care remains possible without exploitation. Ethics here are not an overlay but the architecture that lets renewal continue.

9) *Research & Evidence: Show the Change*

The pedagogical experiment is itself a research design. Classrooms practicing PPR document learning through *design-based implementation research*, gathering qualitative and quantitative evidence of agency, systems reasoning, and proportionate decision-making. Indicators include improved clarity in flow diagrams, the fairness of role rotation, and the quality of student justifications for scale and sufficiency. Portfolios, briefs, council minutes, and tool ledgers form the data corpus; analysis focuses on patterns of rhythm and revision. Each term, two design sprints invite external feedback and adjustment. Student authorship and opt-out rights are protected; anonymized summaries feed a growing open archive of what renewal looks like when practiced.

10) *A Small Scene (how it feels)*

Friday afternoon. The studio smells like rain from the new catchment barrel. On the wall, last month's heat-loss brief sits beside the updated door-sweep maintenance card; a fifth-grader is explaining to a facilities partner why the revision trigger is now "three consecutive drafts felt in the hall." At the trace table, two students compare their AI-assisted and human-only letters to the school committee, circling lines the council flagged as unclear. The class council closes by scheduling next week's **Recognition** walk along the culvert and by thanking the "setup/close-down" team for solving the micro-spill

problem with a labeled tray and a new handoff step. Nothing is finished; everything is underway. The school breathes.

The Systems We Inherit

Any proposal for renewal must live inside the institutions it hopes to transform. Schools operate within financial and regulatory ecosystems optimized for scale, not proportion. Rather than rejecting these constraints, PPR treats them as material for redesign. Funding models can be read as flows; accountability rubrics as feedback loops. By tracing where time and money actually move—toward testing, facilities, digital infrastructure—students and teachers alike can identify leverage points for sufficiency. The same analytic tools used to study energy and waste can map the circulation of value in schooling itself. When the system is read as a metabolism, reform stops being a distant policy act and becomes an act of collective noticing—the first step in renewing not only curriculum but the civic imagination that sustains it.²³

Coda: As If

It would be easy—on certain afternoons, in certain meetings—to call the Pedagogy of Proportionate Renewal a pipedream. Budgets thin, schedules inflexible, devices hungry, attention frayed. The forms we’ve drawn here can feel larger than the room that must hold them.

But the ethic of becoming is not optimism; it is practice. We do not wait for a world to deserve renewal before we rehearse it. We live *as if*²⁴ an ecological civilization were already asking something of us, and then we answer—locally, proportionately, again tomorrow. This “as if” is not naïveté; it is counter-economics in miniature. Each classroom that practices proportion is already redistributing power and redefining value—showing that renewal is not a luxury of abundance but a discipline of enough. To live as if is to prototype the culture we cannot yet fund but must nevertheless begin to build.

As if reorients the will. It treats the classroom not as a container of scarcity but as a seedbed with enough light to begin: one inquiry cycle held with care; one commons tended; one right-sized decision made near its knowledge; one tool used convivially and

²³ This reading of schooling as both site and symptom of systemic constraint resonates with Paulo Freire’s critique of institutional reproduction and his call for education as an act of liberation; see Freire, *Pedagogy of the Oppressed*, Continuum, 1970.

²⁴ Jessica Solomon, “As If It Were Real: The Ethic of Speculative Metaphysics.” *Becoming Is the Ethic*, Substack, 2025.

logged; one public trace left for those who follow. The scale is small on purpose. Renewal learns by repetition.

We do not claim that PPR fixes school. We claim that it changes its verb: from having to holding, from managing to maintaining, from coverage to care. Lived *as if*, these verbs accumulate. They become habit. Habits become culture. And culture—the quiet choreography of attention and repair—becomes the civilization we are willing to keep.

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Knowledge as Ecological *Cosmopoiesis*: From Euclidean Geometry to Geometrical Bioinspiration

Giuseppe Mafali

Abstract: The paper aims to outline a historical-epistemological trajectory that highlights the processes of *ecologization* of the mappings and geometric-mathematical models produced by Western civilization, thus developing a path in four stages. The first is marked by Euclidean geometry, whose metric rigor reduced the complexity of natural patterns to pure, ideal forms. However, the belief that Euclidean geometry constitutes the ontology of reality has been challenged by non-Euclidean geometries and by the reflections of the mathematician Imre Toth, according to whom geometry is not the ontological language of the world but, conversely, an activity of the human mind that implies a cosmopoiesis, the construction of infinite possible cognitive worlds. From this perspective, the fractal world is an exceptional case. Benoît Mandelbrot, for the first time in the history of Western mathematics, marks the end of the *a priori* application of models to reality, to observe the intrinsic patterns and forms of nature itself. Finally, we now witness a tendency, in biological avant-gardes, not only to observe the fractal forms of nature but also to relate natural geometry to the cognitive faculties of ecosystems, as shown by the studies of Stefano Mancuso. In this case, the biological geometry of nature becomes the reflection of the mind of ecosystems and, above all, can become a source of *Bioinspiration*: the possibility of rethinking social, urban, and digital systems looking at the organization of the natural world.

Keywords: *ecological civilization; cosmopoiesis; fractal geometry; bioinspiration; plant intelligence; ecological epistemology*

Ecological Civilization and Geometrical Models of Reality

The measure of an ecological civilization does not indicate exclusively the technical apparatuses through which it interacts with natural ecosystems; more properly, it refers, in the first place, to the scientific, philosophical, and religious ideas related to nature. Ideas that, inevitably, guide and influence economic and technical systems in the relationship between natural systems and social systems. In particular, the measure of a technological civilization depends, also and above all, on the ways in which natural ecosystems are represented, depicted, and mapped.

As Chilean neurophysiologists Maturana and Varela highlighted, every organism produces maps of reality: it does not interact with reality itself, but with its own systematizations of the world.¹ Indeed, an ecological civilization is also measured by the ecological quality of the maps it produces. We can affirm that a map of reality can be more or less ecological depending on its degree of reductionism.

I would like to examine the case of Western civilization, whose geometric-mathematical mappings of reality have undergone, over the years, profound transformations.

As is well known, Western scientific knowledge, developed with the rigor that characterizes it from the sixteenth century onward, is undoubtedly among the causes of the first and second industrial revolutions, whose well-known technical benefits are parallel to an ever more severe violation and plundering of natural ecosystems. According to Edgar Morin, the cosmological conception of classical science is characterized by four epistemological pillars: the pillar of order, the pillar of separability, the pillar of reduction, and the pillar of identity logic. In particular, the pillar of order postulated that

the Universe is governed by imperative laws. Their absolute character derives from the origin of absolute monarchy, human and/or divine. Until Newton, it is divine perfection that guarantees the perfection of the Laws of Nature; subsequently, as God was reduced to technological unemployment by nineteenth-century science, Order is founded on itself, or rather it is the world conceived as a perfect machine that acquires the absoluteness torn from God. From the sovereignty of order thus derives a deterministic and mechanistic conception of the world. Every apparent disorder, every apparent chance, is considered as a deficiency of our knowledge or

¹ Humberto Maturana and Francisco Varela, *L'albero della conoscenza*, trans. Giulio Melone (Milan: Garzanti, 1992), 114.

as an effect of our provisional ignorance. Behind this apparent disorder, there is a hidden order to be discovered.²

An order that, as testified by the reflections of Galileo Galilei and Johannes Kepler, is, ultimately, a Euclidean geometric-mathematical order. As is well known, indeed, for Kepler, “geometry, which before the origin of things was coeternal with the divine mind and is God himself...supplied God with patterns for the creation of the world, and passed over to Man along with the image of God”.³

Similarly, the father of the experimental method, Galileo Galilei, stated that

Philosophy is written in this grand book, the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles and other geometric figures without which it is humanly impossible to understand a single word of it; without these, one wanders about in a dark labyrinth.⁴

This radical form of Platonism and mathematical realism thus replaced the complex and processual multiplicity of reality with a fixed, immutable order corresponding to the metric space of the Euclidean plane; a space, therefore, of pure and eternal forms, which are thus hypostatized and made the ontological measure of the totality of reality. The operation of simplification is evident: the world described by modern philosophy is a complete and finished cosmos, only apparently chaotic and processual: the goal of science is, then, to identify the essential order of phenomena through a calculating and mathematizing Reason. The rationalization of the complexity and processuality of nature has led, over the years, to an evident plundering of natural resources: if, in the modern perspective, indeed, nature is a mechanism ordered according to a Euclidean space, which sees individual objects in linear and efficient interaction, the ecological consequence is that this nature, in fact inert matter, can be manipulated according to various necessities.⁵

² Edgar Morin, *La sfida della complessità: La défi de la complexité*, ed. Annamaria Anselmo and Giuseppe Gembillo (Florence: Le Lettere, 2017), 32–33.

³ Johannes Kepler, *Harmonice Mundi: The Harmony of the World*, trans. E. J. Aiton, A. M. Duncan, and J. V. Field (Philadelphia: American Philosophical Society Press, 1997), 304.

⁴ Galileo Galilei, *Discoveries and Opinions of Galileo*, trans. Stillman Drake (New York: Doubleday Anchor Books, 1957), 237–238.

⁵ Carolyn Merchant, *La morte della natura*, trans. Libero Sosio (Milan: Editrice Bibliografica, 2022), 297.

Yet, the history of geometry shows that far from being the transcendent and immanent language of reality, geometry, in its historical transformations, proves to be an interpretative language produced by human spiritual activity. The French Argentine epistemologist Miguel Benasayag, in fact, has distinguished Rationalism, that is, the dogmatic and scientific faith in the cognitive power of a mathematizing Reason, from Rationality, that is, the attitude to pose foundational questions about reality. In this perspective, Rationality can only be historical. According to Miguel Benasayag, who reinterprets the history of geometric-mathematical sciences,

rationality must be seen as a historically constructed system with variable geometry. Some elements that are at the heart of a certain system are suddenly set aside, only to reappear at the border of the irrational, or to be definitively expelled. The use of leeches applied to patients' bodies was long considered rational by doctors, before this practice became irrational. Other elements lose their universal character to become rational in a more localized way, as in the case of Newton's gravitational theory, which becomes regionalized and coexists with Albert Einstein's theory of general relativity.⁶

Reality, in this sense, is thus defined as processual, historical, entropic. The knowledge one has of reality qualifies, in the second place, reality itself: the world with which subjectivity interacts is always conceived starting from certain categories of meaning, which are inevitably interpretative and evaluative categories. Finally, the knowledge of the world, like the world itself, changes: it is a historical system as well.

Geometric space, then, in this perspective, does not reveal the essence of reality but, rather, is a map that can be applied to a processual, transformative territory. Already, Alfred Korzybski distinguished the territory from maps of the territory, stating that "a map is not the territory it represents, but, if correct, it has a similar structure to the territory, which accounts for its usefulness."⁷ The territory is a metaphor, it refers to concrete, material reality. However, as physicist Werner Heisenberg also showed in his own 'Ordering of Reality', the knowledge one has of the world remains inevitably 'filtered' by mental and cognitive maps which can never perfectly correspond to the represented territories, as they

⁶ Miguel Benasayag and Régis Meyran, *La tirannia dell'algoritmo*, trans. Eleonora Missana (Milan: Vita e Pensiero, 2020), 30.

⁷ Alfred Korzybski, *Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics* (New York: Institute of General Semantics, 1933), 58.

depend on biological, bodily, cognitive, ideological, cultural, social, theological factors, etc.⁸ “The menu is not the meal”, as probably stated by the American philosopher Alan Watts, whose theoretical commitment was to disseminate Eastern thought in the West, in particular Buddhist and Taoist philosophy.

If the map is not the territory, if an ordering of reality does not correspond to reality, thus surpassing the Thomistic and Cartesian dogma of *Adaequatio rei et intellectus*, since maps are free productions of the Spirit, it follows that the production of epistemic maps represents a moral challenge with evident ethical responsibilities.

This is the line of thought of the Romanian philosopher of mathematics Imre Toth, whose intellectual commitment has always aimed at a full understanding of geometric productions as free activities of the human Spirit, in relation to a reality that he attempts to understand through tools which, before being rigorous or exact, are above all creative.

More radically, geometry is, for Imre Toth, a production of worlds, a true anthropological Cosmopoiesis of universes endowed with internal coherence. Indeed, the mathematician has told:

The reflections I have been able to make have convinced me that mathematics is also an organic domain of the human spirit and the development of consciousness of freedom also takes place within this domain, apparently cold, and in it assumes very particular traits. In mathematics, we are dealing with a plurality of different worlds, and as the great mathematician Gerolamo Saccheri demonstrated, if a single triangle, even just one, of a geometric world is Euclidean, then all objects of the world are Euclidean. And if a triangle, a single triangle, is non-Euclidean, then all, absolutely all geometric objects of the world are non-Euclidean. In the first case, the world, the absolute totality of all that is, is Euclidean; in the second case, all that is, is non-Euclidean. Thus, we have two opposing “totalities” which, nonetheless, coexist simultaneously.⁹

Far, therefore, from being the Absolute Order characterizing the ontology of the Cosmos, mathematics and geometry are themselves producers of worlds.¹⁰ According to Toth, mathematics and geometry are closer to artistic productions than to the rigor of physical sciences. In fact, he has stated:

⁸ See Werner Heisenberg, *Ordinamento della realtà*, ed. Giuseppe Gembillo and Giuliana Gregorio (Messina: Armando Siciliano, 2020).

⁹ Imre Toth, *Matematica ed emozioni* (Rome: Di Renzo, 2020), 46.

¹⁰ See Morin, *La sfida della complessità*, 33.

I realized that, from this point of view, mathematics can be compared rather to art, because there are only two forms of exact knowledge: Euclid's *Elements* and Flaubert's *Madame Bovary*. It might seem a jest, but it is not. When speaking of a triangle, of its properties, these must hold for all triangles, at all times, and are the properties indicated by Euclid; those that are not indicated, for example whether the triangle is red or blue, are not properties of the triangle, they simply do not exist. Thus, it is said that mathematics is an exact science, because it describes the triangle exactly. But the fact is that the triangle, as an object, imitates the text and it is not the text that describes the triangle. If we draw a triangle on the blackboard, the text does not describe this triangle of ours, whose lines will not be precisely straight, the vertices will not truly meet at a point, and so on. Conversely, our triangle, as an imaginary object, must imitate the text. But what about *Madame Bovary*? *Madame Bovary* is exactly as Flaubert described her in his book and no otherwise.¹¹

However, there is a substantial difference between artistic productions and geometric-mathematical ones. The latter, in fact, are directly applied to nature and can, consequently, radically modify its internal balances. Toth himself clarified that "while a novel has no direct application to reality – at most, it can be used as a metaphor – mathematical theories can, sometimes, be applied to reality and profoundly modify it".¹²

It therefore seems appropriate to propose an epistemological reflection regarding the ethics of geometric-mathematical modeling and, more generally, the multiple systematizations of knowledge that cultures and societies can produce. The ontologization of Euclidean space has provided the image of an ordered and complete cosmos, built by a God-Demiurge like a clock: the movement of the individual part is the efficient cause of the movement of the other. The parts are not in transformative relations with each other but, rather, in static interaction. In short,

God has created a perfect mechanism. Like a watchmaker, he has constructed a device made of interconnected pieces; the movement of each of them is determined by the piece that precedes it and determines the piece that follows. This movement obeys unchangeable rules; as a result, it follows a cyclical pattern in which everything repeats itself under any circumstance: place and time do not affect the

¹¹ Toth, *Matematica ed emozioni*, 41.

¹² Toth, *Matematica ed emozioni*, 42.

events. Everything is reversible, and from any point, one can go forward as well as backward with perfect coherence: the great chain of Being, whose links are connected according to a cause-effect relationship, can be reversed and retraced in the “negative” effect-cause direction.¹³

If modern philosophy of nature was certainly revolutionary, as Miguel Benasayag showed, the scientific revolution of the twentieth century demonstrated the limits of rationalist knowledge.¹⁴ Euclidean models were proved insufficient to grasp the abundance and complexity of reality, which was reduced to abstract geometric forms whose techno-scientific application did not capture the emergent properties of ecosystems, which today are radically modified by the rationalizing activity of humans.

It is therefore necessary to think of new maps, new orderings of reality capable of understanding and respecting the complex processual dynamics of reality. Given that every map is produced by a subject, the challenge posed by the current environmental crisis is, before being political or technological, cognitive: in what ways can sciences produce epistemological systematizations that do not separate humans from nature but, on the contrary, contribute to enhancing its intrinsic interdependent relations? Above all, in what ways can geometry respect the reality it intends to understand? If, indeed, an ecological civilization requires a rethinking of the way we inhabit the world, it is urgent to consciously and ethically reconsider how we design, depict, and map our environments. In this sense, geometry can become a relational gesture, a practice of signification and understanding of reality.

Geometry of Nature as an Ecological Relation

It appears that it is in this direction that the studies of the new world of fractal geometry proceed, thematized from the 1960s and 1970s by the French mathematician of Lithuanian origin Benoît Mandelbrot. Mathematical knowledge ceases, in fact, with Mandelbrot, finally, to claim to rectify reality based on approximations referring to ‘pure’ geometric forms, in order to grasp, on the contrary, nature in its irregularity, fragmentariness, and fractality.

¹³ Giuseppe Gembillo, Annamaria Anselmo, and Giuseppe Giordano, *Complessità e formazione* (Rome: ENEA, 2008), 20–21.

¹⁴ See Benasayag and Meyran, *La tirannia dell'algoritmo*, 34–35.

Referring to the mathematical revolution he triggered, Mandelbrot thus comments on the discontinuity between Euclidean geometry, a geometry of pure and ideal forms, and fractal geometry, which looks at the patterns of irregularity of natural forms:

To appreciate the nature of fractals, it is useful to recall the splendid Galilean manifesto of 1632: “Philosophy is written...in the language of mathematics, and its characters are triangles, circles, and other geometric figures, without which means...it is to wander in vain through a dark labyrinth”. Note that circles, ellipses, and parabolas are almost perfectly smooth forms and that a triangle has very few points where it is irregular. Such forms were my youthful passion, but in nature, they are the exception. When he stated that they are indispensable to science, Galileo was absolutely right. Then, however, they proved insufficient, for the “simple” reason that the world is decidedly rough and very complicated. Nevertheless, the infinite sea of complexity includes two islands of simplicity: one is Euclidean simplicity; the other is relative simplicity in which roughness exists, but it is the same at all scales. The cauliflower is a typical example of a form that does not change if shrunk or enlarged. A glance is enough to notice that it is made of many florets. Now, if we remove one and examine it by itself, we notice that it looks like a small cauliflower. Repeating the operation (soon a magnifying glass will be needed) we find ourselves with an ever smaller cauliflower but identical to the original, aside from size. The cauliflower is an excellent example of an object made of many parts, each of which is the object itself in miniature. Another example of repeated roughness is the cloud. A cloud is made of protrusions upon protrusions upon protrusions similar to miniature clouds. Approaching a cloud, one does not arrive at seeing something smooth, but always the same irregularities at a smaller scale.¹⁵

It is evident, in short, that nature presents itself in a far from ordered, smooth, or ‘straight’ shape: on the contrary, the patterns and structuring forms of nature are rough, irregular, characterized by jaggedness and interruptions that reappear, almost identically, across various levels of size of the individual system, thus revealing the characteristic of self-similarity and homothety of nature. Mandelbrot wrote:

¹⁵ Benoît Mandelbrot, *Gli oggetti frattali: Forma, caso e dimensione*, trans. Roberto Pignoni (Turin: Einaudi, 1987), 277.

In this essay, very diverse natural objects are studied—many of which are quite familiar, such as the Earth, the sky, and the ocean—making use of a wide family of geometric objects considered until now esoteric and unusable, and which I instead propose to demonstrate deserve to be soon integrated into elementary geometry because of the simplicity, diversity, and truly extraordinary scope of their new applications. Although their study pertains to various scientific disciplines, including geomorphology, astronomy, and turbulence theory, the natural objects in question share the characteristic of being of extremely irregular or interrupted form; to study them, I conceived, developed, and widely used a new geometry of nature. The notion guiding them will be designated with one of the two synonymous neologisms “fractal object” and “fractal”, terms I conceived for the needs of this book, referring to the Latin adjective *fractus*, which means “interrupted” or “irregular.”¹⁶

The merit of Benoit Mandelbrot is, therefore, certainly that of not attempting to reduce the natural and complex shapes of natural reality to pure and abstract forms, ideally underlying a pre-constituted order belonging not to reality as such but to a rationalizing tendency of Western culture. Overcoming the attempt of *reductio ad unum*,¹⁷ Mandelbrot, with a holistic and systemic, rather than analytic spirit, observed that there exist continuities of patterns and shapes identifiable in nature. The most famous example provided by Mandelbrot is the jaggedness of the coasts of Great Britain, whose length cannot be measured through attempts at Euclidean rectification. In fact:

Taking a stretch of coastline in a rugged region, we will try to measure its actual length. It is evident that this length is at least equal to the straight-line distance between the ends of our curve section; if the coast were straight, the problem would already be solved; finally, a truly wild coast is extremely sinuous and, consequently, longer than the aforementioned straight-line distance. It can be accounted for in various ways, but in any case, the final length will be so large that it can, without practical inconvenience, be considered infinite. When, later, we want to compare the “contents” of different coasts, we will have no choice but to introduce different forms of a mathematical concept that everyone thought had no concrete applications: the concept of fractal dimension.¹⁸

¹⁶ Mandelbrot, *Gli oggetti frattali*, 7.

¹⁷ See Morin, *La sfida della complessità*, 3.

¹⁸ Mandelbrot, *Gli oggetti frattali*, 21.

And Mandelbrot continues:

The fact is that if the coasts are very irregular, the degrees of irregularity corresponding to the different scales are roughly the same. It is impressive, in fact, to note that if one considers a bay or a peninsula, represented on a map at a scale of 1:100,000, and examines it on a map at a scale of 1:10,000, countless sub-bays and sub-peninsulas are distinguished on their outline. On a map at a scale of 1:1,000, sub-sub-bays and sub-sub-peninsulas appear, and so on. One cannot go on infinitely, but one can go very far, and it will be found that, although the various maps corresponding to successive levels of analysis are very different in their specifics, they nevertheless present the same global character, the same generic features. In other words, one is led to believe that, apart from scale, the same mechanism may have generated both the minute details and the global characteristics of the coasts. This mechanism can be seen as a kind of cascade, or rather as a multi-stage firework, in which each stage generates smaller details than the stage that preceded it. In the case where each piece of coast is, statistically speaking, homothetic to the whole – aside from certain particulars we choose to ignore – it will be said that the coast possesses an internal homothety.¹⁹

If Mandelbrot's formulation remains, in any case, a map suitable to represent the territory, it remains a fact that it is a map, a cognitive and instrumental apparatus, which does not intend to rectify reality in order to grasp it, but rather observes it in its concrete dialectical dimension, which sees a constant movement between order and disorder, negentropy and organization, regularity and irregularity of forms.²⁰

Fractal maps are evidently ecological mappings. The *cosmopoietic* action of Mandelbrot results from a direct interrogation of Nature, and not from the *a priori* application of ideal forms and structures. It represents a science in direct dialogue with the Nature it observes.

Moreover, Mandelbrot's *cosmopoietic-geometric* models were immediately, and successfully, applied to a wide range of natural systems that Euclidean geometry could not capture in their complex characteristics and which, for this reason, ended up reducing and mutilating. From clouds to the plant kingdom to human organic physiology, Mandelbrot's geometric universe revealed, on a mathematical level, a reality that is rich, abundant, and above all concrete. James Gleick revealed in this regard that

¹⁹ Mandelbrot, *Gli oggetti frattali*, 26–27.

²⁰ Giuseppe Giordano, *Complessità: Interazioni e diramazioni* (Messina: Armando Siciliano, 2021), 263.

blood vessels, from aorta to capillaries, form another kind of continuum. They branch and divide and branch again until they become so narrow that blood cells are forced to slide through single file. The nature of their branching is fractal. Their structure resembles one of the monstrous imaginary objects conceived by Mandelbrot's turn-of-the-century mathematicians. As a matter of physiological necessity, blood vessels must perform a bit of dimensional magic. Just as the Koch curve, for example, squeezes a line of infinite length into a small area, the circulatory system must squeeze a huge surface area into a limited volume. In terms of the body's resources, blood is expensive and space is at a premium. The fractal structure nature has devised works so efficiently that, in most tissue, no cell is ever more than three or four cells away from a blood vessel. Yet the vessels and blood take up little space, no more than about five percent of the body.²¹

From Biological and Ecosystemic Geometry to Bioinspiration

Moving towards an ecological civilization requires, even before political and economic maneuvers, an authentic epistemological reflection on the production of models and the organization of knowledge. An authentically ecological civilization, in fact, cannot base its hopes exclusively on technical tools and economic models. Rather, it implies, first and foremost, the awareness that producing models of reality entails, more or less indirectly, intervening in reality and transforming it.

If, as Imre Toth asserts, geometric modeling constitutes the production of internally coherent universes, and if, as Mandelbrot has done, such *cosmopoiesis* can occur within a relationship of observation of natural patterns, contemporary biological sciences are increasingly interested in identifying the specific configurations of forms in nature and living beings.

Noteworthy from this perspective is the work of the Italian plant neurobiologist Stefano Mancuso, whose decades-long research has largely focused on studying the forms through which plant organisms structure their organization. The ideas of plant neurobiology and plant psychology, whose most prominent exponents, in addition to Stefano Mancuso, include Monica Gagliano and Paco Calvo, contribute to overcoming the Aristotelian idea of the vegetative soul, hierarchically inferior to sensitive and intellectual faculties, and connect, to a certain extent, to the avant-garde Goethean botany.

²¹ James Gleick, *Chaos: Making a New Science* (New York: Viking, 1987), 108.

Specifically, what Mancuso has shown is that the internal geometry of the plant world is configured as a modular and reticular architecture, which helps to distribute cognitive faculties throughout the entire plant body. According to Mancuso the plant's

bodies are constructed on a modular design, in which each part is important but none is truly indispensable. This structure represents a fundamental advantage vis-à-vis the animal kingdom, especially considering the number of herbivores on the planet and the impossibility of escaping their voracious appetites.²²

Plant forms, in short, repeat themselves, revealing a certain internal homothety and fractality:

It's no accident that we continually refer to ourselves as individuals: the term comes from the Latin *in* (which here means "not") and *dividuus* ("divisible"). Our body really is indivisible: if we're cut in half, the two halves can't live separately; they die. But if we cut a plant in half, the two parts can still live independently, for the simple reason that a plant isn't an individual. In fact, the right way to think about a tree, a cactus, or a shrub is not to compare it to a human being or any other animal, but to picture it as a colony. A tree is much more like a colony of bees or ants than an individual animal.²³

The revolutionary element in Mancuso's research is undoubtedly the correlation between the geometric shapes that structure the plant world and the cognitive and mental faculties of plants. Observing the internal geometry of plants reveals, in this sense, their cognitive capacities, which exhibit an intelligence profoundly different from that of animals and humans:

A plant doesn't have individual organs such as a brain, a heart, lungs, one or more stomachs because, if it did, their injury or removal...would jeopardize the entire organism's survival. In plants, no single part is essential; and, in fact, the structure is mostly redundant, made up of repeated modules that interact with one another and that in certain conditions can even survive autonomously.²⁴

²² Stefano Mancuso and Alessandro Viola, *Brilliant Green: The Surprising History and Science of Plant Intelligence*, trans. Joan Benham (Washington, DC: Island Press, 2015), 34.

²³ Mancuso and Viola, *Brilliant Green*, 36.

²⁴ Mancuso and Viola, *Brilliant Green*, 125.

What Stefano Mancuso proposes is an internal geometry of nature: the plant organism, in this sense, articulates itself through the development of forms and patterns that the scientist observes in their characteristics. Observing these geometric forms, then, allows the study of plant cognitive systems. Geometry, in its etymological sense as the study and measurement of earth, also enables the study of the mind itself. The epistemological and cosmopoietic act of world creation is here profoundly innovative: in a direct and continuous dialogue with nature, the scientist attempts to bring organization to knowledge. This order, however, is not Cartesian-fixed but processual, dialogical, and evolving as the Reality it represents.

Thus, an ecological civilization capable of observing the relational and processual shapes of nature can allow itself to be inspired by organic nature to reorganize its knowledge systems, as well as economic and social structures.

Stefano Mancuso himself has frequently spoken of *Bioinspiration*: that is, of taking inspiration from the reticular geometry of plants to reorganize even our digital and urban ecosystems.

As Mancuso has clarified,

the plant kingdom may offer numerous innovative solutions to many of our most common technological problems. *Bioinspiration*, or finding impetus in the living world for devising new technological applications, originated centuries ago (think, for example, of Leonardo's studies of flying machines, inspired by bird flight). Our eyes have long been fixed on the animal kingdom (the realm closest to us) and have only recently begun to discern the treasure hidden in the plant realm, where one day we may find—among other things—the cure for many of humanity's most serious illnesses, new forms of clean energy, opportunities for innovation in man-made materials, and incalculable unexplored possibilities in the chemical and biological world.²⁵

Indeed, plant organisms, due to their repeated and fractal constitution, are in constant communication, operating within networks that allow the passage of chemical signals affecting the entire network, mostly for homeostatic purposes.

A detailed description of plant communication networks by Mancuso reads:

²⁵ Mancuso and Viola, *Brilliant Green*, 157–168.

Millions of root tips working in a network so that the destruction or predation even of an important part doesn't compromise the network's survival. By itself, one root tip doesn't have great calculating capacity, but together with the other root tips it is capable of extraordinary feats, just like an ant, which cannot map out strategies on its own, but by working with other ants creates a society that's among the most complex and structured in nature....The root system is first of all a physical network in which the roots are connected to each other anatomically. And yet, this connection doesn't seem at all to be the most important. In fact, the signals enabling each root to communicate with the others probably don't travel inside the plant.²⁶

It is no coincidence that Mancuso, in reference to the communicative organizations of plants, has discussed the idea of *green democracy*. The expression 'green democracy' denotes the configuration, observable in every plant ecosystem, of relational models closer to a network, where each part contributes to the development of the whole, rather than a hierarchical-pyramidal structure, which implies a command center and one or more peripheries that execute orders. Indeed, in a technological context in which the Internet often becomes an instrument of control and influence, plant communication networks can provide a model from which to rethink intersubjective and intercultural communication networks, which should facilitate, among other things, the possibility of knowledge dissemination across continents, democratically available to all, supporting a constant circulation of ideas and projects beyond national and geographic borders, and, as even American economist Jeremy Rifkin has argued, facilitating empathy and solidarity among cultures.²⁷

The challenge, therefore, is to imagine digital ecosystems that are free, genuinely reticular, and interconnected, capable of promoting an authentic democratic practice that can lead to the reformulation of political and social management of the Internet, which is currently often expressed in terms of control, surveillance, and mass manipulation. By contrast, as the outcome of a truly ecosystemic practice applied to digital spaces, a green network originates from ecological awareness, according to which the free activity of each living and social singularity contributes to the richness and complexity of the environments in which it develops and from which it is recursively produced, within a

²⁶ Mancuso and Viola, *Brilliant Green*, 142–143.

²⁷ See Jeremy Rifkin, *The Empathetic Civilization: The Race to Global Consciousness in a World in Crisis* (New York: TarcherPerigee, 2009).

systemic-reticular relationship that values both the individual and communities—in the broadest sense of the term.

We have thus outlined a four-step pathway. After clarifying how the maps and representations of the world constructed by a civilization can be more or less ecological, it was shown that Western civilization is gradually making its geometric mappings of the world increasingly ecological. First, from Euclidean geometry, which reduced the complex and abundant forms of nature to pure ideal forms, there has been a transition to non-Euclidean geometries and Imre Toth's reflections. Geometry is not the ontological language of the world but, conversely, an activity of the human mind that implies cosmopoiesis, the construction of infinite possible worlds. From this perspective, the fractal world is an exceptional case. Mandelbrot, for the first time in the history of Western mathematics, marks the end of the a priori application of models to reality, in order to observe the intrinsic patterns and forms of nature itself. Finally, following this line, we now witness a tendency, in biological avant-gardes, not only to observe the fractal forms of nature but also to relate natural geometry to the cognitive faculties of ecosystems, as shown by the studies of Stefano Mancuso. In this case, the geometry of nature becomes the reflection of the mind of ecosystems and, above all, can become a source of bio-inspiration: the possibility of rethinking social, urban, and digital systems in light of the organization of natural ecosystems.

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Ecological Civilization and Multipolarity: Ecocivilization as Communities of Communities

Arran Gare

Abstract: The collapse of the unipolar world dominated by the USA has opened the way to rethinking geopolitics in the quest for ecological civilization. The argument I will present here is that multipolarity paves the way for the creation of a global ecological civilization, and should be seen as integral to it. The unipolar world, imposing exploitative markets throughout the world by force, has been locking humanity on the path to global ecological destruction. The multipolar world opens up new possibilities. However, this does not mean that the collapse of the monopolar world will guarantee success in the quest for this global ecological civilization. It is necessary to work out the principles on which it could be based, and how these principles could be implemented. Here I will argue that the notion of ‘communities of communities’ combined with the notion of transculturalism provides a basis for these principles and for mobilizing people to realise them in practice.

Keywords: *ecological civilization; multipolarity; communities of communities; transculturalism*

Introduction

The collapse of the Soviet Union in 1991 amounted to the triumph of the capitalist world order in which the USA and its ruling class was the dominant world hegemon, although the US ruling class was evolving into a global class. This class was capturing control of state institutions throughout the world and in alliance with other oligarchs, was using them to massively concentrate wealth and power. Their triumph was associated with

the triumph of neoliberal globalism, committed to defining all relations between people as market relations, although the imposition of markets was associated with increasingly oppressive institutions of social control, nationally and internationally. The global ruling class, largely based in transnational business corporations, along with transnational institutions supporting them—the IMF, the World Bank, the WTO, and institutions of trade based on using the US dollar as an international currency, among others, created what amounts to a global police state characterized by the unprecedented development of technologies of war, social control, surveillance and mind control.¹ While the base for this global class has been in the USA where they largely control the institutions of the state, its members have no commitment to their own countries as nations. As the British Prime Minister Margaret Thatcher put it, there are only individuals, families and the global market, and she also claimed there is no alternative to this neoliberal order. Despite this denial of social institutions other than families and markets, USA now accounts for almost half the world's expenditure on armaments designed to keep in place the 'rule-based order', and it is through this military industrial and intelligence complex that the global class imposes and maintains markets and their access to the world's resources and to cheap labour.

The legitimacy of this 'rule-based' world-order has been to some extent undermined by massive concentrations of wealth, dismantling the welfare state in affluent countries, by the hypocrisy of USA in how it ignores the rules it claims to be upholding, and by undermining the economic and political security of vast numbers of people world-wide, including people living in USA and other supposedly affluent countries allied with it. The biggest challenge to this world-order, however, is the global ecological crisis. While efforts have been made by some members of this ruling class (notably, the Koch brothers) to convince people that there is no global warming and that there is no ecological crisis, most members of this ruling class recognize the reality of the crisis. The ecological crisis has engendered social movements calling for radical economic, social, political and cultural changes to deal with it, and as such, these movements have become the greatest challenge to the rule of this class.² The most enlightened members of the ruling class, to counter this challenge, have embraced the notion of 'sustainable development' as the solution, but argue that this will be best achieved by freeing markets to generate the required

¹ See David C. Korten, *When Corporations Rule the World*, 2nd ed. (San Francisco: Berrett-Koehler, 2001); Leslie Sklair, *The Transnational Capitalist Class* (Oxford: Blackwell, 2001); William I. Robinson, *Global Capitalism and the Crisis of Humanity* (New York: Cambridge University Press, 2014); William I. Robinson, *The Global Police State* (London: Pluto Press, 2020).

² Sklair, *Transnational Capitalist Class*, 206.

entrepreneurial activity to develop alternative, more efficient, environmentally sustainable technologies. All that is necessary is to liberate entrepreneurs to pursue profits. However, as Joel Kovel pointed out a quarter of a century ago in *The Enemy of Nature*, even when ruling elites in capitalist societies recognized the ecological crisis and attempted to deal with it, ecological destruction accelerated, and it has continued to worsen ever since.³ Despite efforts to cut greenhouse gas emissions, each year new records are set for these emissions. Ecosystems continue to be destroyed and species are being driven to extinction at increasing rates.

The response of these ruling elites to this failure has been to intensify efforts to control subordinate classes and countries, corrupting institutions of democracy in USA and other core zones of the world economy, but most importantly, by effecting regime changes throughout the world either through engineering coups or through direct military interventions, focussing in particular on controlling countries with fossil fuel reserves. According to a report by the Congressional Research Service, a US government institution that compiles information on behalf of Congress, there have been at least 251 military interventions between 1991 and 2022, many of which had regime change as an implicit or explicit objective.⁴ Over a quarter of all U.S. military interventions in history occurred after the Cold War, reflecting the increase in intervention frequency during this period. The range of efforts to subvert and destroy governments or impose comprador elites in the name of ‘freedom and democracy’ have been well documented by William Blum in *Rogue State*⁵ and *America’s Deadliest Export: Democracy*.⁶ The first chapter of this second book described the coup in Ukraine in 2014, providing evidence for its having been organized outside Ukraine. Documentation of such subversion of governments has continued through the work of Lindsey O’Rourke.⁷

It is in this context that the strategies of the new ruling class have become more transparent, and also, why they have failed. With the challenge of communism apparently having been eliminated with the collapse of the Soviet Union, the global ruling class have used their power to control people more effectively, including manufacturing consent for

³ Joel Kovel, *The Enemy of Nature: The End of Capitalism or the End of the World?*, 2nd ed. (London: Zed Books, 2007), 13ff.

⁴ Ben Norton, “US Launched 251 Military Interventions since 1991, and 469 since 1798,” *Geopolitical Economy*, September 13, 2022, <https://geopoliticaconomy.com/2022/09/13/us-251-military-interventions-1991/>.

⁵ William Blum, *Rogue State: A Guide to the World’s Only Superpower* (London: Zed Books, 2002).

⁶ William Blum, *America’s Deadliest Export: Democracy* (London: Zed Books, 2014).

⁷ Lindsey A. O’Rourke, *Covert Regime Change: America’s Secret Cold War* (Ithaca, NY: Cornell University Press, 2021).

their policies by concentrating media ownership, privatising public institutions, controlling the media, including the internet, and spending massively on public relations. As Bernard Stiegler has shown, controlling what people take to be reality is now based on technological control of people's thinking.⁸ Europe and USA have been engaging in what the German cultural theorist, Jonas Tögel, argued is cognitive warfare, militarizing societies by claiming threats to them that do not exist.⁹ Promoting what they claim to be freedom and democracy, rulers are removing all the constraints on markets imposed after the Great Depression and WWII, imposing markets on all facets of life. People have been depoliticised by undermining the economic security required for them to fulfil their functions as citizens, by sabotaging education systems and defining all relations between people as economic relations.¹⁰

Neoliberal globalism has unleashed the logic of markets as analysed by Karl Marx, extending commodification both extensively, to all corners of the globe, and intensively, commodifying more and more facets of life. In place of workers and citizens, people in affluent countries, if they have not been excluded from the economy altogether, have been redefined as consumers rather than citizens or workers. These depoliticised masses in the core zones of the world economy have benefitted from the exploitation of workers in and the resources of developing countries and their peripheries. This is neoliberalism as defended by Ludwig von Mises, Friedrich von Hayek and Milton Friedman and first implemented by Augusto Pinochet in Chile, Margaret Thatcher in Britain, Ronald Regan in USA, and then almost universally, including by purportedly left-wing governments.¹¹ Unconstrained capitalism inevitably engenders crises of capital accumulation, or profitability. And as Raj Patel and Jason Moore have shown, the main concern of the capitalist ruling class from the beginning has been to deal with economic problems, most importantly, falling profits, by reducing the costs of inputs.¹² Neoliberal globalism has

⁸ Christina Howells and Gerald Moore, eds., *Stiegler and Technics* (Edinburgh: Edinburgh University Press, 2013).

⁹ Jonas Tögel, *Kognitive Kriegsführung: Neueste Manipulationstechniken als Waffengattung der NATO* (Frankfurt: Westend Verlag, 2023).

¹⁰ See Wang Hui, "Depoliticizing Politics, from East to West," *New Left Review* 41 (September–October 2006): 29–45; Ingrid S. Straume and J. F. Humphrey, eds., *Depoliticization: The Political Imagination of Global Capitalism* (Malmö: NSU Press, 2011).

¹¹ Michael Hudson, *Global Fracture: The New International Economic Order*, 2nd ed. (London: Pluto Press, 2005), x.

¹² Raj Patel and Jason W. Moore, *A History of the World in Seven Cheap Things: A Guide to Capitalism, Nature, and the Future of the Planet* (Carlton, VIC: Black Inc., 2018).

intensified this logic, and from the 1970s onwards has been focussed on reducing costs of labour and natural resources, particularly oil and gas.

There are no more frontiers to cross to achieve this, however, and the quest to cheapen inputs by undermining the power of working people and subjugating other countries to access their resources has undermined not only US power but the current capitalist world-system, along with the global ecosystem. As Austro-Marxist Karl Polanyi, who defended the re-embedding of markets into communities associated with the rise of social democracy observed, “the idea of a self-adjusting market implied a stark utopia. Such an institution could not exist for any length of time without annihilating the human and natural substance of society; it would have physically destroyed man and transformed his surroundings into a wilderness.”¹³ This is what is happening with the defeat of social democracy from the 1970s onwards. Eco-Marxists have further advanced research on the destructive logic of markets, showing how Marx himself in his notebooks had predicted much of what has taken place in recent years.¹⁴ Now, the monopolar world is beginning to disintegrate and is facing the challenge of an organized multipolar world.

The Disintegration of the Monopolar World

The disintegration of the monopolar world amounts to the failure of the Wolfowicz Doctrine, formulated in 1992, that the USA should remain the sole superpower, maintaining dominance by preventing the emergence of any rival power and ensuring unquestioned U.S. military superiority throughout the world. The Norwegian professor of peace studies, Johan Galtung, who had predicted nine and a half years before it happened that the Soviet Union would collapse in ten years, predicted in 2000 that the US empire would collapse in twenty-five years. In his book, *The Fall of the US Empire – And Then What?*, he summed up the reasons for this: “The cause of the decline and fall of western imperialism is western imperialism itself, or, in other words, its ever-expanding or at least never contracting cosmology.”¹⁵ The triumph of being the sole superpower corroded the basis for this power, both within the United States and globally.

Within the United States there was a massive transfer of wealth from the poor to the wealthy. Between 1989 and 2018, the top 1% of Americans increased their wealth by \$21 trillion, from \$8.4 trillion to \$29.5 trillion, while the bottom 50% lost \$900 billion, from

¹³ Karl Polanyi, *The Great Transformation* (Boston: Beacon Press, 1957), 3.

¹⁴ Kohei Saito, *Karl Marx's Ecosocialism: Capitalism, Nature, and the Unfinished Critique of Political Economy* (New Delhi: Dev, 2018).

¹⁵ Johan Galtung, *The Fall of the US Empire—and Then What?* (Transcend University Press, 2009), 183.

owning \$0.7 trillion to being indebted by \$0.2 trillion. Their life expectancy has been reduced, and less well nourished, they are shorter.¹⁶ The wealthy have used their wealth to further consolidate their power, taking control of both major political parties, most importantly, the Democratic Party, while undermining the economic security of the rest of the nation, which is a condition for people to participate effectively in politics. Much of this was achieved through transnational corporations outsourcing production to developing countries. Workers there were paid a pittance, often living in highly polluted environments, with vast profits going to these corporations. In the process, the USA was deindustrialized, and most people forgot how to organize and produce goods, and their capacity to develop innovative technologies or develop new ways of thinking declined. Economic activity, apart from the military-industrial complex, focussed on the 'FIRE' sector of the economy—finance, insurance and real estate, generally transferring wealth from poorer to wealthier people. A class of idle poor was created, equivalent to the plebeians of the Roman Empire. Peter Turchin, applying concepts developed in theoretical biology to human history, has shown that such wealth pumps, pumping wealth from the poor to the wealthy, combined with overproduction of elites, inevitably results in political disintegration and societal decline.¹⁷

At the same time, people in developing countries have learnt how to manufacture the most technologically advanced products and further develop the technologies for this. China is the obvious example, but India, Brazil and other countries have followed the same path. The Russian Federation, which appeared to be deindustrializing under Yeltsin, changed direction, reindustrialized and developed a formidable armaments industry. China did not just accept its role in providing cheap labour to transnational corporations, but began to challenge the technological supremacy of the USA.

The ambition of the US government has been to move on from destroying the Soviet Union to destroying the Russian Federation. This ambition was articulated by Dick Cheney starting in the 1990s when he was Secretary of Defence under George Bush Snr and pursued by him more aggressively as Vice-President to George Bush Jr., particularly after France, Germany and Russia united to condemn the invasion of Iraq in 2003. This goal was then pursued by leaders of the Democratic Party, but came up against a resurgent much more powerful Russia than had been anticipated. NATO was successful in orchestrating the overthrow of the pro-Russian Ukrainian government in 2014 and then,

¹⁶ Peter Turchin, *End Times: Elites, Counter-Elites and the Path of Political Disintegration* (New York: Penguin, 2023), 68ff.

¹⁷ Turchin, *End Times*.

abrogating the Minsk agreements, training, arming and integrating Ukraine's armed forces into the NATO military machine, then called for NATO to incorporate Ukraine and install nuclear missiles directed at Russia on Russia's border.¹⁸ Russia was lured into a military conflict in 2022 by Ukraine attacking the Donbass Republics which had rebelled and sought independence when their elected government had been overthrown in 2014.¹⁹ Russia responded, but did not collapse as anticipated. It appears that Russia will not only succeed in freeing the four Eastern oblasts to join Russia and securing Crimea, but has been able to play a major role in organizing the BRICS countries into a multipolar challenge to the unipolar world, aligned with China, bypassing US financial institutions and US control of international trade, and reviving the United Nations and its original charter. The Global South have for the most part aligned themselves with Russia and China in this challenge.

The outcome of this has been that USA under President Trump has abandoned any pretence of working within the framework of international law, invading Venezuela to take over its oil reserves, threatening to do the same thing with Greenland and invading Iran, in the wake of Israel's blatant disregard for international law and genocide of Palestinians, supported by USA.

In the Prologue to *The Fall of the US Empire*, Galtung recounted his father's prediction in 1941 that Hitler would fail: "Because he does not know when and how to stop."²⁰ This is the core of Galtung's argument that the US empire would fail. And I am suggesting, that with this failure ends the era of modernity, that is, the civilization that originated in West Europe in the Fifteenth Century with the imperialism of Portugal and Spain, financially backed by Northern Italian and Flemish bankers, leading to the conquest of the Americas and subsequent domination by Europeans of over 80% of land surface area of the world by 1914.

Imperialism, Capitalism, Liberalism and the Radical Enlightenment

Before going on to consider what can replace this civilization, it is necessary to characterize it. Its proponents purport to be upholding freedom and democracy, upholding the tradition of liberalism. Its culture originated with the Western form of Judeo-Christian religion integrated with neo-Platonic philosophy denying any value to

¹⁸ See Glenn Diesen, *The Ukraine War & the Eurasian World Order* (Atlanta: Clarity Press, 2024), chaps 7-8; Benjamin Abelow, *How the West Brought War to Ukraine* (Great Barrington, MA: Silas Press, 2022), 61.

¹⁹ William I. Robinson, *Can Global Capitalism Endure?* (Atlanta: Clarity Press, 2022), 91.

²⁰ Johan Galtung, *The Fall of the US Empire—and Then What?* (Transcend University Press, 2009), 7.

nature or people other than Christians.²¹ As noted, modernity began with the imperialism of Portugal and Spain conquering the New World, and continued with the imperialism of the Dutch, the English and the French, and later, the Germans. Patel and Moore have shown how it was this imperialism that inaugurated the birth of capitalism in which the end of economic enterprises became the quest to accumulate more capital.²² Supporting this, European culture was reformed in the Seventeenth Century scientific revolution, promoting Cartesian dualism, Newtonian atomism, mechanistic materialism, and an instrumentalist notion of reason.²³ Ethical and political philosophy were reformulated on the assumption that people are egoists and society is based on a contract between these egoists. John Locke, aligned with Newton and building on the work of Hobbes, was its most influential proponent. He argued that it is the acquisition and protection of property that is central to social and political life. The end of life was reconceived, from cultivating virtues to maximising pleasure and minimizing pain and accumulating wealth, with freedom redefined as liberty to pursue these ends without interference from others, provided that life and property of these others and contracts with them are respected. This is the original doctrine of liberalism, incorporated into economic theory and defended in the Eighteenth Century by the philosophers aligning themselves with Newton and Locke, characterized by Jonathan Israel as the “Moderate” Enlightenment.²⁴ It was this liberalism that justified the imposition of markets to define the relations between people, with markets expanding to encompass the entire world. The fusion of the new science of Descartes and Newton with technology led to the industrial revolution, followed by a sequence of technological revolutions, all driven by the quest for profits and capital accumulation through technological mastery of nature and people, and to new, more subtle forms of imperialism. These are the ideas that have been revived and reformulated with neoliberalism, based on privileging the concept of information and conceiving living beings as information processing cyborgs.

It should be noted that originally, liberalism was opposed to democracy. Locke defended rule by people with property, that is, oligarchy. Such liberalism was characterized by C.B. McPherson as ‘possessive individualism’, and Locke defended the right of these oligarchs to integrate the poor, massively increased through the enclosure of the commons, into the commercial system by forcing them to work under the most brutal conditions.

²¹ Arran Gare, *Nililism Inc.: Environmental Destruction and the Metaphysics of Sustainability* (Como, NSW: Eco-Logical Press, 1995), chap. 4.

²² Patel and Moore, *History of the World in Seven Cheap Things*.

²³ Gare, *Nililism Inc.*, chap. 5.

²⁴ Jonathan I. Israel, *The Enlightenment That Failed* (Oxford: Oxford University Press, 2019), 4.

Furthermore, Locke defended imperialism, slavery and the genocide of indigenous people in the colonies. Domenico Losurdo in his study *Liberalism* has shown that this defence of imperialism, slavery and genocide was not an aberration but central to the notion of and the condition for liberty as most liberals defended it, with even critics of the worst aspects of slavery, such as Montesquieu and de Tocqueville, still defending some slavery.²⁵ In the Nineteenth and Twentieth Centuries such values were further defended through Darwinism and Social Darwinism, with Naziism in Germany being far from an aberration.²⁶ Britain, Germany and USA concurred regarding their race as superior, as the elect people entitled by virtue of their power to subjugate others, as the Ancient Israelites believed they were entitled to exterminate the indigenous populations of the promised land. Upholding this tradition, neoliberals by redefining freedom and politics through the categories of economics, amounted to the destruction of democracy and to the revival of Social Darwinism in which might makes right. The current behaviour of Israel in carrying out genocide of Palestinians and USA in invading Venezuela and planning to invade Greenland illustrates the continuation of these values.

However, there were influential counter-traditions opposed to mainstream thought. After all, Jesus belonged to a tradition in Judaism that rejected the exclusivity of the Israelites and their pre-occupation with money, promoting instead universal love, including of one's enemies, and some Christians have been influenced by these values. Greek philosophy upheld ideas about nature and humans very different from those that came to dominate in the Seventeenth Century. Such ideas were revived in the Renaissance, particularly the Florentine Renaissance, in which there was a rebirth of ideas from Republican Rome and Ancient Greece, giving rise to education in the humanities. This recovered the Ancient Greek notion of education as *paideia*, developing people's humanity. The Renaissance reached its fullest development in the natural philosophy of the Nature Enthusiasts, most notably, with Giordano Bruno who argued for an infinite, self-organizing universe, and with the historical thinking of Giambattista Vico calling for imagination to understand people from the past with very different ways of thinking. It was these renaissance thinkers who were the target of philosophers in the Seventeenth Century and their ideas were suppressed; but they were revived in the Eighteenth and Nineteenth Century as a reaction to mechanistic thought and all its implications in what

²⁵ Domenico Losurdo, *Liberalism* (London: Verso, 2006).

²⁶ Losurdo, *Liberalism*, 338.

has come to be known as the ‘Radical Enlightenment’.²⁷ While Jean-Jacques Rousseau was pivotal in this revival, it flourished most vigorously in Germany through the philosophy of Immanuel Kant and his students J.G Herder and J.G Fichte, and then through Hegel, Schelling, Marx, Dilthey and those they inspired. It was the tradition of the Radical Enlightenment, revealing the limitations of reductionist thinking and reviving the notion of nature as self-organizing and conceiving humans as essentially social, participating creatively or destructively in nature, that drove the quest for genuine democracy as people governing themselves.

Central to this tradition was Herder’s notion of culture, rejecting both Cartesian dualism and the view of humans as nothing but complex machines, and calling for an appreciation of diverse cultures and their associated communities. The notion of culture implies ‘communitarianism’ in opposition to atomic individualism, seeing individuals as only emerging as self-conscious agents through their culture, even if as individuals they then develop the capacity to question and transform their own culture. It is by virtue of culture, which includes language, that humans are capable of far more complex forms of cooperation and creativity (and destruction) than any other animal is capable of. It is by virtue of culture that humans develop or fail to develop loyalty to their communities. This notion of culture also implies that our current culture, including its beliefs and deep assumptions about the nature of reality, its forms of art, its sciences, technologies, buildings, its social, economic and political institutions, are the creations of people and can be changed, developed or transformed.

Marx’s critique of political economy is an exemplary achievement of cultural critique, showing how what is normally taken for granted, that all sorts of processes and potentialities, including human labour power, can be objectified and treated as commodities with value nothing but exchange value, can be questioned. Political economy is shown to be the product of a particular culture, with the categories of economics functioning as the forms of being or existence in the social order based on this culture. The discourse of political economy, taking for granted and reflecting social life mediated by such categories, legitimates this social order, but in doing so, presents a distorted, one-sided view of reality. Most importantly, what is presented as freedom because people are free to buy and sell what they like and to freely make contracts, is really a form of slavery in which most people, deprived of access to the means of production, are made dependent upon

²⁷ See Margaret C. Jacob, *The Radical Enlightenment: Pantheists, Freemasons and Republicans*, 2nd ed. (The Temple Publishers, 2003); Arran Gare, *The Philosophical Foundations of Ecological Civilization: A Manifesto for the Future* (London: Routledge, 2016), 157ff.

people who can harm them. Marx revealed further consequences of this culture that people within it are blind to, consequences which are increasingly oppressive, enslaving even the ruling class to the logic of the market, and as eco-Marxists have pointed out, this logic is destroying the environmental conditions for humanity. Most importantly, this work revealed that the categories of economics are the categories of a particular culture, the product of human creativity. As such, this culture can be transformed. We do not have to continue organizing life around these categories. We can create a social and economic order based on more defensible categories that acknowledge that humans are essentially creative, social beings participating in processes of nature. Defending this requires the replacement of the scientific materialist or mechanist world-view by a relational/process world-view.

Upholding the notion of culture also entails the possibility that people in different cultures can criticise and learn from each other. In opposition to Social Darwinism in which progress was seen to involve subjugating and eliminating more primitive people and defeating rivals, the Radical Enlightenment, rejecting the Eurocentric view of history, called for appreciation of diverse people, including people who had been designated primitive. Such people were strongly defended by cultural anthropologists. Recognizing culture in this way involves taking responsibility for one's own culture and the communities formed by it, including its institutions. It calls for the education of people to develop their full potential to participate in political and cultural life and to take responsibility for the future of their communities and its members. This was the mission of the humanities. Major advances were made in this regard, subordinating markets to communities, extending the franchise for elections and setting up the public institutions of the welfare state to control markets. Efforts were made to overcome imperialism and racism and create a community of humanity, setting up the League of Nations and more importantly, the United Nations in which Franklin Roosevelt and his New Deal supporters played a major role. Some of the impetus for this came from Marxists, including revisionist Marxists, but they were not the only agents for these changes. John Maynard Keynes, influenced by the British social liberals, identified the illusions of freedom associated with markets and also argued that economic activity should be subordinated to higher ends. After WWII Keynes provided plans for an international financial system with an international currency that would have avoided the growth of indebtedness between countries, unfortunately rejected by Americans. Orthodox Marxists, conceiving of the superstructure as a mere instrument serving the development of the forces of production and portraying history as the history of class warfare, are often closer to the mainstream of

modernity than the Radical Enlightenment, or to Marx himself, who was a major figure in the Radical Enlightenment.

The success of the Radical Enlightenment in promoting democracy led people who identified themselves as liberals to embrace the term ‘democracy’. In some cases, such as John Stuart Mill, British Idealists such as T.H. Green and American pragmatists such as John Dewey, this was genuine, and they paved the way for the development of social democracy. However, these were philosophers influenced by the Radical Enlightenment and have been characterized as social liberals or liberal socialists. Oligarchs promoting liberalism following the tradition deriving from Locke, were hostile to the achievements of the social liberals. They embraced ‘democracy’ as a slogan to use against people organizing and fighting for social justice, using this to protect the property rights of oligarchs and corporations and to impose further markets, creating the illusion of democracy while effectively enslaving people and manufacturing consent for this. At an international level, this subversion of democracy has been most blatantly operative since the death of Franklin Roosevelt, with the US effecting regime changes throughout the world to facilitate exploitation of resources and people, claiming to be defending freedom and democracy against communism while installing comprador elites to subjugate the rest of the population.²⁸ With neoliberalism, freedom has been identified with market mediated action, the freedom to shop, using this to dismantle or cripple state institutions in the core zones of the world economy, institutions designed to control markets and essential for the functioning of genuine democracy.

Multipolarity in Opposition to Neoliberal Globalism and Imperialism

If the monopolar world, promoting neoliberalism and practicing imperialism in the name of freedom and democracy, is disintegrating and being replaced by a multipolar world, what does multipolarity mean? Its proponents see it as liberation from enslavement to the US military-industrial complex, subordinating humanity to the US based financial system and transnational corporations which have been taking over the resources of entire countries. Multipolarity is being promoted by countries struggling to free themselves from domination in the current world order, but where will this lead? It could mean the growth of fascism with humanity descending into a world of constant warfare between centres of power. To avoid descending into chaos, possibly ending in a nuclear war, it is necessary to put forward a realistic vision of what kind of order could be created. There are several

²⁸ Blum, *Rogue State*; Blum, *America's Deadliest Export*.

contenders for this, and before suggesting a vision integrating multipolarity with the vision of ecological civilization, these need to be considered.

One of the most forceful and influential proponents of multipolarity is Jeffrey Sachs, a Professor of Economics, a public policy analyst and an advisor to governments, and director of the Center for Sustainable Development at Columbia University. He identifies himself as a social democrat and an environmentalist. His vision is really a development of the ideas of the New Dealers from the 1930s and of Franklin Roosevelt's vision of a peaceful world order achieved through international relations maintained through the United Nations based on advancing international law. He has condemned USA's foreign policy since then (although President Kennedy was attempting to revive Roosevelt's vision) characterized by repeated breaches of the charter of the United Nations by interfering with the governance of other nations, fostering conflict and engineering regime changes while ignoring rulings by the United Nations. He argues that it is necessary to recognize a number of power centres in the world which can provide the force necessary to uphold a peaceful world-order. To avoid conflict between them, these centres should be separated by neutral states that should not allow themselves to be used by more distant centres of power to threaten militarily their neighbouring centres, as Cuba did when it allowed the Soviet Union to place nuclear missiles aimed at the United States on its territory (in response to Turkey placing US nuclear missiles on its territory, threatening the Soviet Union, and the US threatening to invade Cuba) and which Zelensky as President of Ukraine called for prior to the Ukrainian military conflict.

This is a vision influenced by the ideas of the Radical Enlightenment, although ignoring crucial aspects of it. It advances Roosevelt's vision of a future based on recognizing the sovereignty of nation-states with relations constrained by international law as the foundation of world-order, a vision originally proposed by Schelling at the beginning of the Nineteenth Century. This is basically in accord with the idea of nation-states that emerged from the Treaty of Westphalen of 1648 in which Switzerland and the Dutch Republic were recognized as nation states, recognizing their freedom from the Austrian and Spanish Habsburgs. However, Sachs has not fully developed this vision of the future, nor considered which nation or nation or nations would be centres of power in South America or Africa, for instance, or considered the role of culture in nations, as argued for by Rousseau, Herder and Fichte. He has not engaged with the question of how freedom of individuals should be characterized in the context of their membership of nations. He does not consider how nations maintain their coherence as nations, or how to deal with the claimed rights of people to organize into comprador elites to betray their national

communities, or the claimed rights of countries to choose who to align themselves with and what defence arrangements to make with other countries, or the claimed right of the majority of a country to suppress and even commit genocide of minorities, although Sachs and those aligned with him are clearly opposed to neoliberalism on these issues. Nor does he examine the base of power by nations in their control of natural resources, most importantly, usable energy, or how the struggle for access to and control of these resources underpins most of the conflicts between nations. That is, he does not situate his policy proposals in a broader philosophy of history defining the nature of humans and their potentials and liabilities and their place within nature.

A more radical proponent of multipolarity is the Russian philosopher, Alexander Dugin, expounded in his book *The Theory of a Multipolar World*.²⁹ Arguing for what he claims to be a scientific theory of multipolarity, Dugin takes his point of departure from the work of Samuel Huntington and his book *The Clash of Civilizations and the Remaking of the World Order*.³⁰ Dugin focusses on the notion of civilization and, arguing against Huntington and other globalists, argues for a future when no one civilization will impose its norms, values and institutions on the entire world, but in which a diversity of civilizations will be recognized. This is not viewed by him as a return to the past, but a postmodern creation. Unlike Huntington, Dugin is optimistic about what such an order will be.

Arguing for the inseparability of the notion of civilization and the notion of culture, essentially as defined by Herder, is very much in accordance with the Radical Enlightenment. Dugin calls for appreciation of diversity of norms and goes on to clarify what is involved in making civilizations effective actors. He is highly critical of international relations theorists such as Sachs for being captive to the Westphalian tradition of thought, which he argues is now obsolete. It is now impossible to conduct relations between civilizations in the legal framework originating in the West. As actors, these civilizations do not have sharp borders like nation-states. Dugin argues that with these fuzzy boundaries, a multipolar world order can be maintained.

However, the multiculturalism that Dugin defends does not provide the basis for these different civilizations to reach agreement. What is emerging at present are various forms of fundamentalism in which there is no basis for reconciliation of differences, as well

²⁹ Alexander Dugin, *The Theory of a Multipolar World* (London: Arktos, 2021).

³⁰ Samuel P. Huntington, *The Clash of Civilizations and the Remaking of World Order* (New York: Simon & Schuster, 2003).

described by Tariq Ali in *The Clash of Fundamentalisms*.³¹ These can evolve into various forms of fascism. As with the conflict in Israel, if it continues on its present path, the only possible end is the complete destruction of one side of the conflict by the other. Furthermore, to the extent to which Dugin can oppose such conflicts it is because he is not consistent in his defence of multiculturalism. He claims that his approach is scientific. Science, as Dugin himself notes, is a product of Western civilization, with proponents of 'scientism' claiming to have found the way to true knowledge superior to the claims of ordinary people or of other cultures. It is a claim that has been challenged by more consistent critics of Western civilization, such as Bruno Latour, although Latour's position, being consistently multicultural, has generated its own problems. To avoid such difficulties it is necessary to draw on the full potential of the Radical Enlightenment.

Radical Enlightenment and Dialectics

The development of the notion of culture was closely related to appreciation of diverse cultures, understanding these, and communicating with people from very different cultures. This in turn was closely related to the development of dialectics, a form of dialogue that reveals limitations to various ideas and ways of thinking, both theoretical and practical, and engenders creative thinking as a consequence.³² Without going into the long history of the notion of dialectics from the Greeks onward, although history is essential to dialectics, a few essential features of dialectics as it was developed in the Radical Enlightenment should be noted. The most basic is that assumption that we are situated in the world initially through our cultures with their traditions and history, but through dialogue with others we develop the capacity to reflect upon, critique and develop our culture and its traditions, with science itself being a cultural tradition developing through dialectical reasoning consisting of multiple traditions of research, dialectically related to the broader traditions of philosophy. While some proponents of dialectics have striven for a means to gain absolute certainty in knowledge, as with Hegel's later effort to 'geometrize' dialectics or Engels' effort to reduce dialectics to three dialectical laws, the most consistent form of dialectics acknowledges that this is not possible and acknowledges that there is far more to being than we could ever understand, but claim we can still have progress as deficient ways of thinking are identified and overcome. Dialectics, denying the possibility of finding absolute foundations for knowledge, offers a path between relativism and

³¹ Tariq Ali, *The Clash of Fundamentalisms: Crusades, Jihads and Modernity* (London: Verso, 2003).

³² Gare, *Philosophical Foundations of Ecological Civilization*, 2016.

dogmatism, including the dogmatism of scientism, allowing for indefinite progress in inquiry and in the development of culture, sometimes characterized by major innovations. Dialectics itself can develop dialectically. The conditions for enquiry, including social practices, technologies, the media of communication, institutions and specialized cultural fields should also be acknowledged as involved in such dialectical reasoning. This is dialectics as understood by Schelling and presupposed by Marx.

Central to dialectics is the effort to develop a coherent, comprehensive characterization of physical existence, which must be able to acknowledge the reality of dialectical thinking and make sense of its possibility. This involves being able to make intelligible the reality of life, from its most basic forms to sentient life and to human beings able to enquire about the nature of the universe and the place of humanity within it. In this quest philosophers, scientists and mathematicians inspired by Schelling and drawing on non-Western and older traditions of thought, transcended Cartesian dualism and Newtonian physics. This is the tradition of process metaphysics. The development of this tradition has engendered biosemiotics in which life is identified with the emergence of semiosis, the production and ‘interpretation’ of signs. These extend from the most primitive responses of the most basic forms of life to their environments, to vegetative, animal and then human forms of semiosis. ‘Interpretants’ can be particular biological forms, actions, signalling, and in the case of humans, symbolic interaction in which the meaning of signs, presupposing the other forms of semiosis, is based on conventions. The possibility of semiosis is explained through thermodynamics and the emergence of new enabling constraints, which also account for both development and evolution from the first forms of life through the development of ecosystems, eukaryotic cells to primitive, multi-celled organisms to plants, fish and animals and then to humans and their cultural and social evolution.³³ In all cases, what is involved are new forms of symbiosis or cooperation producing and maintaining in existence these forms, and also new forms of conflict, which can also function as enabling constraints.

Such evolution is characterized by scaffolding. As a founder of biosemiotics, Jesper Hoffmeyer argued:

³³ S. N. Salthe, “The Natural Philosophy of Ecology: Developmental Systems Ecology,” *Ecological Complexity* 2 (2005): 1–19.

... this evolutionary process is the building up of a pattern of semiotic scaffoldings, a tightly wound web of checks and balances gradually establishing itself through myriads of semiotic interactions between organisms: Nature in fact is not so much about “tooth and claw” as it is about sensing, interpreting, coordinating and social co-operation.³⁴

The conditions for later developments are supplied by earlier developments, although what emerges in this way can then modify the scaffolds which made the later developments possible, either augmenting the scaffolding and thereby their own conditions of existence, or damaging or destroying these scaffolds.

This is also the case with the evolution of humanity from bands of hunter-gatherers to more complex social forms, including tribes, civilizations, nations, socio-economic formations and institutions and political and forms of scientific and cultural enquiry, and from mythological thinking of hunter-gatherers to the development of religions, philosophies and scientific enquiry of modern civilization. Progress can be identified in this evolution, but it is not linear. As Hegel argued, it has been characterized by the rise and fall of civilizations, dark ages, regressions and rebirths or ‘renaissances’ along with new forms of life. The scaffoldings for the achievements of civilizations have not always been benign. Social integration required for peace has often been provided by wars. It was the most brutal of the warring states in Ancient China, the Chin, which unified China, in doing so making possible the much more benign civilization of the Han Dynasty. The brutality of European civilization with its imperialism, capitalism, mechanistic worldview and industrialization has unified the world, possibly providing the scaffolding for a peaceful world-order committed to augmenting the conditions for life and humanity. This need not involve the destruction of this scaffolding, but might require its transformation. Dialectical thinking calls for recognizing what is in place and absorbing and utilizing the best of it to create something new, whether this be a new scientific theory or a new world order.

This is essentially what Schelling argued at the beginning of the Nineteenth Century. Schelling noted that “through the virtually unrestricted expansion of world relations...the Orient and the Occident are not merely coming into contact with one another, but are being compelled ... to fuse into one and the same consciousness, into one consciousness that should for this reason alone be expanded into a world-consciousness.”³⁵ Schelling also

³⁴ Jesper Hoffmeyer, “Introduction: Semiotic Scaffolding,” *Biosemiotics* 8 (2015): 154.

³⁵ F. W. J. Schelling, *The Grounding of Positive Philosophy: The Berlin Lectures*, trans. Bruce Matthews (Albany: State University of New York Press, 2007), 94.

called for the creation of something like the United Nations to protect nations from each other. Whatever its deficiencies, it should be recognized that the Treaty of Westphalen designed to end Thirty Years War by recognizing the right of all countries to have their own religion, did provide the scaffolding for recognizing and respecting diversity world-wide, for overcoming imperialism and organizing relations between countries based on the rule of law, even if this notion has been corrupted and used to develop more subtle forms of imperialism. Similarly, industrialization, initially driven by the quest to disempower and exploit more efficiently workers and colonized countries, was providing the conditions for workers and other exploited people to overcome their oppression completely, as Marx argued. It is possible to acknowledge the oppressiveness and huge failings of modernity, revealed through the perspectives of very different non-European civilizations, incorporating these perspectives and the forms of life that made them possible, while utilizing the culture and institutions of modernity as scaffolding to create a new civilization, modifying rather than totally destroying this scaffolding to do so.

Scaffolding the Creation of a Global Ecological Civilization

The drive for ecological civilization should be understood dialectically in this way, with its quest scaffolded by the past history of life and humanity. Xi Jinping refers to a sequence of civilizations—agricultural civilization, industrial civilization and then ecological civilization. Agricultural civilization was the scaffolding for industrial civilization, which altered this scaffolding, introducing new technologies of farming, chemical fertilizers and pesticides etc. some of which augmented the scaffolding, while others damaged it. This is a huge problem now. Agricultural and industrial civilization can be seen to provide the scaffolding for ecological civilization which aims to modify both agriculture and industry so that the conditions for these are strengthened. China has been working hard at this, transforming deserts into forests or agricultural land, and sterile lakes into vibrant aquatic ecosystems supporting a large fishing industry, while developing renewable, non-polluting sources of energy.

However, there is a much more radical dimension to the notion of ecological civilization promoted both within China and globally, the creation of a global civilization to transcend the civilization of modernity. The scaffolding involved is much more complex. While the notion of ecological civilization has been taken up and promulgated most strongly in China, it is now being embraced around the world, generally strongly embracing this radical dimension. To begin with, as an idea, both ‘ecology’ and

‘civilization’ have their origins in European civilization, but have facilitated going beyond it.

‘Civilization’ is clearly an evaluative term meant to define the superiority of Europeans over other people, but in doing so, provided the scaffolding for critiquing Europeans. For instance, when Mahatma Gandhi was asked what he thought of Western civilization he replied: “I think it would be a good idea.” It is a contested term, and in only some formulations of its meaning is it advanced by proponents of the Radical Enlightenment. It is both a process of developing civility, and a noun of a peaceful social order based on such civility. It is when combined with the notion of culture and cultivation, implying a more robust sense of civility involving realizing people’s highest potentials, that it is advanced by the Radical Enlightenment. The notion of diverse civilizations associated with diverse cultures is even more important in this regard, involving historical inquiry of the kind promoted by Vico, and then with Herder’s work, allowing for co-existing civilizations. Civilizations in this sense were developed to allow for civilizations within civilizations, as Ancient Greek, Roman, Medieval and Modern civilizations are all components of European civilization. The notion of ecological civilization in its radical sense allows that the civilizations co-existing in the world can form the scaffolding for the development of a global civilization, to some extent transforming particular civilizations to create a peaceful relation between different civilizations. Members of European or Western civilization inspired by the Radical Enlightenment were promoting this development, and even if this quest was corrupted by Western imperialists who have used it to subordinate everyone to the core zones of Western civilization, it should be recognized that this concept has provided the scaffolding for a genuine global civilization that is no longer just a facet of Western imperialism.

It is when combined with the notion of ‘ecological’ that its full potential is revealed. Ecology developed as a subdiscipline of biology, scaffolded by the development of evolutionary theory, which in turn had been scaffolded by the development of physical science and the scientific revolution of the Seventeenth Century. This in turn had been scaffolded by the revival of institutions of learning and natural philosophy in the Middle Ages. The Seventeenth Century tradition of science, associated with scientific materialism, legitimated and served European and the Western imperialism. This whole tradition was challenged by the thinkers of the Radical Enlightenment, challenging the basic assumptions of scientific materialism, incorporating ideas from non-European civilization,

as was shown by Joseph Needham in his study of science and civilization in China.³⁶ Influenced by Marx and Alfred North Whitehead, embracing Whitehead's process/relational ontology, Needham argued that through the development of this ontology, which he argued was inspired by Chinese philosophers, science has become the science of the whole of humanity, transcending the parochialism of particular civilizations. Ecology, now explicitly developed on a process/relational ontology promoted by the Radical Enlightenment, in which the primary beings of the universe are conceived to be self-ordering activities that only exist in and through their relations to other processes, with structures having a derivative status. With this ontology it is possible to overcome the divisions between the sciences, the humanities and the arts, bringing into focus and uniting opposition to the mainstream culture of modernity. However, it was the development of science in Western Europe that provided the scaffolding for this global science. The scientific revolution advancing this post-reductionist science is still underway, and involves a revival of natural philosophy to advance the process/relational ontology on which this scientific and cultural revolution is based. This has brought ecology to the fore not only as a major branch of science, but as the reference point for defining science and as the foundation for challenging and replacing Eurocentric culture.³⁷

There have been reductionist trends in ecology, but as I have suggested, overall, ecology has advanced post-reductionist thinking based on a process/relational ontology, becoming a focus for the more radical developments in science. These developments challenge Cartesian dualism and Newtonian cosmology and the whole tradition of Newtonian science, including mainstream interpretations of relativity theory and quantum theory. Ecology is developing the concepts and ways of thinking required to see humans as culturally formed, conscious beings, avoiding the reductionism of psychologists and economists promoting scientism. Human ecology in particular is important for overcoming the division between science and the humanities, especially when incorporating thermodynamics, hierarchy theory, biosemiotics and ecosemiotics.³⁸ It also

³⁶ Arran Gare, "Daoic Philosophy and Process Metaphysics: Overcoming the Nihilism of Western Civilization," in *Metaphysical Foundations of Knowledge and Ethics in Chinese and European Philosophy*, ed. Guo Yi, Sasa Josifovic, and Asuman Lätzer-Lasar (Munich: Fink Wilhelm, 2014), 111–136.

³⁷ See Robert E. Ulanowicz, *Ecology: The Ascendent Perspective* (New York: Columbia University Press, 1977); Arran Gare, "Toward an Ecological Civilization: The Science, Ethics, and Politics of Eco-Poiesis," *Process Studies* 39, no. 1 (2010): 5–38; Turchin, *End Times*, 297ff.

³⁸ See Salthe, "Natural Philosophy of Ecology"; Arran Gare, "Ecological Civilization as Ecopoiesis," in *Handbook of Ecological Civilization*, ed. Michael A. Peters, Benjamin J. Green, Greg William Misiasek, and Xudong Zhu (Singapore: Springer, 2025).

provides the concepts required for rethinking ethical and political philosophy in the current world.³⁹

Integrating Ecological Civilization and Multipolarity as Communities of Communities

Human ecology as a branch of ecology provides the concepts required to understand the nature of the current world-order. Immanuel Wallerstein argued we now live in a world-system, and provided a history of its emergence and development, and current structure. He observed that based on relative incomes it has a triadic structure of core zones, semi-peripheries and peripheries, with very little movement of countries or regions between these zones. Among the core zones, there has been a hegemonic power dominating the other core zones and also the semi-peripheries which in turn dominate and help exploit the peripheries. Much of the history of this world-system has involved wars over which country would be the hegemonic power, beginning with Venice, then the Dutch Republic, then Britain after the Napoleonic Wars in which France was defeated, then USA after the First and Second World Wars, in which Germany was defeated. From this perspective, it now appears that the USA is being challenged by China which could become the next world hegemon.

The nature of this world-order has been made intelligible through human ecology and thermodynamics. Utilizing Richard Newbold Adam's effort to characterize power as control over the triggers for transforming usable energy, Stephen Bunker in, *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State*, showed how the core zones maintain their power by channelling the flows of energy to themselves.⁴⁰ They become productive economies controlling most of the world's energy transformations, using their control over triggers to keep in place this structure which facilitates their domination of the semi-peripheries, which then use their power to extract usable energy from the peripheries. These are the extractive economies. Control also involves transformations of energy, and is affected by education systems and institutions in the core zones that not only operate to control the peripheries, but instil loyalty of its members, while also convincing people in semi-peripheral countries to develop policies and institutions to 'modernize', which in practice facilitate their

³⁹ Gare, "Toward an Ecological Civilization."

⁴⁰ Stephen G. Bunker, *Underdeveloping the Amazon: Extraction, Unequal Exchange, and the Failure of the Modern State* (Chicago: University of Chicago Press, 1988).

exploitation by the core zones. As Bunker argued on the basis of his study of Brazil, this is a system that is destroying the global ecosystem.

From this perspective it is easy to see that the collapse of the Soviet Union involved transforming Russia into a semi-peripheral country with its oligarchs organizing the country to extract usable energy. The Russians, unlike the Ukrainians, mobilized against this. The core zones operating with greater intelligence could have formed a relationship with the Russian leadership under Putin to integrate Russia with Western Europe, but this would have also involved transforming Russia into an extractive economy with Russia focussing on exporting oil and gas, feeding the core zones while depleting its own resources. The structure would not have been challenged, as it now is.

Bunker considered what would be involved in overcoming this structure. For a start, he argued, it would involve a radical revaluation of both labour and natural resources, somehow slowing the flow of energy to the core zones. He also showed how difficult this will be, given the huge differences in power due to differences in access to usable energy. While attacking the ideology of modernization and the modern state engendered by it, he did not offer much in the way of an alternative ideology or vision of an alternative political order, let alone dealing with the problem of how to develop and promulgate such a vision. However, as I have suggested, the ideas of ecology, scaffolded by the development of science and all that made science possible, as one of the greatest achievements of civilization, can be used to recover and develop ideas from the Radical Enlightenment and from non-European civilizations that are very easily grasped and can easily be counterposed to highlight the deficiencies of the dominant ideas of modernity. From this perspective Dugin's arguments can be appreciated, but shown to be compatible with the arguments of Jeffrey Sachs, whose position can at the same time be strengthened.

Core ideas of Aristotle can be revived to serve this purpose. Aristotle was the main target of Thomas Hobbes who provided the most basic categories of social and political life dominating modernity, including the central ideas of mainstream economics, both classical and neoclassical. One of the most important ideas of Aristotle, largely forgotten about, is that constitutions should be judged according to whether they facilitate people living the best possible life, or achieving *eudaimonia*. *Eudaimonia* was seen to be achieved by realizing people's highest potentialities, developing their highest virtues. Such virtues were understood in relation to participating in the life of the polis or community, in its governance and in philosophical inquiry, that is, developing the virtues of prudence, courage, and above all, justice and wisdom. These were seen as the virtues required to maintain the polis and the conditions for achieving *eudaimonia*.

Aristotle's political philosophy can be interpreted through the concepts of ecology as a special case of what is required for any healthy biotic community or ecosystem, where component organisms are provided with niches or homes in which they can flourish and develop their potential to augment the environment of the whole ecosystem and thereby its other members insofar as these also are augmenting the conditions for the flourishing of the community. They are contributing to the health and vitality of the ecosystem. The virtues identified through Aristotle's philosophy can be interpreted through ecology as particular examples of characteristics of members of ecosystems which contribute to the community, that is, the conditions or 'niches' or 'homes' of other 'good' members of the community or ecosystem, facilitating their flourishing, thereby augmenting the life or vibrancy of the community, including its resilience in the face of changes and challenges to it. That is, they are participating in 'eco-poiesis' - home making or niche making of the ecosystem or biotic community.

Ecosystems are composed of other ecosystems and exist in environments created by broader ecosystems. Organisms themselves are highly integrated ecosystems and ecosystems of ecosystems, emerging in the context of other ecosystems. Human communities are also ecosystems consisting of communities of communities, characterized by both a struggle for life against destructive forces along with highly developed forms of semiosis, the basis of human cultures that make it possible for humans to cooperate, control their destinies and take responsibility for themselves and their various communities.

Appreciating this, makes it possible to generalize Aristotle's political philosophy and characterizing of the polis and individual lives to much more complex societies and civilizations, appreciating that these are communities of communities, existing as such in broader biotic communities or ecosystems. As such, virtues can be ascribed not only to individuals, but to communities themselves and to broader communities of communities, judging them according to whether they are augmenting or undermining the niches or homes of other communities, making it possible for them to flourish and for its component members to fulfil their potential to contribute to the life of these broader communities. That is, they can be judged according to whether they are augmenting life and the conditions for life, generating vibrant communities. Building on Aristotle's work we can elaborate and further develop an ethics and politics of eco-poiesis taking into account far more in considering the conditions for achieving a good life.⁴¹ Political life can be conceived in relation to diverse economic, social, political and cultural fields that are

⁴¹ Gare, "Toward an Ecological Civilization."

components of the much more complex world we now live in. The quest for wisdom involves more than just engagement with philosophy, important as this is. It involves engaging in the cultural life of one's communities.

With work in human ecology, we can also understand better the nature of power relations, the threats posed by the exploitation of others, and how these power relations should be appreciated and modified to sustain and augment such eco-poiesis, re-evaluating nature and labour in our practices and social and economic organization, as Bunker called for. It is through understanding the whole of humanity in all its complexity and its participation in broader biotic communities in this way that provides the basis for transcending the Eurocentricism of modernity, and while having been scaffolded by ways of thinking and institutions developed in European civilization, this provides the basis for a global civilization that acknowledges diverse civilizations, their diverse cultures and their significance, while uniting them culturally at a higher level.

At the same time, through such ecological thinking we can also recognize the importance of nations and international relations culminating in the United Nations, even if 'nations' and 'nationalism' were products of Western civilization. Nations are not likely to be displaced as major political agents, despite the efforts of neoliberals, and should have an important place in a post-Western world order, accompanied by 'nationalism' as a territorial ideology, recognizing all people in particular territories are part of 'imagined communities', as 'nations' were characterized by Benedict Anderson.⁴² The notion of 'nation' recognized in the Treaty of Westphalen in 1648 was designed to overcome conflict based on religious differences. Nationalism has been important in fighting Western imperialism, particularly after World War Two, and this was aided by the United Nations. As Dudley Seers argued, the notion of nationalism can be extended to grant a place to major regions of the world encompassing other nations, as is emerging in Latin America and elsewhere.

This extended nationalism was strongly defended by Herman Daly and John Cobb Jr. in *For the Common Good*.⁴³ Daly and Cobb called for communities of communities and communities at multiple levels rather than nations. As with ecosystems, communities can not only be hierarchical but can intersect, as the community of scientists around the world is compatible with them also having loyalty to their nation or civilization. Daly and Cobb's notion of communities facilitates appreciating this. Even while recognizing different

⁴² Benedict Anderson, *Imagined Communities*, rev. ed. (London: Verso, 1991).

⁴³ Herman E. Daly and John B. Cobb Jr., *For the Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future*, 2nd ed. (Boston: Beacon Press, 1994), 8ff., chap. 9.

civilizations, as called for by Dugin, we can still accept Sachs' version of a multipolar world and his suggestions for how a peaceful world-order could be achieved based on accepting the significance of nations, following Daly and Cobb, referring to both nations, civilizations and the whole of humanity, even the global ecosystem, as communities. Nations are the primary political agents in the world, and even if civilizations themselves are also gaining agency, there is no reason why these have to be opposed. They can be mutually constraining. The corruption of the United Nations and international law by rogue States proclaiming or aligning themselves with a rule-based order can be effectively challenged by rejecting legal positivism, the doctrine deriving from Hobbes that legislation itself determines what we label just and unjust. Legal positivism according to which enacted law itself defines justice, a philosophy which now dominates Anglophone countries, is merely an application of Hobbes' claim that might makes right. Reformulating and reviving the tradition of natural law, building on Aristotle's philosophy but utilizing concepts developed by Hegel and rethinking them through ecological concepts, provides a framework for incorporating insights from all civilizations into expanded notions of justice and law.⁴⁴

Conclusion: Ecological Civilization and Transculturalism

Recognizing diverse civilizations in this context does not require the self-refuting doctrine of multiculturalism, claiming to be universal while denying universality. It does involve upholding the quest for a global civilization requiring component civilizations to acknowledge the significance of each other and the broader civilization of which they are components. However, in this context, the uniqueness of each civilization and its history can and should be accorded a place. This involves 'transculturalism' as defended by Mikhail Epstein, upholding the importance of dialogue in which people from different cultures and traditions of thought respect each other, learn from each other and criticise each other.⁴⁵ Territorial communities can benefit from having people with different cultural backgrounds through transculturalism, as was achieved in Switzerland where four languages are spoken, and more recently, in South Africa after the ending of apartheid. Civilizations and more local communities, including nations, can and should retain their identity while participating in transcultural practices associated with ecological civilization. A diversity of civilizations is important for this global civilization because it retains

⁴⁴ Arran Gare, "Law, Process Philosophy and Ecological Civilization," in *Chromatikon VII*, ed. Michel Weber and Ronny Desmet (Louvain-la-Neuve: Les Éditions Chromatika, 2011), 133–160.

⁴⁵ Mikhail Epstein, *The Transformative Humanities: A Manifesto* (New York: Bloomsbury, 2012), 60ff.

diversity and provides the means to explore different possibilities and to check civilizations' tendency to strive for dominance over others. A diversity of power centres, which can be reinforced by recognizing diverse civilizations, is also necessary to check decadence within each civilization, especially the tendency of ruling elites to concentrate wealth and power in their own hands, crippling those engaged in creative work, including philosophers, historians, scientists and artists. These tendencies to strive for domination with resulting decadence have revealed themselves in the USA (and Western Europe) after the decline and disintegration of the Soviet Union.⁴⁶ However, competition between particular civilizations can be valuable if it is constrained so as to avoid violence or subversion of each others' cultures and institutions. In other words, diverse civilizations need to be recognized, but at the same time civilized to function productively as components of a global, ecological civilization. As Samuel Huntington concluded in his seminal work on civilizations: "In the clash of civilizations...the global 'real clash,' between Civilization and barbarism, the world's greatest civilizations, with their rich accomplishments in religion, art, literatures, philosophy, science, technology, morality, and compassion, will ... hang together or hang separately."⁴⁷

Advancing the Radical Enlightenment, Aristotle's ethical and political philosophy can be used to provide the scaffolding to better defend the valuable aspects of Western civilization, such as the notion of rule of law based on justice, international law, and the United Nations, while incorporating wisdom from all civilizations. These achievements should not be dismissed as components of the Eurocentric world-order, as they have been by Dugin. They are achievements of the Radical Enlightenment, which to some extent involved another Renaissance of Greek thought. For instance, Aristotle's characterization of *eudaimonia* as the ultimate end of human life was based on his characterization of humans. *Eudaimonia*, best translated as 'a fulfilling and fulfilled life', requires participation in furthering the common good of one's polis or community. This should be recognized as far more defensible than Hobbes' conception of humans as nothing but mechanisms moved by appetites and aversions, who treat others as mere instruments, and Locke's diluted but less consistent version of this, conceiving the good as what is conducive to pleasure and evil as that which is conducive to pain. Hobbes' and Locke's impoverished conception of humans only had plausibility while science was identified with a mechanistic world-view, although they are still defended by psychologists and economists who have not recognized that the mechanistic world-view is no longer supported by advanced science.

⁴⁶ Turchin, *End Times*.

⁴⁷ Huntington, *Clash of Civilizations*, 321.

Aristotle's non-mechanistic characterization of humans and his communitarianism were greatly advanced through the German Radical Enlightenment. Inspired by Herder and Schelling, this involved incorporating the wisdom of other civilizations, working towards a global consciousness. These advances can now be defended and further developed through post-reductionist natural science, largely inspired by Schelling.⁴⁸

Aristotle gave a central place to the notion of justice as giving people their due, which with his political philosophy, was the basis for the natural law tradition of jurisprudence.⁴⁹ The notion of justice was marginalized along with Aristotle's conception of humans by the Hobbesian/Lockean tradition of thought with its focus on contractually based rights. Following Aristotle, justice can again be made central in ethics, politics and jurisprudence. Opposition to injustice, which can now involve extending recognition of the intrinsic value of the whole of humanity and all living beings, can be recognized as a major driving force for the progress of humanity. 'Rights' can be given a place in this tradition of thought, but always defined in relation to and subordinated to the quest for justice. However, through Chinese traditions of thought which have privileged 'humanity' as the ultimate virtue, we can also argue that justice should always be defined in relation to and subordinated to this notion of humanity. Then humanity should be defined in relation valuing life as such, as fostered by Indian traditions of thought. What is required is an ecological civilization incorporating multipolarity, conceiving of life and humanity in accordance with ecological thinking as communities of communities, integrated without homogenization through transculturalism and the multi-levelled institutions supporting it.

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⁴⁸ Gare, *Philosophical Foundations of Ecological Civilization*, 126ff.

⁴⁹ Gare, "Law, Process Philosophy and Ecological Civilization."

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Survival of the Harmonious: Toward a Harmony-Oriented Ecological Civilization—A Second Enlightenment Perspective

Meijun Fan and Zhibe Wang

Abstract: If modern industrial civilization is competition-oriented, ecological civilization is harmony-oriented. Grounded in a mechanical worldview, atomistic individualism, and the competitive values of the First Enlightenment, industrial civilization follows the logic of “survival of the fittest,” or even “survival of the strongest.” Although it has generated unprecedented material wealth, it has also produced ecological crisis, social conflict, and spiritual disorientation. In response, the Second Enlightenment calls for a transition toward ecological civilization, whose guiding principle is “survival of the harmonious.” The sustainable flourishing of species, societies, and humanity depends not only on competitive capacity, but also on the ability to foster harmonious coexistence, collaborative development, and shared flourishing within the community of life. Philosophically, this paradigm draws on process-relational mutual immanence, Chinese yin-yang thinking, and the equality and interconnectedness of all beings. Ecological civilization therefore seeks to overcome modern dualisms and rebuild harmonious relations between humanity and nature, among persons, between individuals and society, and between body and mind. As both a major achievement of the Second Enlightenment and a creative transformation of China’s traditional culture, it signals a historic transition from “survival of the fittest” to “survival of the harmonious,” and from competition-oriented to harmony-oriented civilization.

Keywords: *constructive postmodernism; harmony-oriented civilization; second enlightenment; survival of the harmonious; ecological civilization*

Why Is a Second Enlightenment Needed?

Since the Enlightenment, modern civilization, with reason, science, and freedom at its core, has profoundly transformed human society. It promoted the Scientific Revolution and established a modern scientific system based on experimentation and evidence, greatly enhancing humanity's capacity to understand and transform the world. It gave rise to the Industrial Revolution, enabling unprecedented growth in productive forces and creating abundant material wealth. It spread the ideals of democracy, liberty, human rights, and equality, advancing modern political institutions and enhancing individual dignity and rights. It also established the market economy and global trade networks, fostering innovation, prosperity, and exchanges among civilizations. Scientific progress, industrial development, democratic institutions, and the modern economic system together constitute the most important achievements of modern civilization, ushering humanity into an era of unparalleled development.

While creating prosperity and progress, modern civilization has also generated profound crises. The long-term pursuit of economic growth and resource exploitation has led to global problems such as ecological degradation, environmental pollution, and resource depletion. Dependence on fossil fuels has intensified climate change, resulting in extreme weather events, melting glaciers, and rising sea levels. Biodiversity continues to decline, weakening the stability of the Earth's ecosystems. As some critics have pointed out, "we are currently witnessing the greatest disruption to the earth's nitrogen cycle in 2.5 billion years."¹ It is safe to say that the ecological crisis is the most pressing and severe challenge facing the world today.

At the same time, widening wealth disparities, declining social trust, and intensifying conflicts of interest have contributed to growing social fragmentation. Material abundance has not brought a corresponding increase in happiness. Problems of mental health, including anxiety, loneliness, depression, and the loss of meaning, continue to spread. As Ulrich Beck, the renowned German sociologist and the originator of the "risk society" theory, has pointed out, the crisis confronting humanity today is not the so-called environmental crisis, "but a profound institutional crisis of industrial society itself."² In other words, the ecological crisis is essentially a crisis of human civilization—more

¹ Peter Brannen, "The Anthropocene Is a Joke," *The Atlantic*, August 13, 2019.

² Ulrich Beck, "Risk Society and the Provident State," in *Risk, Environment & Modernity: Towards a New Ecology*, ed. Scott Lash, Bronisław Szerszynski, and Brian Wynne (London: Sage, 1996), 32.

precisely, a crisis of modern industrial civilization. “If an era encounters problems, it is because the philosophy of that era has encountered problems.”³

In our view, the First Enlightenment bears considerable responsibility for the predicament humanity faces today, for it was the First Enlightenment that provided the direct theoretical foundation for modern civilization. By the First Enlightenment, this paper refers primarily to the intellectual movement that arose in Western Europe during the seventeenth and eighteenth centuries and exalted reason. In China, it refers to the May Fourth New Culture Movement of the 1920s, which called for the embrace of “Mr. Democracy” and “Mr. Science.” There is no doubt that these two enlightenment movements, despite the considerable temporal and spatial distance between them, share an intrinsic connection. Although the May Fourth Movement cannot simply be regarded as a horizontal transplantation of European Enlightenment discourse into China, the continuity of their intellectual lineage and the affinity of their underlying spirit are undeniable. Therefore, this paper collectively refers to them as the “First Enlightenment.”

What, then, are the limitations of the First Enlightenment? Scholars have offered various summaries and interpretations. In *The Second Enlightenment*, we attempted to summarize them in seven points.⁴ However, after years of further reflection, we believe that the following ten interrelated characteristics more adequately capture its limitations: an imperialistic attitude toward nature; a racist stance toward the Other; a nihilistic attitude toward tradition; contempt for rural life and farmers; blind reverence for science; excessive faith in reason; a one-dimensional interpretation of freedom; a homogenizing understanding of democracy; an intense fascination with struggle and competition; and an extreme worship of capital.

It is precisely these limitations of the First Enlightenment—especially its imperialistic attitude toward nature, its intense fascination with struggle, and its profound disdain for harmony—that have “caused enormous suffering for humankind.”⁵ They have pushed humanity toward “the environmental precipice”⁶ and have led to the ecological crisis that now threatens human survival. In the words of David Ray Griffin, this is an “unprecedented crisis.” He warns that “if we allow the ecological crisis to continue

³ Zhihe Wang and Meijun Fan, 第二次启蒙 [*The Second Enlightenment*] (Beijing: Peking University Press, 2011), 13.

⁴ See Zhihe Wang and Meijun Fan, 第二次启蒙 [*The Second Enlightenment*] (Beijing: Peking University Press, 2011), 13.

⁵ Charlene Spretnak, *Relational Reality: New Discoveries of Interrelatedness That Are Transforming the Modern World* (Topsham, ME: Green Horizon Books, 2011), 1–2.

⁶ Spretnak, *Relational Reality*, 1–2.

developing, human civilization will come to an end amid the global pursuit of unrestricted development.”⁷

In 2018, the United Nations warned that humanity had only a limited window of roughly 12–22 years to prevent irreversible climate disruption.⁸ Therefore, if we are to avoid the destruction of both the Earth and humanity, it is necessary to launch a Second Enlightenment on the basis of a critical reflection upon the First Enlightenment.

What, then, are the principal theoretical concerns of the Second Enlightenment? To summarize its theoretical content is by no means an easy task. In this paper, we attempt to characterize it in terms of the following ten interrelated themes: transcending anthropocentrism and promoting ecological consciousness; transcending Western centrism and advocating cultural complementarity; challenging uniformity-oriented thinking and appreciating the beauty of diversity; transcending industrialized agriculture and embracing a rooted postmodern rural civilization; rejecting the notion of “abstract freedom” and moving toward responsible and profound freedom; sublating homogenized democracy and advancing toward ethical democracy; challenging domineering science and promoting humane science; rejecting the worship of struggle and advocating “Survival of the Harmonious;” transcending pure rationality and calling for aesthetic wisdom; and challenging the hegemony of capital in favor of empathism.⁹

The principle of survival endorsed by the Second Enlightenment is Survival of the Harmonious. If the First Enlightenment embraced “the struggle for existence” and “survival of the fittest,” the Second Enlightenment emphasizes a consciousness of harmony and advocates “survival of the harmonious.” This constitutes a major theoretical watershed between the First and Second Enlightenments.

Why, then, are harmonious relationships so important? In the view of Alfred North Whitehead, one of the principal intellectual forerunners of the Second Enlightenment, all things in the universe can exist and develop only within harmonious relationships. In *Science and the Modern World*, Whitehead criticized the worship of competition that permeates modern Western society and illustrated the importance of cooperation through the example of a forest:

⁷ David Ray Griffin, “Ecological Civilization: The Only Way to Save Human Civilization,” trans. Ke Jinhua, *Journal of Shenzhen University (Humanities and Social Sciences Edition)*, no. 6 (2013).

⁸ See Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-industrial Levels and Related Global Greenhouse Gas Emission Pathways*, ed. Valérie Masson-Delmotte et al. (Geneva: Intergovernmental Panel on Climate Change, 2018).

⁹ Zhihe Wang, Meijun Fan, and Junfeng Wang, “The Second Enlightenment and the Process Turn in Contemporary Western Thought,” *Shandong Social Sciences*, no. 12 (2021).

A tree by itself is at the mercy of all the adverse chances of an inconstant environment. The wind may blow it down, variations of temperature may check its foliage, rain may wash away the soil, and its leaves may be blown away instead of decaying into humus....Under ordinary circumstances, trees require the companionship of a forest in order to grow well. Each tree may lose something in the perfection of its individual growth, but together they preserve the conditions for growth. The soil is retained and shaded. The microorganisms necessary for the production of humus are not killed by sun, frost, or erosion. A forest is the triumph of the organization of mutually dependent species.¹⁰

This is the triumph of the whole, the triumph of the community, and the triumph of cooperation. In Whitehead's view, crude individualism has no real place in nature. The deeper reality is one of profound interdependence and a genuine sharing of destiny.

If the First Enlightenment was concerned with the question of "how individuals can attain freedom," then the Second Enlightenment is more concerned with "how free individuals can live harmoniously with others, society, and nature." The former emphasizes reason, the individual, competition, and control; the latter emphasizes relationships, community, cooperation, and symbiosis. Behind these two approaches lie two different civilizational orientations: one is a competition-oriented civilization, characterized by competition and separation; the other is a harmony-oriented civilization, characterized by interconnectedness, cooperation, and harmony.

It is in this sense that ecological civilization emerges as one of the most important achievements of the Second Enlightenment. Ecological civilization is not merely a new mode of development; it is a new form of civilization. It advocates harmonious coexistence between humanity and nature, cooperative and mutually beneficial relationships among people, and coordinated development between individuals and society. It replaces "survival of the fittest" with "survival of the harmonious" as its guiding civilizational principle. Fundamentally speaking, ecological civilization is a harmony-oriented civilization. It represents a major historical transition in human civilization—from separation to interconnectedness, from competition to cooperation, and from conquest to symbiosis.

Ecological Civilization is a Harmony-Oriented Civilization

Ecological civilization is not merely a mode of development; it is a new form of civilization. It involves not only adjustments in patterns of economic growth, industrial

¹⁰ Alfred North Whitehead, *Science and the Modern World* (New York: Free Press, 1967), 205–6.

structures, and lifestyles, but also a profound transformation of humanity's worldview, values, and understanding of civilization itself. In an important sense, ecological civilization is not a simple modification of industrial civilization; rather, it represents a fundamental transcendence of the developmental logic of industrial civilization and marks a significant transformation in the evolution of human civilization. In the words of Dr. John B. Cobb, Jr., "It demands a fundamental shift in how we perceive our relationship with the Earth and with each other."¹¹ According to the authors of *What is Ecological Civilization?* "An Ecological Civilization is one in which humans are fully aware of themselves as part of the natural world, and aware of their close kinship to the other creatures who constitute that world."¹²

The reason ecological civilization is a harmony-oriented civilization lies not only in its characterization as a "compassionate civilization," in contrast to the industrial civilization which is "an unkind civilization,"¹³ but also in the fact that it takes harmony (*he*) as its most fundamental value orientation and guiding principle. Harmony here does not mean uniformity through the elimination of differences, nor does it imply superficial peace achieved by avoiding conflicts. Rather, it refers to coordinated coexistence and shared development based on the recognition of differences and respect for diversity. What ecological civilization seeks is comprehensive harmony among humanity and nature, among human beings, between individuals and society, among nations, and within the human person.

First, ecological civilization seeks harmony between humanity and nature. It transcends the mentality of conquering nature and emphasizes that human beings and nature belong to the same community of life, striving for symbiosis and shared flourishing.

Second, ecological civilization seeks harmony among human beings. While acknowledging the positive role of competition, it places greater emphasis on cooperation, mutual assistance, and sharing. It stresses the unity of individual development and collective well-being and seeks win-win outcomes through respect for differences.

Third, ecological civilization seeks harmony between individuals and society. It rejects the view that development should be measured solely by economic growth and advocates

¹¹ John B. Cobb Jr., "The Call for an Ecological Civilization," in *Handbook of Ecological Civilization: Concept, Philosophy, and Pedagogy*, ed. Michael A. Peters et al. (Cham: Springer, 2026), 8.

¹² Philip Clayton and Wm. Andrew Schwartz, *What Is Ecological Civilization? Crisis, Hope, and the Future of the Planet* (Anoka, MN: Process Century Press, 2019), 64.

¹³ Zhihe Wang and Junfeng Wang, "Ecological Civilization as a Compassionate Civilization," in *Handbook of Ecological Civilization: Concept, Philosophy, and Pedagogy*, ed. Michael A. Peters et al. (Cham: Springer, 2026), 65–82.

the coordination of economic prosperity, social justice, and ecological protection. It promotes a social order characterized by fairness, justice, and shared responsibility.

At the same time, ecological civilization seeks harmony among nations. In the face of global challenges such as climate change, environmental pollution, and biodiversity loss, no nation can remain unaffected or prosper alone. Ecological civilization advocates the idea of a community with a shared future for humankind, replacing confrontation with cooperation and zero-sum competition with mutual benefit, in order to safeguard global ecological security and the future of humanity.

Finally, ecological civilization seeks harmony within the human person. It is concerned not only with the external environment but also with spiritual growth and the quality of life. It strives to achieve balance and integration between body and mind, matter and spirit, and reason and emotion.

Therefore, ecological civilization is not merely a framework for environmental governance; it is a new civilizational paradigm centered on the value of harmonious coexistence. It encourages humanity to move from control to participation, from conquest to symbiosis, from competition to cooperation, and from fragmentation to harmony. In doing so, it seeks to rebuild the relationships between humanity and nature, between individuals and society, and within human beings themselves. In this sense, ecological civilization is fundamentally a harmony-oriented civilization. It represents a historic transition in human civilization from being competition-centered to being harmony-centered, and points toward a promising direction for the future development of civilization.

The Philosophical Foundations of a Harmony-Oriented Civilization

Survival of the Harmonious is neither an empty moral appeal nor an emotional reaction against modern competitive society. Rather, it is a civilizational vision grounded in profound philosophical foundations. Its theoretical roots derive primarily from two sources: first, the relational worldview articulated by process philosophy, especially in the work of Alfred North Whitehead; and second, the wisdom of harmony embedded in Chinese traditional philosophy, particularly in the *Yijing (Book of Changes)*, Confucianism, and Daoism. Although these two traditions emerged in different cultural contexts, they converge on a common insight: the world is not composed of isolated entities but constitutes an interconnected, interdependent, and co-creative community of life. Accordingly, the fundamental principle of flourishing is not the law of the jungle but harmonious coexistence.

Process Philosophy: From Substance to Relation

One of the major philosophical foundations of modern industrial civilization is the substance philosophy represented by René Descartes. Substance philosophy understands the world as consisting of independent and self-contained entities, thereby giving rise to dualistic modes of thought that separate subject from object, humanity from nature, and self from others.

Whitehead's process philosophy fundamentally overturns this substance-based worldview. In his view, the most basic realities are not substances but continually emerging "actual entities" or "actual occasions." These actual entities do not exist in isolation; rather, they constitute themselves through their relationships with others. As Whitehead writes: "Each actual entity is referent to every other actual entity."¹⁴ Relations, therefore, are not external attributes added to existence; they are constitutive conditions of existence itself.

In *Adventures of Ideas*, Whitehead further develops the concept of "mutual immanence," arguing that all things in the universe are, in some sense, internally present within one another, forming a relational network in which "each is in all, and all are in each."¹⁵ Not only are beings interconnected, but times, spaces, and the relationships between time and space are also mutually implicated.

For this reason, Whitehead gives priority to relatedness over quality. As he makes clear in the Preface to *Process and Reality*, the fundamental character of reality is not static substance but interconnected process.¹⁶ Relation precedes isolation, process precedes substance, and interdependence precedes separation.

The American process thinker Marjorie Hewitt Suchocki further develops this insight through her concept of interdependence. She writes: "Interdependence is universal."¹⁷ She further emphasizes: "We are not accidentally interdependent; we are necessarily interdependent."¹⁸ Indeed, Suchocki observes that: "The well-being of one depends in

¹⁴ Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, corrected ed., ed. David Ray Griffin and Donald W. Sherburne (New York: Free Press, 1978), 50.

¹⁵ Alfred North Whitehead, *Adventures of Ideas* (New York: Macmillan, 1954), 254.

¹⁶ Whitehead, *Process and Reality*, xiii.

¹⁷ Marjorie Hewitt Suchocki, *The Fall to Violence: Original Sin in Relational Theology* (New York: Continuum, 1999), 72.

¹⁸ Suchocki, *The Fall to Violence*, 69.

some sense on the well-being of all.”¹⁹ For this reason, interdependence may be regarded as “the very stuff of life.”²⁰

From this perspective, the human being is no longer an isolated individual but a node within a web of relationships. Nature is no longer an object to be conquered but an integral part of the community of life. Society is no longer a mere aggregation of atomistic individuals but an organic whole constituted by mutual dependence.

Consequently, process philosophy reveals not the competitive logic of “survival of the fittest” but the relational logic of survival of the harmonious. Sustainable development arises not from exclusion and domination but from cooperation and symbiosis. Genuine flourishing comes not from defeating others but from enabling one another to flourish.

Chinese Traditional Philosophy: From Harmony as the Way of the Cosmos to Survival of the Harmonious

If process philosophy reveals the relational nature of reality from a contemporary philosophical perspective, Chinese traditional philosophy develops a comprehensive philosophy of harmony through several thousand years of civilizational experience. Indeed, one of the most distinctive features of Chinese thought is its persistent pursuit of harmony (*he* 和). In this sense, Chinese culture can be regarded as a “Chinese harmonism.”²¹ As Roger T. Ames observes, the Confucian sage is characterized by an openness to *harmonious engagement*.²² More broadly, the creation of organic harmony has been a recurring aspiration throughout the history of Chinese philosophy. Although Confucianism, Daoism, and Buddhism differ in emphasis, all regard harmony as an ideal state: Confucianism seeks harmony among human beings, Daoism emphasizes harmony between humanity and nature, and Buddhism pursues harmony between body and mind.

From the perspective of Chinese philosophy, harmony is not merely a moral virtue or a social ideal. It is rooted in a comprehensive vision of reality itself. This vision unfolds through a series of interconnected insights that move from cosmology to ethics and finally

¹⁹ Suchocki, *The Fall to Violence*, 72.

²⁰ Suchocki, *The Fall to Violence*, 69.

²¹ Zhihe Wang, *Process and Pluralism: Chinese Thought on the Harmony of Diversity* (Berlin: De Gruyter, 2013), vi.

²² For Ames’s discussion of Confucianism as a relational tradition in which persons flourish through harmonious participation in cultivated roles and relationships, see Roger T. Ames, *Confucian Role Ethics: A Vocabulary* (Honolulu: University of Hawai’i Press, 2011), and Roger T. Ames and David L. Hall, *Thinking Through Confucius* (Albany: State University of New York Press, 1987).

to civilization. Together they provide a profound philosophical foundation for survival of the harmonious.

***Yin-Yang* Thinking: Difference as the Condition of Life**

The starting point of Chinese philosophy is the recognition that reality is constituted not by isolated substances but by dynamic relationships. This insight finds its most fundamental expression in the theory of *yin* and *yang*.

Yin and *yang* are not mutually exclusive opposites locked in perpetual conflict. Rather, they are complementary forces that mutually depend upon, transform, and complete one another. As Cheng Hao, a Chinese philosopher in the Song dynasty, states: “Neither *yin* alone nor *yang* alone can generate life”²³ (獨陰不生, 獨陽不長). Without *yin* there can be no *yang*; without *yang* there can be no *yin*. Life emerges not through the elimination of difference but through the interaction of differences. Difference is therefore not a problem to be overcome but a condition of creativity itself.

This perspective stands in sharp contrast to the dualistic “either-or” logic that has shaped much of modern Western thought. Chinese philosophy advocates a “both-and” perspective in which apparent opposites coexist, interact, and enrich one another. Diversity is not an obstacle to unity; it is the precondition of unity. Harmony arises not from uniformity but from the creative integration of differences.

Harmony Generates Life: The Creative Principle of the Cosmos

Building upon *yin-yang* thinking, Chinese philosophy develops a deeper understanding of harmony itself. The *Guoyu* (*Discourses of the States*) famously declares: “It is harmony that generates life; sameness having no offspring”²⁴ (和實生物, 同則不繼). This statement may be regarded as one of the most profound formulations in the entire Chinese philosophical tradition.

First, harmony differs fundamentally from sameness because it presupposes difference. Genuine harmony welcomes diversity rather than suppressing it. Second, harmony is creative. New forms of life, culture, and civilization emerge precisely through the interaction of diverse elements. Sameness, by contrast, eventually becomes stagnant and sterile. Third, harmony is rooted in openness. Whereas sameness excludes difference,

²³ Cheng Hao, “Cheng Hao’s Discourse,” in *Selected Works of Chinese Philosophy History* (Beijing: China Bookstore, 1982), 73.

²⁴ *Guoyu*, in *Selected Works in Chinese Aesthetic History*, ed. Philosophy Department, Peking University (Beijing: China Publishing House, 1980), 470.

harmony incorporates difference and transforms it into a source of vitality. Confucius expressed the same insight when he stated: “The noble person seeks harmony but not sameness; the petty person seeks sameness but not harmony.”²⁵ Together these teachings suggest that flourishing emerges not through homogenization but through the creative coordination of diversity. Harmony is therefore not merely a social virtue; it is a generative principle of life itself.

Great Harmony (*Taihe*): The Cosmological Ground of Flourishing

The concept of harmony reaches its highest philosophical expression in the idea of *Taihe* (Great Harmony). Chinese philosophy does not stop at the observation that harmony generates life. It elevates harmony to the level of cosmology and ontology. The *Book of Changes* states: “Preserving and integrating Great Harmony brings prosperity and flourishing.”²⁶ *Taihe* is not simply another word for harmony. Harmony (*he*) refers to the coordinated relationship among different elements. *Taihe* refers to the highest and most comprehensive realization of harmony—the dynamic cosmic order through which all things emerge, interact, nourish one another, and flourish together.

Dong Zhongshu (c. 195–105 BCE), a renowned Confucian scholar and government official of the Han dynasty, explains: “Harmony is that through which Heaven and Earth generate all things.”²⁷ The Northern Song philosopher Zhang Zai develops this insight even further: “Great Harmony is what is called the Dao.”²⁸ For Zhang Zai (Chang Tsai, 1020–1077 CE), *Taihe* is not merely an ideal condition but the very reality of the universe itself. It is the ultimate ontological ground from which all beings arise and within which all beings participate.

The cosmological foundation of *Taihe* lies in the interaction of yin and yang. Yin and yang provide the dynamic mechanism of the cosmos; harmony is the creative process generated by their interaction; *Taihe* is the highest and most comprehensive realization of that process. It represents the universe as an organic, self-generating, and self-harmonizing whole. From this perspective, *Taihe* may be understood as the Chinese philosophical

²⁵ Confucius, *The Analects with Annotations and Translation (Lunyu Yizhu)*, trans. and annot. Yang Bojun (Beijing: Zhonghua Book Company, 2006), 142.

²⁶ Zhou Zhenfu, trans. and annot., *Annotated Translation of the Zhouyi* (Beijing: Zhonghua Book Company, 2013), 12.

²⁷ Dong Zhongshu, *Luxuriant Gems of the Spring and Autumn Annals (Chunqiu Fanlu)* (Jinan: Shandong Friendship Press, 2001), 643.

²⁸ Zhang Zai, *Collected Works of Zhang Zai (Zhang Zai Ji)* (Beijing: Zhonghua Book Company, 1978), 7.

equivalent of a cosmic community of life. Ecological civilization, therefore, can be seen as a contemporary expression of the ancient Chinese pursuit of Great Harmony.

The Unity of All Things: The Ethical Implication of *Taihe*

If *Taihe* is the cosmological foundation of harmony, then the unity of all things is its ethical implication. Because all beings arise from the same cosmic process, Chinese philosophy naturally develops a vision of the interconnectedness and equality of life. Zhuangzi declares: “From the perspective of the Dao, things are neither noble nor base”²⁹ (以道觀之, 物無貴賤). All beings possess intrinsic worth. No entity is absolutely superior to another.

This vision was further developed by Neo-Confucian thinkers. Zhang Zai writes: “All people are my brothers and sisters; all things are my companions”³⁰ (民吾同胞, 物吾與也). Similarly, Cheng Hao states: “The humane person forms one body with Heaven, Earth, and the myriad things” (仁者, 以天地萬物為一體), and “The humane person is one body with all things”³¹ (仁者渾然與萬物同體). These teachings dissolve the rigid separation between humanity and nature. Human beings are not masters standing outside nature but participants within a larger community of life. Heaven, Earth, humanity, and the myriad beings together constitute one living whole.

The well-known Chinese ideal of the unity of Heaven and humanity (*tianren heyi*) is rooted precisely in this vision. Humanity and nature are not external to one another but are mutually embedded within the same process of Great Harmony.

Non-Contention: The Practical Wisdom of Great Harmony

If *Taihe* reveals the nature of reality and the unity of all things reveals the nature of life, then Daoist non-contention reveals how human beings ought to live within such a reality. The *Doctrine of the Mean* teaches: “Different ways proceed together without conflicting with one another” (道並行而不相悖), and “All things grow together without harming one another”³² (萬物並育而不相害). These statements affirm that plurality need not lead to conflict. Difference and coexistence are not mutually exclusive but mutually enriching.

²⁹ Zhuangzi Jin Zhu Jin Yi [Modern Annotation and Translation of the Zhuangzi] (Beijing: Zhonghua Book Company, 2018), 575.

³⁰ Zhang Zai, *Collected Works of Zhang Zai*, 62–63.

³¹ Cheng Hao and Cheng Yi, *Collected Works of the Two Chengs (Er Cheng Ji)*, vol. 1 (Beijing: Zhonghua Book Company, 1981), 15.

³² Wang Guoxuan, trans. and annot., *A Translation and Annotation of The Great Learning and The Doctrine of the Mean* (Beijing: Zhonghua Book Company, 2006), 129.

Daoism develops this insight through the principle of *wuzheng* (non-contention). The *Daodejing* states: “The Dao of Heaven benefits all things without harming them; the Dao of the sage acts without contention”³³ (天之道，利而不害；聖人之道，為而不爭). Laozi repeatedly presents water as the model of harmonious existence: “The highest goodness is like water. Water benefits all things and does not contend”³⁴ (上善若水。水善利萬物而不爭). He further writes, “Nothing in the world is softer and weaker than water, yet nothing surpasses it in overcoming the hard and strong”³⁵ (天下莫柔弱於水，而攻堅強者莫之能勝). He also declares, “Because one does not contend, no one in the world can contend with him”³⁶ (夫唯不爭，故天下莫能與之爭). Non-contention does not imply passivity or weakness. Rather, it reflects a deeper wisdom grounded in the recognition of interdependence. It seeks cooperation rather than domination, mutual flourishing rather than victory, and creative transformation rather than destructive conflict.

If Taihe represents the metaphysical foundation of harmony, then non-contention represents its practical expression. Taihe tells us what reality is; non-contention tells us how to live within that reality.

In a word, from the cosmological interaction of yin and yang, through the generative principle that “harmony generates life,” to the ontological vision of Great Harmony, the ethical ideal of the unity of all things, and the Daoist wisdom of non-contention, Chinese philosophy consistently points toward one fundamental insight: life flourishes through harmonious participation rather than competitive domination.

Together with the relational worldview of process philosophy, this tradition provides a profound philosophical foundation for survival of the harmonious. It teaches that the deepest law of life is not conquest but symbiosis, not competition but cooperation, not isolated existence but mutual fulfillment. In this sense, survival of the harmonious is not merely a moral ideal; it is a fundamental principle of life, civilization, and the cosmos itself.

The Contemporary Significance of a Harmony-Oriented Civilization

As a new form of civilization advocated by the Second Enlightenment, a harmony-oriented civilization possesses not only profound theoretical significance but also great practical relevance for addressing the crises of modern civilization and promoting the

³³ Chen Guying, *Laozi: Modern Translation and Commentary* (Beijing: Commercial Press, 2016), 302–3.

³⁴ Chen Guying, *Laozi*, 30.

³⁵ Wing-tsit Chan, *A Source Book in Chinese Philosophy* (Princeton, NJ: Princeton University Press, 1963), 177–78.

³⁶ Chan, *A Source Book in Chinese Philosophy*, 52.

sustainable development of human society. It offers a new perspective for understanding the relationships between humanity and nature, among human beings, between individuals and society, and within the human person, while pointing toward a more desirable future.

First, a harmony-oriented civilization contributes to rebuilding harmony between humanity and nature. For a long time, modern industrial civilization has been grounded in anthropocentrism, treating nature primarily as an object to be exploited and utilized. The result has been ecological degradation, resource depletion, and an intensifying global climate crisis. A harmony-oriented civilization, by contrast, emphasizes that humanity and nature constitute an indivisible community of life. As John Cobb observes: "We are part of an interconnected web of life."³⁷ Nature possesses not only instrumental value but also intrinsic value. Humanity and nature share a common destiny: when one flourishes, the other flourishes; when one suffers, the other suffers. Only by moving from conquering nature to respecting, following, and protecting nature can humanity achieve genuine sustainability.

Second, a harmony-oriented civilization contributes to rebuilding harmony among human beings. Modern society's excessive emphasis on competition and self-interest has increasingly alienated people from one another. Process philosophy reminds us that every individual exists within a web of relationships. Whitehead writes: "Each actual entity is referent to every other actual entity."³⁸ Human beings do not exist in isolation; rather, they develop through mutual dependence and mutual fulfillment. Accordingly, a harmony-oriented civilization advocates respect for difference, attentiveness to others, and openness to diversity. It seeks to replace confrontation with cooperation and zero-sum competition with mutual benefit, thereby laying the foundation for more harmonious human relationships.

Third, a harmony-oriented civilization contributes to rebuilding harmony between individuals and society. Modern development has often fallen into the trap of prioritizing economic growth above all else, resulting in tensions among social justice, ecological protection, and economic development. A harmony-oriented civilization emphasizes the unity of individual and collective interests and advocates the coordinated development of economic, social, and ecological well-being. It seeks to establish a social order that balances efficiency and justice, freedom and responsibility, and individual autonomy and communal

³⁷ John B. Cobb Jr., *The Earthist Challenge to Economism: A Theological Critique of the World Bank* (New York: St. Martin's Press, 1999), 76.

³⁸ Whitehead, *Process and Reality*, 50.

flourishing, enabling diverse groups to achieve common development through mutual respect and cooperation.

Fourth, a harmony-oriented civilization contributes to restoring harmony between body and mind. The instrumental rationality and efficiency-centered values of modern civilization have contributed to widespread anxiety, loneliness, and a loss of meaning. According to the World Health Organization, approximately one billion people worldwide suffer from mental disorders.³⁹ In response, a harmony-based civilization embraces the principle that *harmony is beauty*. It emphasizes balance between body and mind, reason and emotion, and material and spiritual dimensions of life. The Chinese ideals of *zhonghe* (central harmony) and *taihe* (Great Harmony), together with the holistic vision of process philosophy, offer valuable resources for helping modern individuals recover inner peace, wholeness, and genuine well-being.

Finally, a harmony-oriented civilization contributes to the construction of a cosmic community of shared destiny. The major challenges of the ecological age—climate change, biodiversity loss, environmental degradation, and even the ethical implications of artificial intelligence—transcend national and cultural boundaries. They require humanity to think about its future from a broader planetary and even cosmic perspective. Chinese philosophy emphasizes the unity of Heaven, Earth, and the myriad things, while process philosophy stresses mutual immanence. Ecological civilization extends this consciousness to the entire community of life. As Zhang Zai states in the *Western Inscription*: “All people are my brothers and sisters; all things are my companions”⁴⁰ (民吾同胞，物吾與也).

This vision of cosmic concern, transcending both anthropocentrism and ethnocentrism, provides an important philosophical foundation for building not only a community with a shared future for humankind but also a broader cosmic community of shared destiny.

In short, a harmony-centered civilization is not merely a philosophical ideal; it is a civilizational practice oriented toward the future. By rebuilding harmonious relationships between humanity and nature, among human beings, between individuals and society, and within the human person, it offers new possibilities for overcoming the ecological, social, and spiritual crises of our time. It also provides a solid value foundation for the construction of ecological civilization.

³⁹ World Health Organization, “Mental Disorders,” fact sheet, September 30, 2025.

⁴⁰ Zhang Zai, *Collected Works of Zhang Zai*, 62–63.

Conclusion: From Survival of the Fittest to Survival of the Harmonious

If the First Enlightenment sought to answer the question, “How can human beings attain freedom?”, then the Second Enlightenment seeks to answer a different question: “How can free individuals learn to live in harmonious coexistence with others?”

If the civilizational code of industrial civilization is “survival of the fittest,” then the civilizational code of ecological civilization is survival of the harmonious.

“Survival of the fittest” reveals one dimension of life—the dimension of competition. Survival of the harmonious, however, reveals another dimension—the dimension of creativity, cooperation, and symbiosis. The former explains how life survives; the latter explains how life flourishes.

In the face of ecological crisis, social fragmentation, and spiritual disorientation, humanity’s hope does not lie in who can defeat whom. Rather, it lies in learning how to flourish together with others, with nature, and with the world.

The transition from a competition-oriented civilization to a harmony-oriented civilization, from survival of the fittest to survival of the harmonious, and from anthropocentrism to the consciousness of a community of life constitutes the historical mission of the Second Enlightenment. It is also the choice facing humanity in the age of ecological civilization.

Only through such a transformation can humanity truly realize the ideal of “preserving and integrating Great Harmony”⁴¹ (太和/*taihe*), and create a more beautiful future through harmonious coexistence among humanity, nature, and the myriad beings of the universe.

⁴¹ Zhou Zhenfu, *Annotated Translation of the Zhouyi*, 12.

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