

Green Transition

Toward Ecological Civilization:

A Korea- US Dialogue

한국사회의 생태적 전환을 위한 국제 컨퍼런스

EcoCiv Korea Conference 2017

November 7 - 9, 2017

Claremont Graduate University

Organized by:

Towards Ecological Civilization (EcoCiv)

생태문명 프로젝트

the Center for Process Studies

Co-Sponsors include:

Claremont Graduate University, EnviroLab Asia, Institute for Postmodern

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**GREEN TRANSITION TOWARD ECOLOGICAL CIVILIZATION:
A KOREA-US DIALOGUE
November 7-9, 2017**

Our world is facing an unprecedented threat. If we have any hope of averting the predicted consequences of the climate crisis, we need radical change and we need it now. Making minor adjustments that maintain the status quo is not enough. Putting green paint on unsustainable practices is not sufficient. We need a “Second Enlightenment,” a new paradigm, a fundamental change of framework on which we can build a more sustainable and just world—an Ecological Civilization. Such radical civilizational change will require collaboration around a shared vision for the future, toward mutual flourishing; bringing together the best in theory and practice across all areas of society.

This fall, key leaders from Korea will gather in Claremont to collaborate with US leaders around the shared vision of an ecological civilization, and the steps needed to initiate the transition on a global scale. Participants represent leaders in national and local government, NGOs, universities, journalism, and religions. Each participant and key speaker brings a unique set of skills, experiences, and achievements, critical to ushering in a new ecological paradigm. Inspired and guided by the work of John B. Cobb, Jr. whose vision was at the heart of the 2015 Claremont conference “Seizing an Alternative: Toward an Ecological Civilization,” we will examine big ideas toward a new paradigm for the future and how this vision is already being actualized by scholars, activists, governments, and politicians, in Korea and beyond.

Perhaps most important, this conference will serve as a first step toward building a Global Network for Ecological Civilization—bringing people together from around the world to collaborate on this common vision. While the 2017 Claremont conference will focus on Korea and the US, the 2018 Seoul conference (in partnership with the City of Seoul) will focus especially on forming an active network in Asia, that includes Korea, China, and Japan.

What to Expect:

Transdisciplinary discussion: We will facilitate a transdisciplinary discussion among philosophy, economics, science, law, urban planning, cultural studies, and theology.

Comparative analysis: Through constructive dialogue, participants will be able to discuss core challenges and achievements, comparing and contrasting the best insights from leaders in South Korea, United States, and China.

Paradigm change: We will clarify the features of a new paradigm toward ecological civilization and how this new paradigm relates to specific issues such as climate change, city renovation, aging, economic growth, unemployment, etc.

Practical solutions: We will explore important strategies and practical steps that can be taken by universities, local governments, NGOs, and religious communities.

CONFERENCE SCHEDULE

NOVEMBER 7, TUESDAY

9:00am – 10:00am (Burkle 14, CGU)

Keynote Session

- Larry Schroeder, welcome from the city of Claremont
- John B. Cobb, Jr., Opening Address
- Kumsil Kang, Response

10:00am – 12:00pm (Burkle 14, CGU)

Ecological Civilization as a Paradigm Shift

Chair: Wm. Andrew Schwartz

- David Korten: “A Living Systems Paradigm”
- Kumsil Kang: “Earth Jurisprudence, A New Paradigm of Law and Governance”
- Philip Clayton: “Why We Need an Ecological Civilization”
- Wangjin Seo: “A New Paradigm in City Policy in Seoul: Moving Towards an Ecological Transition”

2:00pm – 3:50pm (Burkle 14, CGU)

A Vision Toward Ecological Civilization

Chair: Philip Clayton

- Gunna Jung: “What can Economics Do for Ecological Civilization?”
- Meijun Fan: “China’s Vision for an Ecological Civilization”
- Andrew Schwartz: “A Vision of Hope: The Ecological Civilization Alternative”
- Yunjeong Han: “Something the Artist Can Do for the Ecological Civilization”

4:00pm – 5:50pm (Burkle 12, CGU)

Values for an Ecological Civilization

Chair:

- Fr. Jaidon Lee: “The Environmental Movement in Korea and the Role of Religions”
- Ken Kitatani: “Yoko Civilization and Integral Civilization”
- John Becker: “*Laudato Si*’ and Values for an Ecological Civilization”
- Zack Walsh: “The Affective Ecology of Contemplative Cinema”

6:00pm – 8:00pm (Haddon, CST)

Reception Dinner

NOVEMBER 8, WEDNESDAY

8:30am – 9:00am (Burkle 12, CGU)

Claremont Colleges Feature Session

- Albert Park: EnviroLab Asia at Claremont Colleges

9:00am – 10:00am (Burkle 12, CGU)

Keynote Session

- Brian Swimme: Ecological Civilization and Evolutionary Cosmology
- Fr. Jaidon Lee, Response

10:10am – 12:00pm (Burkle 12, CGU)

Interdisciplinary Dialogue for Ecological Civilization

Chair: Dongwoo Lee

- Chul Chun: Gregory Bateson's Interdisciplinary Approach to Ecological Justice
- Sandra Lubarsky: Beauty and the Creation of Ecocivilizations
- Kyoung-min Lee: For the Ecological and Posthuman Intelligence
- Kiwon Song: Challenge of Life Science and Technology to an Ecological Worldview

2:00pm – 3:50pm (Burkle 12, CGU)

Politics and Policies for Ecological Civilization

Chair: Gunna Jung

- Jiye Shin: "Green Movement and Green Party"
- Andy Shrader: "Los Angeles Mobilization Efforts"
- Zhihe Wang: "Ecological Drive in China"

4:00pm – 6:00pm (Burkle 12, CGU)

Toward an Ecological Transition in Cities

Chair: Wm. Andrew Schwartz

- Eugene Shirley: Activities of Pando Populus
- Gunna Jung: Some Ideas for Urban Ecological Transformation: The Experience of the Regional Cooperation in the Northeastern Areas in Seoul
- Adam Lane: LA City Business Council
- Freeman Allen: Sustainable Claremont

6:00pm – 8:00pm (Haddon, CST)

Next Steps: Ecological Civilization in Korea

- *Wonsoo Park, Mayor of Seoul (video message)*
- Roundtable Discussion: This roundtable discussion will explore strategies for transitioning toward Ecological Civilization in Korea including 2018 Seoul Conference and beyond. Participants includes representatives from The Center for Process Studies, Toward Ecological Civilization, Pando Populus, Ecological Civilization in Korea, LA City and Los Angeles County, People for Earth Forum, Post-Human Research Team, Seoul Metropolitan City, Green Party of Korea, and Kyunghyang Daily News

NOVEMBER 9, THURSDAY

8:30am – 10:00am (Burkle 14, CGU)

Education for Ecological Civilization

Chair: Wm. Andrew Schwartz

- Marcus Ford: Thirteen ideas that Universities Cannot Discuss
- Jay Jones: STEM Education and Ecology
- Mijung Im: Arts and Ecology: Case Studies in Korea

10:10am – 11:45am (Burkle 14, CGU)

Ecological Civilization in Practice

Chair: John Becker

- Maryknoll Sisters: Bringing *Laudato Si'* Down to Earth
- Pilgrim Place: Gail Duggan
- Lissa McCullough: Soleri's Concept of Arcology
- Jiyeon Park: Ecological Design of life for the Ecozoic Era: Poverty Amidst Plenty by alienation of nature

END

<Opening Address>

Ecological Civilization in Korea

John B. Cobb, Jr.

Founder of The Center for Process Studies
at Claremont School of Theology

I am deeply grateful to be invited to speak about ecological civilization at a conference initiated by Koreans. This is one more sign that the phrase is catching on and naming well what so many of us hope for. If people with differing special interests can recognize that their deeper goal is much the same, they can find themselves working together with a great multitude of concerned and committed people. Together we can do much more than we can accomplish separately. And if all those who want that kind of future join in supporting suitable action by governments, the control of governments by narrow economic interests could be ended.

President Xi of China has done more than anyone else to introduce the idea of “ecological civilization” and to begin to actualize it. In his recent speech to the important gathering of leaders of the Communist Party, he reinforced this goal. I was delighted. He certainly understands that this goal affects every program and policy. It is not segregated from other concerns.

Nevertheless, it is clear that it does not function for him in an inclusive way. The civilization he seeks for China has several other characteristics alongside being “ecological.” He understands the elimination of poverty as a distinct goal of at least equal importance. I think all of us will join him in emphasizing the importance of eliminating poverty. All the goals he mentions in his speech are admirable.

However, I regret that he is not developing the idea of ecological civilization so that it includes the goal of eliminating poverty. As I will explain more fully later, for me, if China becomes an ecological civilization, it will become also a community of human persons. To whatever extent a group of human beings is a community, all are responsible for all. All want all to have at least the minimum physical conditions for life with dignity. Of course, some may have less than others, even much less. But none will be demeaned or lacking in what is necessary for life with dignity.

Xi’s use of the term “ecological civilization” to focus on the relation of civilization to its natural context is understandable and in the context of his speech harmless. Still I hope that we can use the term in a broader, indeed and all-inclusive sense. I believe that Koreans will benefit from this choice.

Further, my feeling about Koreans is that there may be a shorter distance for them between identifying goals and actualizing them than is common in the world. If Koreans decide they want to work

together for ecological civilization, I believe that the results would begin to show rather soon. So, thank you.

Part of what is needed in order that Koreans, or any other people, move from idea to actualization is clarification of the idea. When the Chinese wrote “ecological civilization” into their constitution as China’s goal, one reason there was little opposition was that many who agreed to it thought it was all about the distant future, that it had no immediate implications. Many Chinese thought that this was a “post-modern” goal, meaning that it would become relevant to current action only after China had finished the process of modernizing. That, of course, might be never.

Whether this was all that was meant became a very practical issue. Many Chinese who voted for the general idea of “ecological civilization” pushed ahead on modernizing agriculture. Modernizing meant industrializing. China was following the United States in replacing people and animals with machines and petroleum. Thousands of villages would be demolished.

Other Chinese were distressed by this move, but their opposition seemed to many to be simply traditional resistance to progress. There was real possibility, indeed it felt like probability, that after affirming the goal of ecological civilization China would develop a very unecological agriculture.

We who dreaded this development persuaded the government that completing the modernizing project would make it impossible for China ever to achieve an ecological civilization. The rural policy of China shifted from modernization to an authentic postmodernization. Preserve the villages, but develop them! The ideal of ecovillages is now lifted up. Of course, to aim at thousands of eco-villages and to achieve such an end are two quite different matters, but they are certainly not unrelated. “Progress” is redefined, and there has been progress. This shift of policy illustrates for me the practical meaning of aiming at becoming an “ecological civilization.”

Nevertheless, this term evokes smiles from some who think it is a contradiction in terms. They rightly note that civilization is, at its heart, an imposition on natural ecosystems, forcing them to produce what humans -- in particular, powerful humans -- want, rather than what fits the needs of natural systems. In a healthy eco-system, each entity both takes and gives, and the whole achieves an ever-enriching process. Soil grows richer and, also, deeper. Both predators and prey become stronger and faster. But when humans extract what they want from the system without much return, and when they modify and remake the system to increase its production of what they want, more and more of what is produced ends up as waste. Human farming typically impoverishes and reduces the soil. Domestication of animals for human use typically degrades them.

Being ecological suggests to some that we leave the natural system alone. It is an exaggeration to think that hunting and gathering societies were fully ecological in this sense, but it was civilization that

for the first time inherently identified human flourishing with the distortion of nature away from its natural condition. So how can there be an “ecological civilization?” The phrase seems oxymoronic.

Therefore, as one who affirms the goal of “ecological civilization,” I would like to spend a little time examining its meaning. The noun is “civilization”. That makes explicit that we are not proposing a return to pre-civilized cultures. We join with those civilized people who have finally come truly to appreciate the wisdom of our ancient ancestors in taking natural ecologies as their context. But we do not join those who seem to want to turn the clock back. Civilization involved great gains as well as great losses. A society that is not civilized would be unable to support more than a small fraction of the current human population. We are committed to remaining civilized. Indeed, we need to become more civilized.

Still, becoming an ecological civilization will be a truly drastic change. Although some civilizations have adapted to nature better than others, there have been no ecological civilizations. Far Eastern civilization, including much of its farming, have been unusually sustainable. China, Japan, and Korea have much to brag about. There is land that has been farmed for thousands of years and continues to be productive. We hope that China has decisively determined to build on the wisdom preserved in its village farming, rather than replace it with “modern” equipment and methods. We strongly recommend the preservation of sustainable agriculture wherever it may be found.

But more is required for rural China to become an ecological civilization. For thousands of years, with rare exceptions, the relations between most of the farmers and the powerful few have been thoroughly hierarchical. At least for me, the idea of an ecological civilization requires not only that humans establish a sustainable relation to the rest of the natural world but also that human society become ecological in its internal relationships. Explaining and developing this aspect of the term is now, at best, work in process. I want to be part of that process.

Given that we are committed to civilization, and that civilization entails something other than allowing nature to follow its own course, what is required? What is required is that the creative and structuring capacities of humanity be turned to finding ways of acting and organizing that fit into the wider system of the natural world on a sustainable basis. The eco-village movement illustrates this. It seeks to learn from nature how to fit into nature while securing the needed services from nature. In China it has been connected with a revival of classical Chinese thinking. Daoism, especially, called for humans to become part of nature rather than trying to be its masters. We can learn from that without ceasing to take actions that direct nature to meet our needs. So, one major element of ecological civilization is to cease learning how to exploit nature with the least cost to us and, instead, learn how to cooperate with nature in meeting our needs.

The term “ecological civilization” has other meanings as well. It points toward complex relationships of interdependence. A human society needs not only to have complex relationships of interdependence

with other parts of the natural system. It is also important that there be complex relationships of interdependence among the people who make it up. There are no hierarchical relations within an ecosystem. Certainly, some creatures are more powerful than others. But this does not lessen their dependence on the others.

Obviously, there are many characteristics of a natural ecology that cannot and should not be copied in a human society. For example, the predator/prey relation is an important contributor to most ecological systems. Humans, as a whole, certainly function as predators in relation to other species, but it is not a desirable model within human society.

Within the human society, the ideal largely accepted in the Far East is “harmony.” I think it works better than the Western term “justice”, although we must not leave that out. My choice of language with which to work in developing the societal implications of “ecological civilization” is “community.” A healthy human community resembles a natural ecosystem in that it includes all sorts of conflicts and tensions, but at a deeper level is harmonious. If it also relates harmoniously to its nonhuman environment, we have one good way of understanding what an “ecological civilization” would be.

Every member of a healthy community has some responsibility for every other member. That is obvious in the nuclear family and with some reduction of responsibility, in an extended family. In a healthy village, all villagers do feel some responsibility for one another.

In my view of a community, every member has a respected role. Some roles carry far more authority than others, but every voice is listened to and taken seriously. The decisions of the community can rarely please all, but they reflect some attention to the concerns of all.

It is obvious that these conditions can be met best in fairly small groups of people. When large numbers of people are involved, the reality of primary community is necessarily attenuated. In terms of democratic processes, at a national level, people typically elect people they do not know to represent them, and they are often deceived about the real intentions and commitments of those they elect. A less frequently employed method is to limit communities to places where some face to face contact is possible and most people are fairly well acquainted with those they choose to make decisions.

This then requires that those who represent the small communities meet in relatively small groups, within which there can be some personal relationships with representatives of other groups to select representatives to the next higher level. This reflects thinking about communities of communities of communities.

There are also communities based on shared interests and needs other than the political ones. How these communities best relate to one another and to the political ones is important. Hopefully, as most people find themselves in multiple communities and communities of communities, the tendencies to excessive commitment to any one can be checked. Also no one community is responsible for the full

development of the capacities and interests of any individual. It is to the interest of all that each sees its work as being supported and enriched by all the others. Thus, the idea of “harmony” seems supreme.

A society in which each person has a respected, even if lowly, place, where all are the responsibility of all, and where all are heard, even when their choices are overruled, inherently avoids the worst forms of injustice. But there is no guarantee that all will get their fair share of whatever “goods” are distributed – much less that all will get what each considers his or her deserts. Strains and stresses will be lessened if all are encouraged to care about the harmonious functioning of the whole. On the other hand, the goal of justice for all in every respect should never be forgotten. A harmony achieved by silencing those who are unjustly treated is not real harmony.

I have written as if within the human community the important relations were those among people. They are certainly important, but unless individual people also feel deeply related to the other creatures with which they co-constitute the total eco-system, it is unlikely that the society at a whole will achieve or sustain a healthy relation to the environment. The term harmony can be extended here to a harmonious relation with the natural world.

Perhaps the most important questions about an ecological civilization are economic. Indeed, for me it has been the economics of global capitalism that has been the greatest stimulus for seeking an alternative. Almost every aspect of American society is now organized in the service of money. One teaching of Jesus that rings truer and truer as time goes by is that one cannot serve both God and money. Clearly the United States has chosen money. I feel called to imagine a society in which the economic life was in the service of God. To me that means that it would be in the service of the flourishing of God’s creation -- life in general, and especially human life.

Today there is talk of the economics of happiness. We need a great deal more talk and reflection about what, in any particular society, it would mean to organize the economy in the interest of the flourishing of living things. To do so would not mean just the same thing in China as in Bhutan. I challenge you to begin to think seriously what it would mean in Korea.

I will make some very general comments. We are social beings, and a healthy society supports communities of all kinds. For individuals to flourish, they need to be part of communities. If we ask about how the economy can support communities, we will focus on the geographically defined communities so important for political life. Currently healthy communities all over the world have been destroyed in the interest of increasing production. This increase of production is supposed to increase the consumption of the poor and the accumulated wealth of the rich. That is its goal, and it is sometimes successful on the former, always on the latter. But it is not clear that its success makes many people happier, whereas it *is* clear that its success damages psychological health and increases stress and loneliness. It is also clear that it disempowers local communities from controlling their own lives.

Perhaps most important, even if its strengths were far more impressive than they are, it is radically unsustainable. A society organized to promote “sustainable growth” cannot succeed. When growth is understood, as now, in quantitative terms, global “sustainable growth,” is an unqualified oxymoron.

Perhaps the first requirement of any move toward ecological civilization, is for the region that seeks this goal to take control of its own economy. In much of the world, including the United States, this alone would be revolutionary. It would mean transferring the creation of money from the Federal Reserve, largely controlled by the financial institutions, to the Treasury Department. It would also encourage state and municipal banks. If this ended the control of Wall Street over our politics, we could have governments concerned for ordinary people and their wellbeing and free to act on this concern.

The government could pay off the national debt, give us all good health care, greatly improve our infrastructure, etc. It could also abandon the goal of policing the world and effecting regime change in countries that resist being controlled by our banks. Our national policies could encourage the production of the goods we need in decentralized ways throughout our country. Many goods would cost more, but more people would have the money to pay for them. The goal would be to reduce the need for goods, especially fossil fuels, rather than to make them cheaper.

Of course, this is a bare beginning of reflection on the economics that would support ecological civilization. It is enough, I suspect, to make clear that it would meet enormous resistance by those currently in power in the United States. However, something like this is already embraced in Bhutan, and the government of China is not threatened in the same way as in the United States. I think that endless economic sanctions have driven North Korea in this direction of self-control and self-sufficiency, although American imperialism has forced it to spend far too much of its resources on its military. I know far too little about South Korea to comment on what is possible there.

Herman Daly and I wrote the book that is entitled “For the Common Good” with the idea of calling it “economics for community.” We were very pleased with the emergence of Europe as a community of nations. I believe it could have been a model for the world. Nations that had something of the character of community for their citizens took on the character of being a community of communities. If they had then organized their financial system to serve this community of communities, I would still be pointing to the European Union as a great achievement in the service life.

However, we were distressed when the European Union adopted a common currency. This radically disempowered its members. The individual countries could no longer make their own decisions about serving their citizens. They became servants of the financial institutions that created the Euros. We saw what happened recently to Greece when the government wanted to serve its people rather than the European financial institutions. When Greece ceased to control its own money, it had surrendered its sovereignty to the banks. The government had to obey them rather than its own people.

I hope you understand that for a geographical region to control its own economy is not in itself an ecological economy. It is a necessary condition but by no means a sufficient one. Even in a small region everything else may be put in the service of economic growth. My point is only that if a state has control of its economy it *can* use the control for the sake of its local ecosystems and especially the people who live there. In other words, it can experiment with its economy with the goal of ecological civilization in view.

I will conclude with a few words about education. How we educate our children has a more direct effect than the economy on whether we as individual persons come to experience ourselves as a distinctive part of a nature to which we owe a great deal or see nature only as something to be manipulated for our benefit. It also has a great deal to do with whether we feel ourselves a part of a human community that supports us, and through which we support one another, or see our goal as gaining individual advantage over others by getting good grades and passing exams.

East Asian countries have basically followed the West in giving centrality to learning enormous quantities of facts. Each student competes with all the others to pass an exam on which her or his future depends. This centrality of a particular exam is much worse in East Asia than in the West. This system may prepare students for the competitive individualism of capitalism, but in China, it certainly does not prepare them to build the socialist society they claim to want. And it works against the communities that are so important for an ecological civilization.

I consider that it does something even worse. It robs children of childhood. I am certainly not an authority on child psychology, but I cannot believe that the healthiest activity for a seven-year old is constant studying and schooling. It does not help that this is motivated by competition with all the other seven-year-olds for social and economic advantage.

This exam system fits well with the boast of our leading universities to be “value-free.” Of course, they do not mean that they do not have codes of conduct for students. They may be punished quite severely for cheating. But the instruction that constitutes the curriculum is value free. The primary meaning of those who celebrate this freedom from values may be a good one: they claim to approach the facts without bias. But it also means that they lack any concern for the needs of the world or even the needs of their students. Courses are designed in terms of the norms of the disciplines or the guilds that control them. These pay very little attention to the crisis that threatens the habitability of the planet.

Of course, decisions are never free of all values. When they are free from any responsibility for the wellbeing of society or particular people within it, the value that takes over is money. Universities attract students by encouraging them to think that a degree will improve their income. Universities support their faculty in doing the research for which the military or the corporate world will pay them. So far as the

content of academic courses is concerned, other values are not to be affirmed. We should not be surprised that nihilism on the one hand, and greed on the other, seem to play an increasing role in society.

If we want to move toward an ecological civilization, every aspect of the educational system needs to be reconsidered. The values of binding relationships and mutual care need to be celebrated. Also, the individual courage to challenge established practices that block true progress should be encouraged. The horizon of concern should be widened while the experience of community should communicate the great importance of personal relationships. The distinction between information and wisdom should be made manifest.

There is, of course, a great deal more to be said about education, and there are many other fields and topics in which deep change is needed. If what I have said stimulates you to think, even if your thinking leads to quite different conclusions from mine, I will be honored and pleased.

November 7, Tuesday

Session 1: Ecological Civilization as a Paradigm Shift

The global economy, which exploits the resources of the planet and aggravates the polarization between rich and poor, has brought serious problems of alienating nature and at the same time, the vast majority of inhabitants, including human beings. We all want the radical change, but most of us fear for the change, and even in some cases, we easily think some changes are impossible. We need a grand dream of ecological civilization. There are some fundamental questions we need to ask to ourselves. Why do we need a change toward ecological civilization and how urgent these changes are? What are the economic systems we have had and the economics that has fueled the industrial civilizations for hundreds of years? How have the anthropocentric view and materialism misled the civilization? How should the cosmopolitan cities change?

Earth Jurisprudence, A New Paradigm of Law and Governance

Kumsil Kang

Senior Partner of One Law Partners

Former Minister of Justice

1. Unfolding of Earth Jurisprudence

A good point in time to take a look into the development of Earth Jurisprudence would be the year 2015. It was a historically remarkable year in terms of ecological progress. Three important events took place.

In July, Pope Francisco announced *Laudato Si*, the encyclical on how to care for our common home, the Earth. In September, the United Nations adopted the 2030 Agenda for Sustainable Development. In November, representatives of 196 parties met in Paris for the Climate Change Conference.

The UN Sustainable Development Goals that contains 17 goals with 169 targets, has been influencing many countries including South Korea as a new principle of governance. In particular, the Goal 12. for the purpose of ensuring sustainable consumption and production patterns outlines in Target 12.8 “sustainable development and lifestyles in harmony with nature.” Since then, from 2016, UN has initiated interactive dialogues on Harmony with Nature addressing Earth Jurisprudence. This has helped Earth Jurisprudence become an important subject in sustainable development.

With Earth Jurisprudence coming into the picture, the UN Sustainable Development Goals points to a possible future in which the paradigm can shift. In the new paradigm, Earth is the primary and humans exist in a mutually enhancing relationship with it.

For Earth Jurisprudence to have risen to such a status, Thomas Berry (1914-2009) and The Gaia Foundation based in the UK, have played a major role. In 1996, Thomas Berry, the father of Earth Jurisprudence, met the founders of the foundation for the first time. He had been developing the concept of a new jurisprudence. In 2001, the first Earth Jurisprudence Conference was held in Airlie initiated by Thomas Berry and the foundation.

Since then, many more conferences and meetings have been held with experts from the UK, Canada, Columbia, Brazil, India, Africa and Australia participating. It has now spread to many locations around the world and sprouted in various forms such as Jurisprudence Center, Earth Law Alliance and educational institutions.

In South Korea, People for Earth Forum was founded in 2015 for the purpose of research and education in pursuit of ecological civilization including Earth Jurisprudence. The forum began an ongoing

lecture series on Earth Jurisprudence for legal attorneys. In April, 2016, on Mother Earth Day, it published the Korean translation of the book *Wild Law: A Manifesto for Earth Justice* by Cormac Cullinan, a South African lawyer who had met Thomas Berry at the Airlie Conference. Sponsored by The Gaia Foundation, *Wild Law* was the world's first book on Earth Jurisprudence.

2. The Principle of Earth Jurisprudence

Earth Jurisprudence was proposed as a new paradigm of jurisprudence from the beginning of 21st century. Its central idea is the change of worldview from anthropocentric to earth-centric.

To look at its origins, Thomas Berry points to three principles of Great Jurisprudence in *The Universe Story* (co-authored with Brian Swimme, 1992), which are differentiation, autopoiesis (self-organization) and communion. Autopoiesis, in particular, is directly related to subjectivity in law. In *The Great Work* (1999), he reiterated that “Earth is a communion of subjects,” rather than a collection of objects.

In the first Earth Jurisprudence meeting called Airlie Conference held in 2001, he announced the ten principles of jurisprudence.¹ There are three main points which are “the right to be, the right to habitat, and

¹ 1. Rights originate where existence originates. That which determines existence determines rights.

2. Since it has no further context of existence in the phenomenal order, the universe is self-referent in its being and

3. The universe is composed of subjects to be communed with, not objects to be used. As a subject, each component of the universe is capable of having rights.

4. The natural world on the planet Earth gets its rights from the same source that humans get their rights: from the universe that brought them into being.

5. Every component of the Earth community has three rights: the right to be, the right to habitat, and the right to fulfil its role in the ever-renewing processes of the Earth community.

6. All rights are role-specific or species-specific, and limited. Rivers have river rights. Birds have bird rights. Insects have insect rights. Humans have human rights. Difference in rights is qualitative, not quantitative. The rights of an insect would be of no value to a tree or a fish.

7. Human rights do not cancel out the rights of other modes of being to exist in their natural state. Human property rights are not absolute. Property rights are simply a special relationship between a particular human ‘owner’ and a particular piece of ‘property,’ so that both might fulfil their roles in the great community of existence.

8. Since species exist only in the form of individuals, rights refer to individuals, not simply in a general way to species.

9. These rights as presented here are based on the intrinsic relations that the various components of Earth have to each other. The planet Earth is a single community bound together with interdependent relationships. No living being nourishes itself. Each component of the Earth community is immediately or mediately dependent on every other member of the community for the nourishment and assistance it needs for its own survival. This mutual nourishment, which includes the predator-prey relationship, is integral with the role that each component of the Earth has within the comprehensive community of existence.

the right to fulfil its role in the ever-renewing processes of the Earth community.” The essence of Jurisprudence is that the focus is placed on the rights of Nature. In *The Liberation of Life* (co-authored with Charles Birch, 1990), John B. Cobb also emphasized that “all things have a right to be treated the way they ought to be treated for their own sake.” These statements are all based on the continuity and integrity of all beings in the universe. Just as human dignity became the basis of human rights as a countering concept against genocide witnessed in the 20th century, Earth Jurisprudence became the basis of rights of Nature as a countering concept against ecocide in the 21st century.

In *Wild Law* (2002), Cormac Cullinan describes Earth Jurisprudence as a philosophical and theoretical basis for an earth-centric governance system. He states that Earth Jurisprudence can vary for each society, but have common elements. These common elements should include ‘a means of restraining humans from unjustifiably preventing non-human members of the Earth Community fulfilling their roles, an approach to condoning or disapproving human conduct based on bonds that constitute the Earth Community and a concern for dynamic equilibrium between all the members of the Earth Community.’

In the UN Harmony with Nature Virtual Dialogue 2016, over 120 Earth Jurisprudence experts from 33 countries addressed Earth Jurisprudence from the following eight disciplines: Earth-centered law; ecological economics; education; holistic science; the humanities; philosophy and ethics; the arts, media, design and architecture; theology and spirituality (Para. 8).² They suggested Earth Jurisprudence as a holistic system of governance to replace current anthropocentric worldview (Para. 15). They also formulated philosophical and ethical principles of Earth Jurisprudence under four main principle: subjectivity; community; lawfulness and order; wildness (Para. 20).

Further on, the experts mention ecocentric democracy as a means of governance from an Earth Jurisprudence approach which can be defined as follows: “Groups and communities using decision-making systems that respect the principles of human democracy while explicitly extending valuation to include the intrinsic value of non-human Nature, with the ultimate goal of evaluating humans wants equally to those of other species and living systems that make up the Ecosphere” (Para 24).

10. In a special manner, humans have not only a need for but also a right of access to the natural world to provide for the physical needs of humans and the wonder needed by human intelligence, the beauty needed by human imagination, and the intimacy needed by human emotions for personal fulfillment.

² United Nations General Assembly A/71/266, 1 August 2016 (Harmony with Nature: Note by the Secretary General)

In the Virtual Dialogue 2017, it is recommended that Earth Jurisprudence principles should be applied in the implementation of all the seventeen Sustainable Development Goals, “given the fundamental interconnections between humanity and Nature” (Para. 4).³

3. Legislation Cases on Granting Rights of Nature

All around the world, there have been cases where Earth Jurisprudence have been exemplified. Nature is enshrined in the constitution and a river is given the same rights as a person. In September, 2008, Ecuador became the first country to recognize the rights of Nature in its constitution. In the preamble of the revised constitution, it is decided that the people of Ecuador are to “build a new form of public coexistence, in diversity and in harmony with nature, to achieve the good way of living.” Chapter 7, Article 71 states that Nature has “the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structure, functions and evolutionary processes.” In addition to recognizing the rights of Nature, Chapter 9, Article 83 specifically commands legal responsibilities of the people. They have ‘the duties and obligations to respect the rights of nature, preserve a healthy environment and use natural resources rationally, sustainably and durably.’

Another case in which the rights of Nature was recognized is the Whanganui River. Whanganui River is the third largest river in New Zealand located on the North Island. For the last 150 years, the Maori people have been fighting to attain legal rights for the river, and on March 15, 2015, New Zealand Parliament passed the bill that granted the river legal personhood status.

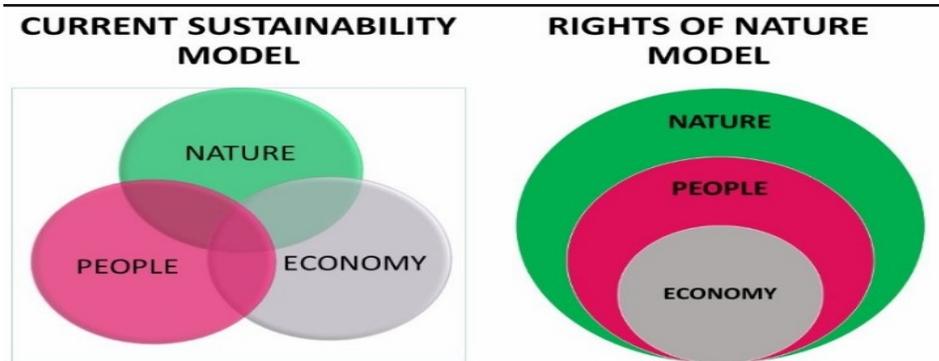
During a time of political turmoil for South Korea which resulted in the president’s impeachment, the Special Committee of Constitutional Revision was established on January 14, 2017. In April, 2017, thirteen selected committee advisors submitted a report to propose the following amendments in the environmental rights section: in Article 37, ‘that every life being shall be respected and it shall be the duty of the State to provide appropriate laws.’ Professor Taehyun Park, Director of Earth Jurisprudence Academic Society, People for Earth Forum, provided the draft for the aforementioned article. If this revision takes place in June 2018, it would mark a significant step in Korea's history.

4. An Overview of Earth Jurisprudence

The following diagrams show the two different models of relationship between nature, people and economy. The diagram on the left is the 'current sustainability model' in which nature, people and

³ United Nations General Assembly A/72/175, 19 July 2017 (Harmony with Nature, Report of the Secretary General)

economy exist independently with some parts overlapping. By contrast, the diagram on the right shows a 'rights of nature model'. It shows that economy and people can only exist within nature.



Source: Nature's rights: a new paradigm for environmental protection by Mumta Ito, ECOLOGIST (May, 2017)

The goals and principles pursued and directives put forward by the UN are closer to the diagram on the left. Whereas, Earth Jurisprudence is the basis for the 'rights of nature model' on the right.

In addition to Earth Jurisprudence becoming one of the subjects in the UN Sustainable Development Goals in the recent decade, the rights of Nature have become recognized throughout the spectrum of legal bindings including constitutions, national laws and municipal ordinances. It may be an unassuming start, but it is one that has the potential to bring a paradigm shift in law and governance systems.

Accepting Nature as a subject means that it cannot be mistreated, harmed, or damaged. So the Earth community as a “communion of subjects” must be built based on a dynamics of trust and respect. In this community, the role and attitude of humans must change from that of a governor or a controller to that of an advocate. Then, in the end, the question lies in how we interpret the intentions and needs of nature if we are to recognize Earth as a subject. It is important that the rights of Nature are not only recognized, but it goes further to be applied in all facets of the human society.

In the 2017 Interactive Dialogue of UN, Dr. Klaus Bosselman of University of Auckland, suggested a forum for a high-level dialogue promoting nation-States as trustees of the Earth and that this Earth trusteeship was a fundamental idea of Earth Jurisprudence.⁴ He urged international community to think beyond the paradigm of sovereign nation-state and that despite the conservative nature of United Nations systems, this new system should be considered.

Earth Jurisprudence is the principle that shows the direction and value of what is the right way to inhabit the Earth, which is our common home for the fleeting duration of time that is given to each of us.

⁴ United Nations General Assembly GA/11909, 21 April 2017 (Meetings Coverage)

However, the momentum of technocratic paradigm is only growing. To change the direction of such a worldview, we need to reflect on the meaning of human existence as well as change the law and governance. In that light, a holistic picture is needed through interdisciplinary dialog and approach.

A New Paradigm in City Policy in Seoul: Moving Towards an Ecological Transition

Dr. Wangjin Seo

President of Seoul Institute

I would like to thank the organizers of the conference for inviting me here. I am deeply honored to introduce Seoul and the policy changes that were made towards the ecological transition. The speech will be in four sections. I will start with our understanding of ecological transition from the perspective of Seoul.⁵ The second section will be an overview of Seoul as a megacity at present and its recent past mostly led by the economic development paradigm. I will continue to explain how Seoul has reformed itself from an Aggressive Economic Machine to a Sustainable and Inclusive Community under the leadership of Mayor Park, Won-Soon since 2011. The last part of the speech will be about the gaps we found in order to make this great city more livable for all livings and future generations.

1. Our understandings of Ecological transition in the context of Seoul

After reading and discussing the works by John B. Cobb Jr. and listening to the speech by Jaidon Lee who attended the 1st workshop of “Seoul, an Ecological City,” I found the notion of Ecological Civilization (ECOCIV hereafter) diffusive yet radically reformative. During the group discussion, we talked about how “urban policy should not separate human beings from ecosystems by calling them the “environment,” and by positioning it outside the human community that is the city”, and “current problems and scientific facts require us to pursue a fundamental transition rather than an incremental amendment of the system”. This aspect of radical shift echoes with the explanations about the last and upcoming conferences on ECOCIV.

“We need “Second Enlightenment,” a new paradigm, a fundamental change of the framework on which we can build a more sustainable and just world—an Ecological Civilization”. (EcoCivKorea Claremont Conference, 2019)

⁵ The reason why I stress *our* understanding in the sentence is I am a member of a discussion group, titled “Seoul, an Ecological City”, that seeks for the collective learning on how to make Seoul more ecological and transitional. Funded by the Seoul Institute, ten experts agreed to join a series of workshops on Ecological cities and to apply ideas on the contexts of Seoul from September to December, 2017. Topics vary from Ecological Ethics, Sustainability, System Innovation Theory, Local Energy Transition, Vision and Backcasting plan, a list of required projects, policies for the future of Seoul.

“.....network to re-imagine civilization as ecological.....(Greene, H. on Seizing an Alternative: Toward an Ecological Civilization Conference” held at Pomona College, Claremont, California, June 4-7, 2015)”

Legacy of Whitehead’s work, recognized in the 2015 conference, “The common bonds were shared senses of the fundamental evolutionary and ecological nature of the universe, the fundamental failures of today’s globalized civilization, and the fundamental framework of process-relational understandings as the basis for reimagining and realizing a “civilization” for the entire community of life—an ecological civilization” (Op. Cit. p.6.)

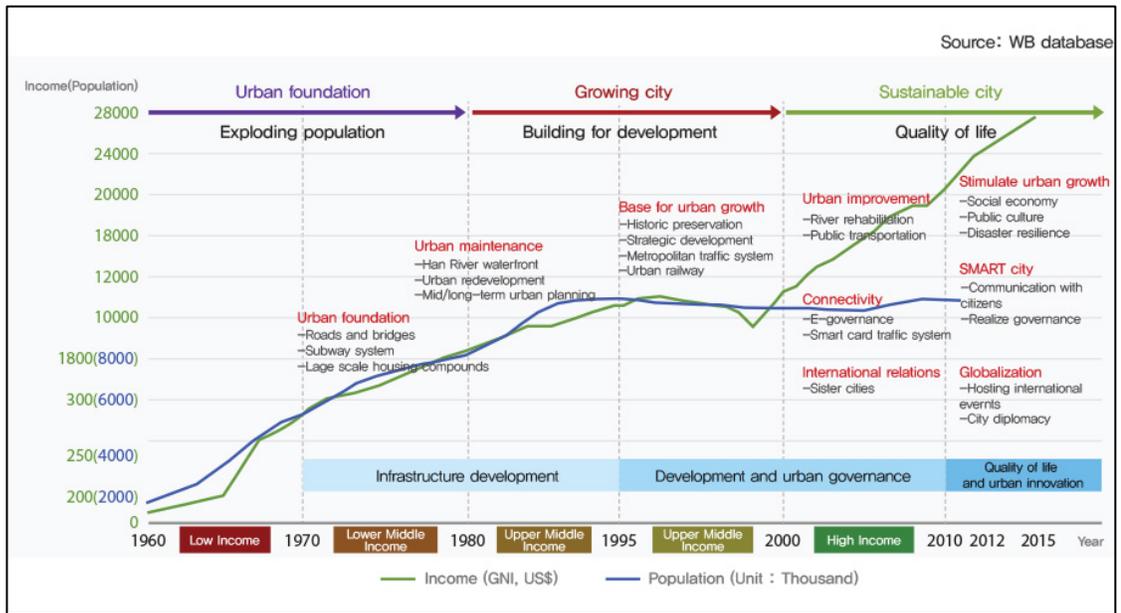
However, most of participants including myself were puzzled over how to proceed with the systemic transition in the context of Seoul. An expert who was confident in the mission of the ECOCIV asserted the education to grow ecological sensibilities and sensitivity. Some keywords and phrases raised during the discussion were *interconnectedness, knowing the consequences before acting, ownership of local natural resources as common capital, network, connectivity, community with its experiences and lessons learned.*

What dark path Seoul struggled to explore together with the participatory power of its citizens will be shared in the next section.

2. Seoul: overview and history of urban policy

- Developmental City: Seoul's near past

The urbanization of Seoul, to be precise, the sizing up of this 2000-year-old city has been coupled with the industrialization of the entire nation. This megacity, has been the capital since 1392, the beginning of the Chosun Dynasty. This metropolis occupies only 0.6% of the national territory in South Korea, but makes up 22% of the entire population.



(Source: WB database: cited from Seoulsolution.kr, accessed at September 29, 2017)

Figure 1. Seoul's historic graph on the stages of growth and development

Seoul has been growing in physical volume as the center of South Korea's aggressive and intensive economic growth since the 1960s. Some key features of its quantitative expansion, drawn from the Seoul Statistics (unless stated otherwise), are listed below:

- ♦ The population in 1960 stood at 2.45 million, but grew to 10.3 million by 2015. (about 421%)
- ♦ The population density per square kilometers in 1960 at 9,113 nearly doubled to 17,013 in 2015.
- ♦ "Seoul's population density is almost twice that of New York City, four times that of Los Angeles and eight times that of the density of Rome." (Seoulsolutions.kr, accessed at September 29, 2017)
- ♦ The number of registered vehicles in Seoul in 1960 was 11,422 but soared to 3 million by 2015.
- ♦ 232.4 GWh, electricity consumption in 1960 grew 195 times to 45,321.4 GWh by 2015.
- ♦ The number of houses in 1961 numbered 275,436, which only made up 56.8% of households in the city alone (Seoul Research Data, SI). At the present (2015), there are 3,633,021 houses, which are expected to support 96% of households. The percentage of apartments among housing types stood at a mere 4.1 % in 1970, but is estimated to be nearly 60% as of 2015.
- ♦ In total, as shown in the Figure 1, per capita income (green line) also surged from lower than 200 USD to nearly 28,000 USD in 2015.

- Key urban challenges Seoul has suffered

While the quantitative expansion of the city continues, Seoul also endures social and environmental problems.

- ♦ First, the rich natural ecosystem of ancient Seoul suffered from crude and destructive development until environmental policy was implemented in the 1980s. In particular, rapid urbanization and the expansion of built-up areas threaten ecosystems. Sitting at the shores of the Han river, being surrounded by two beautiful mountain ranges, Seoul also used to be rich in natural ecosystem.
- ♦ Second, the pollution problems of water, air and urban waste in the 1980s and 1990s demanded progress in environmental research and regulations, led by central and local authorities such as the Seoul Metropolitan government.
- ♦ Third, social conflict arose due to pollution and other environmental issues that also shaped current environmental policy and measures, led by the City of Seoul. Seoul shares the Han River basin with four other regional governments, further more with North Korea. Many pollution treatment facilities including the incinerators, landfills, managed by the city and county governments and the stakeholders such as citizens residing in the vicinity and adjacent regions in Gyeonggi province and Incheon.
- ♦ Social resilience received attention in the era of uncertainty, represented by planet-wide climate change. Related issues include income disparity among citizens and sub-city areas, generational conflict and hostile gentrification against community members during urban regeneration and so on.
- ♦ Lastly, given the weak level of social resilience in Seoul, and despite the technical, legal and governmental measures to tackle environmental issues, Seoul recently started to suffer from more comprehensive and complicated issues such as “safety fears.” Recent examples are the landslides in the Woomyeon mountains, flooding in the city center, sink holes in newly developed sites, the MERS outbreak and, most well-known, fine particle air pollution.

3. Shifts in the Paradigms of Urban governance in the face of urban challenges: a case study of Seoul case

Lower growth in economics and persistent urban challenges reshaped Mayor Park Won-Soon’s practices to become a more inclusive, safe and sustainable city. Those post-development attempts in Current Seoul since 2011 are represented in the levels of city governance visions and projects.

- Visions

The current vision of the Seoul Metropolitan Government, led by the Mayor Park is “Sustainable and Inclusive Development” (seoulsolution.kr, accessed at September 27, 2017). This vision contrasts to

previous leadership styles and urban policies, stressing city government as an entrepreneur, promoting economic growth as a first priority. There are further innovative directions raised in the visions of urban policy areas: housing, transportation, the environment, and women's rights and welfare (Op. cit.).

- ♦ Housing: "Co-habitation, Sharing, and Co-existence Lie at the Heart of Seoul's Housing Policies"
- ♦ Transportation: "Seoul – a People-oriented City of Sharing and Green Transportation"
- ♦ Environment: "A City of Peaceful Co-habitation of People and Nature"
- ♦ Women and Welfare: "Seoul's Unique Policies and Welfare for Women – the Driving Force behind Living a Better Life Together"
- ♦ Governance: "Citizens are the mayor" (English.seoul.go.kr, accessed at Sept. 20, 2017)

- Innovative initiatives in Seoul

When visions show the directions and principles of why to and what to aim for in the process of city governance, the projects or initiatives realize the former in the contexts of contemporary Seoul. At the same time, the initiatives are the results of the strong will of local politics within the limitations of available or mostly affordable resources. The key innovative initiatives are listed below:

- ♦ Local energy transition policy and practices- One Less Nuclear Power Plant (Stages 1 and 2),
- ♦ Living labs in Seongdae-gol (Community capacity building and energy transition experiment),
- ♦ Sharing City, Seoul, promoting common economy and world no.1 city for recycling,
- ♦ Residents' Participatory Budgeting system,
- ♦ Social innovation Camps,
- ♦ Promoting social economy,
- ♦ Walkable City project and
- ♦ Urban Farming/ Agricultural policy.

To name one, "One Less Nuclear Power Plant initiative" is regarded as "the very policy that makes sense to citizens when talking about interconnectedness and the problem of limited resources" (Jeong, comment at the 1st workshop of Seoul, an Ecological City, September 15, Seoul Institute). By saving energy consumption and transitioning to alternative energy, Seoul aims to achieve innovations in Seoul and beyond its territory. Through this initiative, Seoul can enjoy local system innovation, first, and then, to tackle climate change threats. Furthermore, Seoul can reduce its dependency of energy development and, at the same time, possible risk to bear due to current unsustainable nuclear power generation elsewhere. By acknowledging the costs as consequences drawn from urban policy, this initiative shows how energy generation and consumption activities can be led by not just by the government, but also by the residents of Seoul as well as the impact that people in Seoul can create within and beyond its

boundaries. The 1st stage (April 2012 ~ June 2014) saved 2 million TOE, equivalent to the amount of energy produced by one nuclear power plant (English.seoul.go.kr, accessed at September 10, 2017).

4. Conclusion: Research on what's next for Seoul

What we have accomplished so far was amazing, but there are gaps and more turns to make Seoul a more fundamentally and systemically ecological city. At the moment, we are still seeking answers as a group of people who study together to imagine Seoul as an ecologically transitioned city. In order to put forward the visualizing, making and realizing of dreams, we study system innovation theory and plan to figure out what obstacles are in the way and what opportunities are abound for the Ecological Transition. In addition, we will bring lessons learned from cases elsewhere: ECO-CIV in China, Transition movements and ICLEI declarations in the EU and Urban policy in Los Angeles. Through this exploration, we have to bring a clear direction for Seoul to progress from its current stage.

I believe we are close to the point of no return. I hope Seoul's experiences and ongoing initiatives contribute to the process of turning the old paradigm on cities into an entirely new system.

Session 2: A Vision Toward Ecological Civilization

Vision is very important for change. We can progress by sharing our vision. The vision of “Ecological Utopia” has been strong rival against industrial civilization for a long time, and now it is an alternative to declining capitalism. Marxism converts to ecology, while it reflects its own limitation that focuses on ruling nature, increasing production, and alienating most of human beings. In this context, China pursues “Ecological Civilization” and includes this agenda in the Constitution of Communist Party. Korean civic society also tries to connect many grass root movements and sustainable policies under big umbrella. Now, we anticipate to make the world network of ecological civilization.

What Can Economics Do for Ecological Civilization?

Gunna Jung

Professor of Economics at Hanshin University, Korea

1. Introduction

The economy or economists are often perceived as an obstacle to ecological transformation. It is true both in the real economy where many short-sighted stakeholders dominate investments and in mainstream economics where economists do not consider the depletion of natural resources. For the continuation of the ecological transformation, however, the economy is important and economics still serve a role. It is necessary for economics to present the necessity and urgency of ecological transformation and provide the alternative sustainable model of economy for the future generations.

The purpose of this presentation is to explore broadly the roles of economics for an ecological transformation. The presentation has three issues: I begin by confirming the urgency to restructure mainstream economics, then introducing an alternative solution. The second is to review positive roles of economic policy and economic indicators that are connected to strategic devices for ecological transformation. And the third is to outline key features of a new economics for Ecological Transition for the future.

2. Econocracy, Monopoly of Neoclassical Economics and Pluralistic Economics

We are living in a world of ‘econocracy’. An econocracy is ‘a society in which improving the economy has become the main purpose of politics’.¹

In this world, mainstream neo-classical economics has great academic influence, and mainstream economists exercise the power to control national policies as members of the dominant block of society. In this world, “if economists wished to study the horse, they wouldn’t go and look at horses. They’d sit in their studies and say to themselves, “What would I do if I were a horse?” The quote was originally by Ronald Coase, a Nobel Prize winner in Economics in 1991.² According to him, “over the years, Economics has become more and more abstract and divorced from events in the real world”, and economists “do not study the workings of the actual economic system”. Cambridge economist Ha-Joon Chang brilliantly debunked many of the predominant myths of neoclassical economics in his

¹ Earle, J., C. et. al. (2016) *The Econocracy: The perils of leaving economics to the experts*, Manchester University Press (November 3, 2016).

² In his famous lecture at the ISSNE (International Society of New Institutional Economics) conference in 1999.

bestselling “23 Things They Don't Tell You About Capitalism”. “It is not easy for economists to take off the sunglasses called "economics". But in ordinary people's eyes, the reality is visible. People just lack the ability to give a plausible explanation. Richard Tahler, the 2017 Nobel Prize winner in economics, must be one of the few economists to see reality with his own eyes. ‘He introduces all kinds of abnormal phenomena, which is a huge phenomenon that must be explained to economists, but it is just a routine for ordinary people.’³

The documentary film “*Inside Job*” (2010) is about the recent financial crisis in the U.S. The film won the 2010 Academy Award for Best Documentary Feature and shocked the world by showing the realities of irresponsibility and immorality in many of America's best-selling mainstream economists, raising concerns about conflicts of interest for economists in academia.

Mainstream economics, having abandoned the rich heritage of pluralism, can not be ‘a reliable compass’ that leads world to the right course. “We are almost blind when the metrics on which action is based are ill-designed or when they are not well understood.”⁴ Mainstream economics promotes an understanding of the world limited to a fixed set of models that are almost disconnected from the real world. Many important issues facing the world today, such as climate change and growing inequality, are either absent from most syllabi or taught in a way that is not based upon real world.

‘Pluralism in Economics’ is necessary because it provides different ways of thinking about economics. Economics is a broad and diverse discipline. Pluralism can provide a positive vision for how academic economics could become a bridge, not a barrier, to increase public participation in economic discussion and decision making. Pluralism is also necessary for future generations, both to enable critical thinking and to practice academic training. Historically, there has been diverse fruitful approaches to economics: Classical, Marxist, Post-Keynesian, Austrian, Institutional, Evolutionary, Behavioral, Experimental and Ecological economics.

In Korea, of the professors in economics, there are 437 domestic Ph.Ds. On the other hand, 1,122 professors received degree from abroad, and 840 among them in the United States (Professor Newspaper, dated April 25, 2016). Moreover, more than 80% of professors teaching at the major universities in Seoul have received degrees in the US.⁵ If they teach as they’ve learned at the universities in the U.S, students might not have a chance to encounter the abundance of pluralistic economic thoughts.

³ A Korean Economist, Taemin Jung’s Post on Facebook (Oct. 10, 2017).

⁴ Raworth K. (2017). Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist, Chelsea Green Publishing.

⁵ Interview with Prof. Myung-Gu, Kang (Sep.11, 2017)

3-1. Economics supporting Ecological transformation

Ecological Transition means that a society undergoes a full-scale change. Ecological transition is a process that involves a large number of stakeholders and many conflicts of interest. Therefore, well-organized strategies and thoughtful policies are necessary for implementation. In particular, the public sector, expert groups, and civil society should work together to lead this process. Ecological transformation is not a one-time process but an ongoing process of improvement and evolution. Therefore, it is important to make it easier for ordinary citizens, who have no significant empathy or deep understanding of the seriousness of the ecological crisis, to easily participate in this transition process through everyday decision making. For that, market and price mechanism, economic incentives play an important role.

If we want to make an ecological transition in the future, we need the help of economics. For ecological transformation, economics should contribute to the preparation of policies that change the direction of everyday economic choices. There are examples of economic approach that contribute to the ecological transformation and these contributions are mostly from empirical analysis using data rather than from theoretical discussions.

First, a group of economists estimated the cost of climate change and the consequences for human society when carbon dioxide emissions continue to be present. In 2008, an Australian economist, Graham Turner⁶ confirmed that the prediction of "the limit of growth" was correct by testing the fact that the real world has followed the "standard run" scenario from 1972". His paper focused on a comparison of collated historical data for 1970–2000 with scenarios presented in the Limits to Growth (the Club of Rome's report published in 1972). The analysis showed that 30 years of historical data compared favorably with key features of a business-as-usual scenario called the "standard run" scenario, which results in collapse of the global system midway through the 21st century. The Stern Review on the Economics of Climate Change is a 700-page report released for the government of the United Kingdom in 2006 by an economist, Nicholas Stern (chair of the Grantham Research Institute on Climate Change and the Environment at the LSE (London School of Economics)). Although this is not the first economic report on climate change, it is significant as the largest and most widely known and discussed report of its kind discussing the effect of global warming on the world economy.

Second, Costa Rica and Germany have achieved comparable ecological turnaround through policies using economic incentives. Costa Rica achieved notable improvements in sustainable development through a holistic approach and the inclusion of an eco-social criteria within their national development

⁶ Graham Turner (2008). "A Comparison of the THE LIMITS TO GROWTH with Thirty Years of Reality" (CSIRO Working Paper, June, 2008). CSIRO (Commonwealth Scientific and Industrial Research Organization) is an Australian Federal Research Institute.

plan since 1970s. In Costa Rica the law puts landowners under contract to manage or protect their forests for a range of five to 20 years, during which they are obliged to follow a management plan that applies to all future owners of the land. Carbon offsets and watershed protection certificates are then sold via the government to domestic and international buyers in order to compensate landowners.⁷ In Germany, twenty-five percent of electricity comes from solar, wind and biomass compared to just 6 percent in the United States. A third of the world's installed solar capacity is found in Germany. 65 percent of the country's total renewable power capacity is now owned by individuals, cooperatives and communities. In the case of Germany's astonishing energy transformation, it's all about policy, policy, policy."EEG (Energiewende: means Energy Shift).⁸

3-2. Behavior Economics: Nudge and Choice Architecture

US economist Richard Thaler (professor of the Chicago Booth Business School) has won this year's Nobel Prize in Economics. One of the Nobel prize judges (Per Stroemberg) said "Prof Thaler's work has explored how human psychology shaped economic decisions. It has paved the way for a new field in economics which we call Behavioral Economics". Prof. Thaler co-wrote the bestseller book "Nudge". The term "Nudge" was coined by the authors. Richard Thaler and Cass Sunstein defined the term as a choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives.

Behavioral Economics emphasize that policy should consider the irrationality of individuals' choices. Thaler's work led to the UK setting up a "nudge unit" under former prime minister David Cameron that was launched in 2010 to find innovative ways of changing public behavior with offices in the UK, New York, Singapore and Sydney.

On the normative side, behavioral modeling can help us design better institutions. Behavioral models of individual choice enhance understanding of the function of economic institutions. Therefore, designing institutions should take into account people's behavior, using "nudge" as the choice architecture is important and necessary in these regards.⁹ In reality, of course, we need more than nudges to avert the impending environmental crises. Prof Jeff French has suggested a Value/Cost Exchange Matrix framework that can be more effective while getting people to behave sustainably. We need smacks and shoves as well as hugs and nudges.¹⁰

⁷ Carmi Diletta (2016). Implementing Eco-Social Policies: Barriers and Opportunities: A Preliminary Comparative Analysis (UNRISD Working Paper 2016-12).

⁸ Davidson, Osha Gray. (2012). Clean Break: The Story of Germany's Energy Transformation and What Americans Can Learn from It (Kindle Edition).

⁹ P. Diamond & H. Vartianen (2012). Behavioral Economics and Its Applications, Princeton University Press (January 12, 2012).

¹⁰ Ameen, Minhaj (2014). Nudges are not enough for Environment Friendly Behaviour, (January 11, 2014)

4. Evolving Development of Economic index beyond GDP

In order to achieve ecological transition as a continuous process, it is very important to have a system evaluating the performance of transition policies. Quantitative indicators including economic indexes are prerequisites for transition management. However economic indicators should go beyond the limitations of GDP. One of the main proponents of GDP, Nobel Prize winning economist, Simon Kuznets was well aware of its limitations¹¹. The GDP indicator has intensified the ecological crisis rather than reflecting its true cost, and many people advocate for its replacement with an economic indicator that can be readily utilized.

In the early 1970s, William Nordhaus and James Tobin created a direct index of welfare, called Measured Economic Welfare (MEW). About twenty years later, Daly and Cobb developed an Index of Sustainable Economic Welfare (ISEW) to replace MEW. Lester Brown praised the index and recommended that the UN should use this indicator to accumulate the necessary data. The Genuine Progress Indicator (GPI), a version of the (ISEW) was estimated for several countries around the world and there are reports on its application at the city, county, and state levels in Vermont, USA.¹² In 2009, the Stiglitz-Sen-Fitoussi Commission submitted a report to the French President on the new measures of societal progress.¹³ This report says there is no single indicator that can capture something as complex as our society, so presenting multiple indicators separately by constructing a “dashboard” of indicators would be an option. However, it emphasizes that the construction of some simple aggregate measures can be extremely useful and, in that respect, there is a need for an “extended” or “adjusted” “GDP-like” measure. The report recommends continuing extensive discussions until there is a broader societal consensus either for an all-inclusive single indicator or for selecting appropriate indicators for a dashboard.¹⁴

Beyond-GDP indicators offer the possibility of constructing a new story of replacing our current growth model. They can help us to open up a new space for public action and democratic debate for a sustainable model of development. There are six countries or regions that officially adopted or plan to adopt beyond-GDP indicators: Australia set up Beyond-GDP dashboard comprising 26 dimensions (2002), Belgium ratified a law and aimed at developing indicators to complement GDP (2014), and U.K

¹¹ Report to the US Congress in 1934.

¹² Costanza, Robert et. al. (2003). Estimates of the Genuine Progress Indicator (GPI) for Vermont, Chittenden County, and Burlington, from 1950 to 2000.

¹³ Stiglitz, J et. al. (2009). Report of the Commission on the Measurement of Economic performance and Social Progress.

¹⁴ “Now we are subjected to hammer-banging, gong-clanging reports of hourly changes in the Dow Jones and Nasdaq stock price indices— numbers that are an order of magnitude further removed from either welfare or income than GNP is! GNP is backward-looking, a historical record of what has already happened. Since the past is better known than the future, GNP is inherently a more trustworthy number than stock market values.” (Daly Herman E. and Joshua Farley, Ecological Economics Principles and Applications Island Press,2004).

produced a comprehensive dashboard of Beyond-GDP indicators by Prime Minister David Cameron (2011).¹⁵

The notable Beyond-GDP indicator is the ‘System of Environmental Economic Accounting(SEEA)’ developed by the UN. The SEEA is a satellite system to the UN’s SNA (System of National Accounts) that calculates GDP. It is a framework to compile statistics linking environmental statistics to economic statistics. The SEEA EEA (Experimental Ecosystem Accounting) is a coherent and integrated approach to the measurement of ecosystems and the flows of services from them into the economy and other human activity. It provides a platform for the integration of relevant information on the ecosystem’s dimension, condition, services and capacity, with information on economic and other human activity and the associated beneficiaries (households, businesses and governments).¹⁶

By accounting for both of these components and presenting them in a single integrated model, key advantages accrue: First, a significant volume of data can be placed in context and integrated in both bio-physical and monetary terms. Second, issues of sustainability can be considered since the capacity of an ecosystem asset to deliver services is considered separately from the flows of ecosystem services themselves. It can also show the economic consequences of maintaining a certain environmental standard. Moreover, ecosystem accounting approaches are relevant to apply at the regional or lower levels.

In 2012, the United Nations Statistical Commission adopted the SEEA as a statistical standard. The European Statistical System as well as other countries such as Canada, Australia and New Zealand have collaborated for further development of the SEEA and the implementation of its framework, focusing on compiling statistics related to flows of materials, such as air emission, energy use, waste flows and water flows).

5. Toward a New Economy and New Normal Economics

We have entered an era of “New Normals”, not only in economy but in energy and climate as well. The implications are profound: The New Energy Normal: The era of cheap and easy fossil fuels is over, leading the industry to resort to extreme fossil fuel resources. The New Climate Normal: Climate stability is now a thing of the past. We must take dramatic steps if we hope to avoid raising global temperatures more than 2°C above pre-industrial levels. The New Economic Normal: We’ve reached the end of economic growth. Despite unprecedented interventions on the part of central banks and governments, the so-called economic recovery in the US and Europe has been anemic and has failed to benefit the majority of citizens.

¹⁵ Demailly, Damien (2015). Beyond GDP indicators: to what end? Brief for GSDR, 2015.

¹⁶ UNEP/UNSD/CBD (2015). Draft: SEEA: Technical Recommendations Consultation, Joint project on Advancing Natural Capital Accounting, December 2015.

Yet this new reality is still largely unrecognized, fundamental changes require unprecedented response. Topics that post-normal science approaches are located in the remotest quarter-circular zone among those of ‘Applied Science’, ‘Professional Consultancy’, and ‘Post-Normal Science’. Post-normal science claims relevance and cogency on issues with a fourfold challenge: uncertain facts, values in dispute, high stakes and urgent decisions.¹⁷

Those topics include offshore oil prospecting, aging populations, the reduction of agricultural greenhouse gases, and the balancing of economic growth and environmental sustainability.¹⁸

The implications of applying the Post Normal Science approach to economics can be framed in terms of both a critique of Econocracy and as a reaction against assigning economists a critical role in policymaking while marginalizing grassroots. Other implications of New Normal Economics include decentralization, dispersion, networking, and participation. This means that the economy, which depends on gigantic corporations 'Too Big to Fail' or ‘Chaebol,’ can never be an economic model for the next century. Rather, it is just the opposite. In fact, responding to each of “New Normals” requires one common strategy: community resilience. Building community resilience enhances the ability to address energy, climate, and economic crises all together at the same time. Social innovations that strengthen community resilience are cropping up in diverse forms: community-owned renewable energy production, sustainable local food systems, new cooperative business models, sharing economies etc.

There is historical evidence from the 19th and 20th century for the resilience of the cooperative business model. In the recent crisis, cooperatives were more resilient to the market shocks than other types of enterprises. Interest in the ILO is gaining momentum, driving an impetus to make the social economy part of a coherent development model that seeks convergence among social, environmental and community goals. The declaration of the UN International Year of Cooperatives 2012 shows that there is a growing consensus on this subject.¹⁹

Social economy based on local economies, with cooperatives or social enterprises as its main members is a laboratory to explore alternative practices for production, consumption, distribution. It is also a crucible where new rules can be developed that are more democratic and respectful of the needs of people and communities in perspective of sustainable development. The growth of the social economy over the last few years – in Québec Canada, in Mondragon Spain, Bologna province in Italy and many other places in the world – shows that it does not occupy a residual space between the market and state, but tends to become an integral portion of a plural economy. Therefore, imagining future economic

¹⁷ Miller, Asher and Rob Hopkins (2013). “Climate After Growth: Why Environmentalists Must Embrace Post-Growth Economics and Community Resilience.” Post Carbon Institute (Sept. 30, 2013)

¹⁸ Gluckman Peter (2014). "Policy: The art of science advice to government". *Nature*, 507.

¹⁹ ILO (2010). *The Resilience of Social and Solidarity Enterprises: the Example of Cooperatives*, Global Jobs Pact Policy Briefs, No.10.

systems based on social economy is not just ideals of the radical economists. According to the ICA report, in 2008, the world's largest 300 co-operatives generated revenues of USD1,600 billion, which is comparable to the GDP of the world's ninth largest economy.²⁰

Co-operatives play a role not only in leading the local economy but also in activities for sustainable development at a global level.²¹ One good example is the activities of Oxfarm, a UK cooperative, that works with the UN to provide a model for sustainable economic development. It presented a new alternative economy of human society in a doughnut-shape: The social foundation forms an inner boundary, below which are many dimensions of human deprivation. The environmental ceiling forms an outer boundary, beyond which are many dimensions of environmental degradation. Between the two boundaries lies an area – shaped like a donut – which represents an environmentally safe and socially just space for humanity to thrive in. It is also the space in which inclusive and sustainable economic development takes place.²²

The new economics should be reorganized in the direction of realizing this urgent ecological transformation and should contribute to strengthen the regional economy with self-sufficiency and resilience emphasizing the role and significance of the social economy.

6. Concluding remarks

Economic historian Karl Polanyi, in his book "The Great Transformation", refers to the dialectical process of marketization and the push for social protection against that marketization ('The Double Movement'). There was an international conference on Karl Polanyi in Seoul in October, 2017. In the session titled 'Karl Polanyi and Ecological Crisis', participants raised a concern that Polanyi's protective gear would not have enough time to start working on its own. When The Club of Rome and the Smithsonian institution²³ hosted a symposium on March 1, 2012 to celebrate the 40th anniversary of the launching of Limits to Growth, speakers agreed that forty years later, the planet continues to face many of the same economic, social, and environmental challenges as when the book was first published.

There is no doubt that the world is fast approaching its sustainable limits and we are on an unsustainable trajectory unless there is substantial and rapid change. Or as John B. Cobb wrote "we have already passed the point where changes in our behavior will prevent extensive decay. Now it is just a matter of how bad it will be." However, we can not just stay doing nothing in despair. Because as John.

²⁰ International Cooperative Alliance, Global 300 Report 2010.

²¹ In addition, joint efforts are actively pursued between regions and cities globally. Especially, collaboration to cope with climate change has been successful. In the case of Seoul, support for community development and social economy has been very active, and it also plays a leading role in international inter-city cooperation.

²² Raworth Kate (2012). Can We Live Within the Doughnut? (Oxfam Discussion Papers).

²³ 'Consortium for Understanding and Sustaining a Bio-Diverse Planet'

B. Cobb emphasizes “But ‘how bad’ is still a very important matter. It is too late to prevent extensive suffering. But it is not too late to make some difference.”²⁴

Continuous economic growth is incompatible with sustainable development unless sustainable development is defined in a weak sense which is currently done by neoclassical economics. Moreover, it is not only physically impossible but also undesirable. Ample studies suggest that the actual well being of the human society is not increasing but decreasing with further growth of the economy. The alternative to growth or decline is the ‘Steady State’. When we look back on history of economic thoughts, many classical economists acknowledged the existence of a steady state including Adam Smith, Thomas Malthus, Karl Marx and John Stuart Mill. Most of them had a positivistic concept of such a state. Later, Herman Daly brought the concept of ‘steady state’ to the public debate while establishing a theoretical basis of ecological economics. His work is among the most frequently cited sources in all of the scholarly literature about sustainable development.

Kenneth Boulding, a faithful Quaker, pacifist, and economist dedicated to solving real-world problems, allegedly warned of the risk of depletion by comparing Earth to spaceship half a century ago in the “The Economics of the Coming Spaceship Earth (1966).”

“The closed economy of the future might similarly be called the 'spaceman' economy, in which the earth has become a single spaceship, without unlimited reservoirs of anything, either for extraction or for pollution, and in which, therefore, man must find his place in a cyclical ecological system.”

What has mainstream economics done for more than five decades since then? Kenneth Boulding's statement, "Anyone who believes exponential growth can go on for a finite world is either a madman or an economist" is not just sarcastic.²⁵ Do we need a stronger statement than this to assure that a new way of thinking in economics is not a matter of choice but of necessity?

²⁴ Cobb. J. (2016?). One more thing before I go.

²⁵ US Congress House Hearings (1973), Kenneth Boulding on Energy reorganization act of 1973.

China's Vision for an Ecological Civilization

Meijun Fan, Ph.D

China Project, Center for Process Studies

Several years ago, Dr. Cobb predicted that China is the most hopeful place to build an ecological civilization.

Some Chinese thought that Cobb tried to fool China with this prediction since China still has a great deal of poor people. For them, feeding those hungry people is China's first and foremost task. Therefore, China needs development at all costs, including the cost of environment. Their most favorite slogan is: Developing first, cleaning up later.

Also, some scholars both Chinese and non-Chinese took a skeptical attitude toward Dr. Cobb's enthusiasm about China. In their eyes, there is serious ecological crisis such as air, water and land pollution in china. How could it be possible for China to build an ecological civilization?

However, those Chinese scholars with foresight appreciated Cobb's enthusiasm. As time passes, more and more Chinese have realized the wisdom of his prediction and begun to rethink it deeply.

I fully agree with Dr. Cobb that China is the most hopeful place in the world to build an Eco-civilization since I am a Chinese who lived in China for 40 years, and visit China almost every year after I live in California, also I study and work on the field of ecological civilization, especially Chinese one, for years. For this reason, I happily accepted Dr. Han's invitation to share my understanding of China's Vision of an Ecological Civilization with all of you today.

What does China's vision of the ecological civilization look like? I would like to draw a roughly picture via the following three parts:

1. History
2. Government
3. People

1. History

The historical model of the relationship between government and people still has huge impact on public life in China today, on psychological life as well.

Please keep this model in mind while we are talking about China's vision of the ecological civilization.

2. Government

Chinese government has paid more and more attention to Ecological civilization since 2007.

GDP is no longer the only measure of success to a great extent.

EPA has more power than before

Trash management

Air pollution management

River pollution management---the head of a river system

Two ecological civilization experiment provinces (Guizhou, Jiangxi)

In a word, ecological civilization has been promoted to the height of the national strategy. Building an ecological civilization has become a major goal for central government. It is a top design, from top to bottom. This is one hand.

3. People

On other hand, to build an ecological civilization is also at Chinese people's will. It is from bottom to top.

Dr. Si Yan's organic farm

Zhen Bing's organic association

Dr. Jiang Guangming's organic farm

Above is a roughly picture of China's vision of ecological civilization. It is not only one of the national policy and goal, but also people's will. This is China vision of ecological civilization. It leads by government and participated by its people. In this way, people and its government go to the same direction.

A Vision of Hope: The Ecological Civilization Alternative

Wm. Andrew Schwartz, PhD.

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Co-Founder and Executive Vice President of EcoCiv
https://prezi.com/y3lzhlahy54/edit/#0_15277798

Our world is sick. And like any illness, simply treating the symptoms without understanding the root cause can be a fatal error. If we want to heal the planet, if we want to combat the threat of climate change, we need to address the underlying causes. So what are the underlying causes of our current ecological crisis?

According to NASA, “Most climate scientists agree that the *main cause* of the current global warming trend is human expansion of the ‘greenhouse effect’—warming that results when the atmosphere traps heat radiating from Earth toward space.”¹ And while the greenhouse effect may explain changes to the climate, it leaves unanswered the question of the underlying cause of the greenhouse effect. Of course, most climate scientists would then turn to explanations of how the increase of certain gasses (like carbon dioxide, methane, etc.) block heat from escaping. Yet, even this explanation leaves unanswered the question of why there is an increase of CO₂ and CH₄ in the atmosphere. At this stage, we get a greater variety of explanations—from human populations growth, to industrialized farming and the production of meat, to the increase use of combustion engines and general fossil fuel consumption...the list goes on. Yet behind each of these contributors to the climate crisis, there is another underlying cause.

Deeper and deeper we follow this causal chain until we arrive at the bedrock of our civilizational structure—a set of big ideas; basic assumptions about the world that provide an underlying framework or paradigm on which our civilization was built. So what are paradigms, and what sort of “big ideas” have contributed to our current ecological crisis?

Wrong Paradigm—Wrong Direction

A paradigm is a model, template, or archetype—a framework for understanding. A “paradigm shift” is an important change that happens when the usual way of thinking or doing something is replaced by a new and different way. Our paradigms, our worldviews, and our fundamental assumptions about reality shape EVERYTHING we say, think, and do.

¹ <https://climate.nasa.gov/causes/> emphasis added (accessed on 9/8/2017).

Consider a map. Imagine you're on a roadtrip from Los Angeles to the Grand Canyon, but only had a map of Korea. How could you reach your destination using a map didn't include your destination? When we know the world through the map alone, we are bound by its borders. If we, as a society, want to find our way to a desirable destination—such as a sustainable world—we need the right framework, the right paradigm, the right map.

Unfortunately, our modern civilization is built on the wrong paradigm. The “modern” map leads to environmental catastrophe. If we are to find our way to a more sustainable and just way of living on this planet, we will need a new map—a new paradigm.

But changing paradigms is not easy. It's not simply enough to “know” that we should be living differently. As stated in the movie *Inception*, “What is the most resilient parasite? Bacteria? A virus? An Intestinal worm? **An idea**. Resilient...highly contagious. Once an idea has taken hold of the brain it's almost impossible to eradicate.” Therefore, if we are to change our paradigm and all that comes with it, we need to follow the advice of Yoda, who says “You must unlearn, what you have learned.” But before we can unlearn what we have learned, we need to examine what we have learned—acknowledging our most basic assumptions.

The Situation: Our Modern Paradigm

As environmental philosopher John B. Cobb, Jr. says, “We must be honest. We live in a terrible time. We know that our actions are destroying the ability of the Earth to support us, but we seem incapable of changing direction. We plunge blindly ahead, either ignoring the reality of what is happening or hoping that some technological miracle will save us. It will not. The *modern world* has overshot the limits of what the Earth can bear, and our civilization will collapse.”²

So how did we get here? What about the modern paradigm, the values and worldviews, have led us to the brink of collapse? “Modernity,” characterized by the “Enlightenment,” is often traced back to Rene Descartes (1596-1650), the “father of modern philosophy.” Descartes is best known for his statement “I think, therefore I am.” However, it is what lies beneath that assertion that helped Descartes set the stage for the modern period—Cartesian Dualism.

What is Cartesian dualism? It's the idea that there are only two things that make up reality: 1) matter in motion on the one hand, and 2) mind (or the human soul) on the other. For Descartes, everything falls into one of these two categories. Not only so, but as a type of dualism, mind and matter are believed to be *independent* of one another. One has no bearing on the other.

² John B. Cobb, Jr., “Ten Ideas for Saving the Planet,” <http://www.ctr4process.org/whitehead2015/ten-ideas/> (accessed on 9/8/2017).

Among other things, this dualism resulted in the elevating of humans above all other creatures. This results in an anthropocentric, or “human-centered” worldview. Humans are unique because they possess a soul/mind. For Descartes, this makes humans superior to other animals. Although this carried the alienation from nature to its extreme, it gave dignity to human beings. It supported the ideas of human rights and even of a fundamental equality of all human beings, which is evidenced by the development of modern democracy.

When Charles Darwin later showed that human beings are a product of evolution (i.e. fully part of nature), this opened the door to re-thinking of nature as having some of the properties Descartes attributed only to the human soul. But, by that time, the commitment of the sciences to methods associated with nature’s purely objective existence was very strong. Instead of changing the approach to the rest of the natural world, scientists chose to study humans in the way they had previously studied the objects of human experience. Therefore, Enlightenment dualism was replaced in late modernity by Reductive Physicalism; the idea that reality is *only* made up of the physical. No mind. No soul. Just matter.

This paved the way for “objective” study of the world as a machine, without values or purposes—a mechanistic worldview. The quest for certainty, through objectivity, became the heart of educational systems, and led to the creation of “disciplines.” So dualism paved the way for the fragmentation of knowledge.

By breaking knowledge up into disciplines, fields of study like "economics" could emerge independent of the nature world. This results in a fallacy of misplaced concreteness (or reification) in which abstract economic theories (like unlimited growth) are mistakenly treated as concrete facts, resulting in the view that unlimited growth is a realistic possibility.

This development is explained in detail by ecological economists Herman Daly and ecological philosopher John Cobb, in their book: *For the Common Good: Redirecting the Economy Toward Community, the Environment, and a Sustainable Future*.

The environmental crisis is (in part) the result of pursuing unlimited growth on a limited planet, which is (in part) the result of mistakenly treating the abstracts principles of economics as concrete realities, which is (in part) the result of fragmented disciplinization, which is (in part) the result of a reductive physicalism which scientist adopted after Darwin because of the deep commitments to Descartes mind-body dualism, which was a “big idea” that grounded the Enlightenment and the Modern paradigm.

Therefore, Cartesian Dualism (a big idea of the Modern paradigm) paved the way to our current environmental crisis. Now, it’s not as if Neo-liberal Economists recognize their practices as indebted to

Descartes philosophy. However, we are always partly constituted by the past. We have been handed down a legacy from our ancestors...whether genetic, social, or other; whether recognized, ignored, or embraced.

The Ecological Crisis is a Civilizational Crisis: We Need a New Paradigm

If Descartes' philosophy serves as a paradigm that leads toward unsustainability and collapse, then we need an alternative to Descartes—a new paradigm that leads toward a sustainable & just world—an ecological civilization.

Ecological Civilization is a positive vision of a society built on the principles of sustainability and commitment to the common good. The ecological civilization framework (the Eco Civ paradigm) is a living systems framework, in which our world is understood as an organic, dynamic, interconnected, complex system.

Among others things, ecological civilization involves the following paradigm shifts:

- From dualism/monism to holism
- From mechanism to organism
- From anthropocentrism to biophilia
- From unlimited growth to sustainability

Ecological Civilization implies that the changes required in response to global climate disruption are so extensive as to represent another form of human civilization, one based on ecological principles. Broadly construed, ecological civilization involves a synthesis of economic, educational, political, agricultural, and other societal reforms toward sustainability. Because environmental conditions are deeply tied to economic, political, agricultural, educational, and other practices, achieving a sustainable civilization will involve a shift in awareness and values and a significant rethinking of current structures and practice in a more systemic fashion than has been true in the past.

In June 2015, a group of scholars, activists, and concerned citizens gathered in Claremont, CA for this very purpose—to explore alternative paradigms and practices toward an ecological civilization. This transdisciplinary conference consisted of nearly 2000 participants collaborating in roughly 85 working groups on various topics.

While the event was open to people of all backgrounds and beliefs, the organizing body (the Center for Process Studies) was convinced that a family of thought known broadly as "process-relational philosophy" is perhaps the best alternative to the destructive modern paradigm.

Process Philosophy of this variety originates with the work of mathematician and philosopher Alfred North Whitehead, who referred to his system as a “Philosophy of Organism.” Leading process philosophers John B. Cobb, Jr. and David Ray Griffin also began using the phrases Constructive Postmodernism and Ecological Civilization as alternative ways of describing process-relational thinking—phrases that have gained much traction in China over the past few decades.

Process-relational philosophy can be summed up by three basic principles:³

- 1) No one crosses the same river twice: being is becoming. (process)
- 2) No person is an island: all things are interconnected. (relational)
- 3) Seeing heaven in a wildflower: all living beings have value.⁴

Whitehead needed a way to explain how something that is always changing can be fully actual. He came up with the concept of “concrecence.” Concrecence is simply the process of becoming “concrete.” As John Cobb explains, “Concrete means fully actual, and that means a completed actual occasion [an entity]. The use of the term ‘concrecence’ places emphasis on the idea that even these momentary flashes of actuality that Whitehead calls actual occasions are processes.”

Now, the process of becoming fully actual (becoming “real” or “concrete”) also involves something Whitehead calls “prehension.” Prehension is the process of becoming what one is, by virtue of one’s relation to the past. We become what we become through our prehensions—always (at least partly) constituted by the past. Together, the process of prehension and concrecence explain what it means for reality to be a process of interrelated becoming.

The third notion (that all life has value), is a conclusion that arises from understanding the interconnected process of becoming. According to process philosophy, value is “inherent in actuality itself.” The whole process of becoming is directed toward the grasping of value in others, the incorporation of it within oneself, and the furtherance of value in creative ways. As Whitehead writes, “Our enjoyment of actuality is a realization of worth, good or bad. It is a value experience.”

Please don’t misunderstand, I’m not suggesting that if we simply think the right things, that our new philosophy will magically minimize the greenhouse effect. After all, as Whitehead declares, “Ideas won’t keep. Something must be done about them.” What I am saying, however, is that the root cause of the climate crisis should not be confused with the symptoms. The climate crisis is a civilizational crisis. As such, we need a new framework—a new paradigm—for a different kind of civilization: an ecological civilization.

³ I acknowledge that this is an over simplification, and as such there are inherent limitations and dangers.

⁴ Jay McDaniel, *What is Process Thought: Seven Answers to Seven Questions*.

The foundation of the modern paradigm was a philosophy of dualism that depicted reality as mind vs. matter independent of one another, and later reduced reality to simply matter, void of purpose and value. Under the ecological civilization paradigm, dualism and monism are replaced with a holism that portrays reality not as a collection of objects, but as a community of subjects—an interconnected whole, in which we are constituted by our relations.

According to the standards of modern industrial agriculture, success is defined in terms of “productivity”, which is measured by produce divided by hours of human labor. Under the ecological civilization paradigm, where everything is interconnected, success in agriculture means regenerating the soil for sustainable farming.

In the modern paradigm, economic success is described in terms of growth. This has proven detrimental to our planet. Small steps, like embracing a “triple bottom line” are not enough, so long as short-term gains on quarterly reports have priority. With an eco civ paradigm we redefine economic success in terms of overall well-being of people and the planet (the common good). This might include something like Ecological Economics or even the Economics of Happiness.

According to the modern paradigm, the purpose of higher education is defined by specialized knowledge, career development, and preparation for high-paying jobs. Under the eco civ paradigm, the role of education is to empower leaders to serve the global common good. This requires a system of education that does not attempt to be “value-free” but that seeks to develop wisdom, nurture integrative knowledge, and promote the common good. The world is not neatly divided into disciplines. Nor should the way we learn about the world. We need an educational system that supports and values rural farmers as much as corporate businessmen.

Paradigm shifts in these areas, and others, would result in a radically new form of civilization. This new form of civilization (and ecological civilization), with commitment to the common good and the well-being of the planet at its core, is the only way we can address the underlying causes of the climate crisis. If we have the wrong framework, the wrong paradigm, the wrong map...no matter how hard we work, we won't reach an ecological civilization. If we truly wish to heal the planet, addressing more than just the symptoms of climate change, we need an ecological civilization.

Something the Artists Can Do For the Ecological Civilization

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1.

Thomas Berry said that the historic mission of our times is to reinvent the human-at the species level, with critical reflection, within the community life-systems, in a time-developmental context, by means of story, and shared dream experience.¹ I want to focus on the “means of story” among them, because story is the basic impetus to change the situation. What is story? Google dictionary shows the definition of story as “an account of past events in someone’s life or in the evolution of something.” Without story, we don’t remember what was happened. Without story, we don’t understand what does that mean. Story is a kind of time line. That’s why the story makes unity, identity and moral sense of individuals as well as societies. And that’s why those who hold power attempt to impose a dominant narrative that keeps them there. It “naturalizes” the situation. So, changing the story means changing the perspective, moreover changing the future. Our capacity to act is conditioned on the story we tell about our own predicament and capabilities.

2.

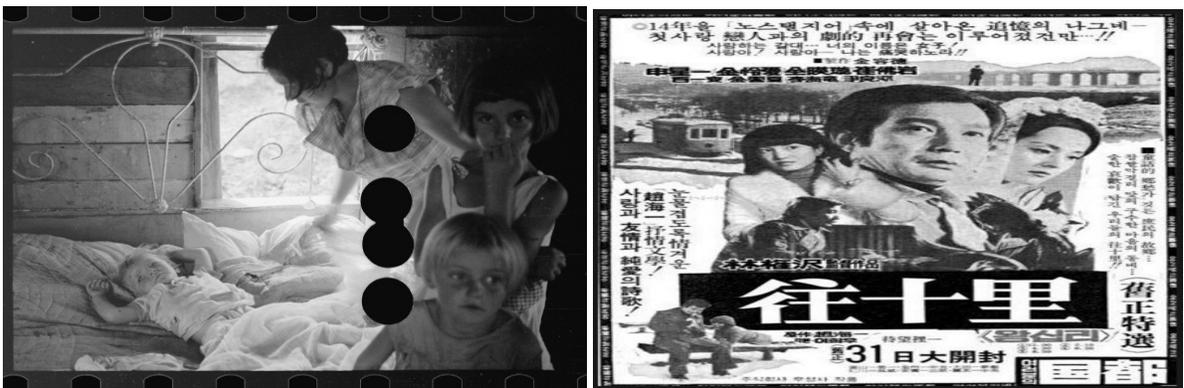
Who can change the story? Of course everyone, especially artists. Story is not exclusive for writers, but all artists. Story is the essence of all genres of art because it propagates the concept through sensibility. Artists can change story not only because of their sensitivity and talent, but also their social status. They are vulnerable to the commercialism of the capitalistic economy. A few artists can sell their artwork, but most of them cannot earn their living by their activities. Frequently, their artistic freedom conflicts with the satisfaction of public favors, which means they should compromise with their inner desire to sell their artwork.

For a long time, it is supposed that the national state is obliged to support the artists for their welfare and the development of national culture. Pubic support policy originated from “Federal Project Number One” in US, a kind of employment relief program for artists. It started in 1935 at the beginning of Franklin Delano Roosevelt’s “Second New Deal.” It comprised five divisions: the Federal Art Project, the Federal Music Project, the Federal Theater Project, the Federal Writers Project and the Historical Records

¹ Thomas Berry, *The Great Work* (New York: Bell Tower, 1999), p.159

Survey, together employing more than 40,000 artists by the end of its first year. Saul Bellow, Arthur Miller, Mark Rothko, Orson Wells, Eudora Welty, Richard Wright were the members of the Federal Project.

Here is very interesting example. FSA (Farm Security Administration), one of government institution, employed many photographers to record and advertise their work. They moved the poor farmers in the southern-western States to the fertile land and operated collective farms. But they were worried that their works seemed like communist policy, so they determined to appeal through images which showed the farmer's miserable situation and recovery from it. The black hole(left) was proof of censorship. FSA staff censored the pictures and discarded unfitted works. Another image (right) is the government-sponsored film "Wangshimni" directed by Kwontae Im, representative of Korean national cinema. Korean government also censored scenarios before the film-making to investigate if there was any violation of national ideology.



Peasant's wife and children, Rothstein, 1935 Wangshimni, Kwontae Im, 1976

This kind of government's artist support program executed all around the world. Like two cases, most of governments censored the artist's work in return for the money, so "arm's length principle" (just support, not interrupt) adopted. During this period, culture means national culture which has set basic boundary for the readers, audiences and spectators. Benedict Anderson expressed it as "national ritual".² He said that especially printed media like novel and newspaper made people imagine the nation, and it created the "we" concept. But who are "we"? What consists of "we"? We means one imagined nation, one culture or one economic system.

It is also available for the typical environmental story. In Korea, newly inaugurated President Jaein Moon proposed "enucleation in progress", but "nuclear mafia" has resisted strongly against his policy in

² Benedict Anderson, *Imagined Communities: Reflections on Origin and Spread of Nationalism*, Verso, 1983

the name of economic efficiency and economic growth. Of course, the economy means Gross “National” Product. Why should we change the story paradigm from this viewpoint? The biggest problem is that there is only national narrative, no human story. Human is subjected to the economy, economic profit. The story without human is the story of industrial civilization.

3.

Then what kind of story is needed for us, the pursuer of ecological civilization? How to create new story of new civilization? First, it should be individual human story. One’s own story, every individual story does matter. Second, it should be our stories, which relates the neighbors, plants and animals, moreover all the nature including mountains and rivers. In this case, nature is not abstract one, but it is our bioregion where we were grown up and live now.

We can call it community, and we should listen to the community’s story through community art. This kind of art can contextualize the people’s lives at the specific time and place. Community members collaborate with each other to express their concerns and aspirations, illuminating history and heritage, beautifying neighborhoods, teaching, expressing cultural creativity as a source of resilience. As an example, let’s see “Grandma’s random dance” (left), choreographed by Korean artist Eunmi Ahn. The dancers are common grandmas who have been housewives, workers or farmers. They didn’t learn professional dancing, which needs artistic training. But sometimes they dance in the community festival or on travel “randomly”, just shaking their bodies for relieving stresses. With their usual colorful costumes, this dance creates special beauty and healing power.

Another example is performance installation by Sun Choi. He also thinks art is beyond an expression of talented artist. His community art “Breath” (right) tried to gather the most precious one, people’s breath. Residents living with trauma like foreign workers or leprosy patients in Korea, blew the liquid paint on the canvas, and it made unpredictable shapes seemed like butterflies.



Grandma’s random dance, Eunmi Ahn, 2017 Breath, Sun Choi, 2015

The most important thing is to enable people to tell their own stories with their own voices and bodies in their own ways, and to use those stories to illuminate larger questions critical to our collective well-being. In taking part in a project and sharing their own stories, participants have an empowering experience of self-expression and communication that often provides a portal to continuing cultural and communal participation.

4.

Beauty and meaning is important factor of our stories. What is beauty? The feeling of beauty depends on time, place and personal appetite. Most of masterpieces in the art history seemed strange, even ugly when they were got birth. They threw the cultural shock to the people with violation of common sense and regular norm.

In some sense, beauty needs cultural citizenship. It is easily understood when we think about subculture like graffiti, which is writing or drawing scribbled, scratched or sprayed on a wall of public space. Graffiti was regarded as illegal disturbances at first, so removed by the administration. It took a long time until being recognized as an art. Sometimes, the full import of art works often emerges into awareness only when they are seen as provocations, as grounds for conflict. When cultural citizenship is the site of conflict, it becomes clear that we can change dominant concepts and discourses around the values of our lives in the art. We ask questions about economic development, technocratic attitude, devastation of nature and overall industrial civilization. It needs for us to be counter-cultural, breaking preconceptions.

Then, what is meaning? Meaning is aligned with beauty. It offers alternative viewpoint instead of accustomed thinking habit. Changing meaning is changing “frame”, a thought organizer. Embedded in each frame is the implication that adopting that position makes you a good person, while the opposite opinion is morally questionable. George Laykoff calls it “real reason”,³ which incorporates our bodies, emotions and spirits as well as our intellectuals. Successful reframing resonates with preoccupied values and stories. It engages the senses, employing imagination, association, visual and tactile information along with ideas, which is the working of art.



Beauty and meaning is connected together. Beauty conveys meaning unconsciously. We can see how meaning changes the sense of beauty in fashion industry. Designer Seonok Im invented polyester achromatic-colored textile and standardized clothes' parts to combine according to design. Her idea is getting away from trend,

³ George Laykoff, Don't Think of an Elephant, Chelsea Green Publishing Company, 2004

and preventing fashion trash. It seems very ecological.

PartspARTs Fashionshow, Seonok Im, 2015

5.

Sometimes, artists fight to prevent the violence of capitalism. Recently, Google planned to build new “Google Campus” in Berlin. It would bring regional development, increasing property price for some resident. At the same time, it would cause transportation for most of residents, which is called “gentrification”. Berlin artists cooperated to oppose Google’s plan, and many residents agreed to it. It was processed peacefully, but sometimes the artists “squat”-occupy illegally specific place. These activities instigates people to question about private properties.

Arlene Goldbard found six commonness between Arab Spring Movement leaders’ and artist’s thinking. These are (1) social imagination, (2) empathy, the capacity to feel something of another’s experience, (3) the ability to improvise, (4) awareness of cultural citizenship, (5) connectivity, (6) creativity.⁴ Six skills intrinsic to art can actuate social change.

Artists are born to be free, and they are trained as innovative thinker. These six features are essential to change our sensitivity for nature, too. Especially, empathy and connectivity are the most important feature to “greenize” ourselves. The shortcut toward ecological civilization is art, artistic way, making the artist’s seat in our community and public sphere. It is needed to extend their job for being involved the artists to community. Traditional artwork is a kind of commodity for sale. Artists should participate in various kinds of local policies and administration. For example, ESA (Ecological Society of America) launched “Earth Stewardship Initiative” in 2014 to make the sustainable cities at Baltimore, Sacramento and Portland. This plan is cooperation of city planners, ecologists and artists. Like this, artistic area should be extended in our ecological local grass-rooted social-economic community.

⁴ Arlene Goldbard, *The culture of Possibility: Art, Artists & Future*, Waterlight press, 2013, p.71~74

Session 3: Values for an Ecological Civilization

The continental philosophy on which modern world has been based separated the subject from the object. This view of dualism divided the nature as an object and human as a subject. It deprived the mind, value and spirituality from nature. As a result, human spirit, value, and spirituality are also threatened. Ironically it reminds us that human and nature are closely interconnected. We are going to discuss about the new values for ecological civilization. Pantheism out of Whitehead's philosophy, and Yoko civilization of Japanese tradition inspires our new thinking. Particularly, Pope Francis' encyclical "Laudato Si'" shows us what is the spiritual leadership and integral worldview.

The Environmental Movement in Korea and the Role of Religions

Fr. Jai-Don Lee

Treasurer of the Catholic Bishops' Conference on the Ecology and Environment,
Director of Seoul Archdiocese's Committee

1. Introduction

I am honoured to participate in this conference organised by the Centre for Process Studies, Claremont School of Theology. I am especially honoured to be participating in this conference along with one of the theologians I deeply respect, non-other than John Cobb Jr. From the civilizational perspective, the contemporary global impact of ecological collapse means there is an urgent need to find an appropriate direction and process not only for diagnosing the crisis but also proscribing appropriate remedies. In this respect, Claremont University has, I believe, for a long time been engaged in a valuable and necessary dialogue about ecological civilization. Indeed, the opportunity to participate in this dialogue is, I think, an “upgrade” for the ecological movement in Korea.

At the outset, I need to note something of my personal limitations for this presentation. I have been asked to present a paper on the “Environmental Movement in Korea and the Role of Religions.” However, this topic is so large that I cannot do more than offer a brief introduction to the topic. Moreover, I will primarily be addressing the topic through the perspective of my own religious affiliation and the initiatives of the Catholic Church in Korea.

2. The Korean Environmental Movement

The Korean environmental movement has its roots in the 1960s, coming into being as a reaction to rapid industrialization and wide-spread environmental devastation. In 1982, one of the first non-governmental initiatives was the establishment of a research institute focused on looking for solutions to the problem of environmental pollution. It was, however, the toxic spill of the organic compound, phenol, into the Nakdonggang River in 1991, which caused the emergence of a formal environmental movement within Korean society. The Korea Federation for Environmental Movement, Green Korea, and several similar groups were established at that time. Eventually, the environmental movement formally joined the national political discourse in 2012 with the establishment of the Green Party.

Entities such as the Korea Federation for Environmental Movement and Green Korea have, through their opposition to, amongst other things, the building of nuclear reactors and the Four Rivers Project, played a leading role in the movement within Korean society for environmental conservation. However, the social impact of these groups is severely restricted because of the paucity of their paid-up membership. The relatively short history of civil society in Korea means that environmental groups, along with all the other social activist organizations, struggle for legitimacy and recognition within wider society. There is weak societal awareness of the importance for citizens to participate in the political process through direct involvement in civil organizations. The fact that the Green Party is yet to gain a seat in the National Assembly is an indication that the environmental movement is still marginal in the collective socio-political consciousness.

3. The Role of Korean Religions

The rise of the environmental movement within the Korean religious world parallels its emergence in the wider society during the early 1990s. All the major religious groups – Buddhist, Protestant, Catholic, and Won Buddhists (a reform sect within Buddhism which was established in 1916) date their involvement to that time. All the Korean religions have eco-friendly teachings which are a significant positive given the wide-ranging influence and power of these institutions. Indeed, in the first instance, the initial motivation for involvement finds its source in their ecological teachings. The Asian religions (Buddhism and Won Buddhism), in particular, have a rich body of ecological resources and teachings which they draw on to teach their believers how to live ecologically sensitive lifestyles. Protestants and Catholics, following the new trends in theology, are beginning to embrace eco-theology and spirituality as they engage with the challenge of conversion which is inherent in these teachings.

The second way in which religions participate is through the use of their institutions to expand the environmental movement: namely, through ecological praxis. In the Buddhist sphere, ecologically conscious monks are expanding the awareness of life-issues. Won Buddhism, at the individual temple level, is deliberately fostering healthy environmental practices. For example, in 2016, in honor of the 100th anniversary of Won Buddhism, over 100 temples carried out an action to establish a solar power station. Protestants too, despite their divisions and splits, have been enhancing their ecological activities both at the individual church level and within their

respective confessional groupings. (As for Catholics, I will deal with them in the next section of my presentation.)

Korean society is religiously tolerant and a diversity of different religions peacefully co-exist. Indeed, it is often joked, and not without good cause, that in Korea the number of affiliated religious believers is higher than the total population! This statistical anomaly arises because it is not unusual for a person to maintain affiliation to more than one religious group. What is significant is the contrast between the number of people who are affiliated to organizations within civil society as opposed to religious entities. In contrast with civil society, Korean religious groups have far more adherents and much bigger budgets. Consequently, the impact of religion on the environmental movement is both significant and, by and large, extremely helpful. Nevertheless, despite the religions of Korea having two major advantages – namely, ecological teaching and institutional power – their practice falls way short of their possibilities and potential.

4. The Response of the Catholic Church

The Catholic Church has been formally involved in the environmental movement since 1990. The momentum for this engagement came with the publication of Pope John Paul II's 1990 World Day of Peace message, "Peace with God the Creator, Peace with all of creation." This message, the first of its kind in the 2000-year history of the Church, was a catalyst for the environmental movement. The Korean Bishops Conference responded by enabling the development of the eco-ministry. As a result, many parishes have participated in programmes of environmental awareness and initiated campaigns such as, "Conserve, Reduce, Share, and Reuse." The ministry has also been active in wider society, opposing the Four Rivers Project and the Nuclear industry.

The Catholic Bishops Conference has, through education and by publishing pastoral letters on environmental issues and practices, sought to encourage the Korean faithful to become more ecologically sensitive and engaged. In 2010, the Conference published a major pastoral letter on the environment entitled: *Restoring the Integrity of Creation: Our Responsibilities and Practice*. (In 2017, this pastoral letter was, as a service to the Universal Church, translated into English and distributed around the world.) This letter was followed by the publication, in 2013, of a

document on the question of nuclear energy entitled: *Nuclear Technology and Church Teaching: a meditation on nuclear power by the Catholic Church in Korea*.

From a theological perspective, the environmental movement within the Catholic Church has suffered from a lack of magisterial teaching and direction: the “why” and “where” questions. However, in 2015 an epochal shift occurred with the publication of Pope Francis’ Encyclical, *Laudato Si’*. The encyclical has provided the impetus which has brought the environmental movement into the mainstream of life within the Catholic Church in Korea. All the dioceses have now established environmental ministries and are implementing educational programmes.

Presently, the Church is giving emphasis to the “Friends of Heaven, Earth and Water Movement,” an apostolate which is spreading throughout all the parishes in the country. This movement was established in 1990 but failed to gain traction amongst the faithful. However, the publication of *Laudato Si!* has re-energized the movement and prompted its relaunch on the Feast of St Francis, October 4, 2016. Eight of the 230 parishes in Seoul Archdiocese are now active in the movement and other diocese are also developing programmes to implement the movement. There is a real sense that the relaunch of the “Friends of Heaven, Earth and Water Movement” will be successful.

The Church is also involved in several other programmes. Of particular note is a joint initiative with the Japanese Church focusing on the denuclearization of the two countries: *a pilgrimage towards a nuclear free peace in Korea and Japan*. Following the Fukushima nuclear disaster in 2013, the Church in Japan has been at the forefront of the nuclear free movement and promoting awareness of the dangers of nuclear power stations. Korea presently operates 25 nuclear reactors. Given the concentrations of population in close proximity to these reactors, a nuclear accident would be even more serious than the one experienced by Japan. Consequently, every year the two Churches take turns in hosting a pilgrimage towards a nuclear free peace in Korea and Japan in order to heighten awareness of the dangers of nuclear reactors.

5. In conclusion

Environmental conservation is not only vital to the survival of humanity and the ecosphere but also an essential involvement for all religions. I believe that there is a profound connection between process studies and environmentalism, with the former offering the later an opportunity to discover a more focused direction and goal. The goal of environmentalism must

be to convert industrial civilization into ecological civilization. Within the Korean context, there is unfortunately little discussion about either environmentalism or ecological civilization. I am convinced that social and religious environmental activism is the most effective course for establishing an ecological civilization.

The Francis Effect: Integral Values

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The first South American pope of the Roman Catholic Church, Pope Francis, has become a popular figure beyond the scope of the church, accruing praise from both secular and various religious communities from around the world alike. Arguably, his global appeal stems from his illuminating and often controversial remarks. One need only think of his remark that it is better to be an atheist than a hypocritical Christian. Surely, this is not a comment expected to come from the head of a prominent religious tradition. Yet, such a remark reveals the pope's grounded perspective, a perspective grounded in upholding the dignity of the human person and an attitude of one living in a shared, interrelated global community.

Pope Francis is firmly in-line with the social teaching of the Catholic church, but this paper will address where he goes beyond that which is typically prescribed. At the cornerstone of the Catholic social teaching lie two pivotal concepts: first, the human person having inherent worth as being made in the image of God (*imago dei*) and, second, the teaching of distributive justice. This latter concept may be defined as the relationship between the individual and society, and how wealth, income, and power of a society affects the various individuals of that given society. The Second Vatican Council held in the 1960's firmly established these aspects as characterizing the church's ethos in engaging modernity. Pope Francis is squarely attuned with this traditional account, but creatively and necessarily expands the notion of distributive justice by moving beyond some of its anthropocentric limitations. His larger vision attempts to account for the value of creation itself, not being restricted to human affairs. This paper explores and expands upon his nuanced social teaching and the newly appropriated set of values promoted therein.

In order to appreciate his larger concern for creation itself, I turn to his papal encyclical *Laudato si'* (lit. Praise be to you), a work that addresses the dire planetary issues and its entanglement with human disposition, consumerism, politics, and more. Pope Francis is ambitious in his theoretical approach, but develops a convincing narrative revolving around the concept of *integral ecology*, a worldview based upon mutual relationality. *Integral ecology* is based upon a deep awareness of the complex interrelatedness of the diverse systems that constitutes our universe. It attempts to understand how the

different systems of our shared common home, both naturally existent and human constructs, mutually interact, influence, and/or dominate one another.

This new relational worldview put forth by Pope Francis invokes humanity to reassess our notions of value and success. This paper will first explore and address the merits of the pope's integral ecology as a uniquely responsive worldview and, secondly, how this worldview leads to new ethical considerations. These two points are intricately related to one another insofar as a different vision of reality necessarily requires a new set of values. It will be shown that by widening our consideration of factors that constitute our contemporary issues, more responsible and sustainable solutions may come into focus. If we are to change the workings of society, its economy, and its behavioral patterns, a seismic shift in our understanding of reality must occur. Pope Francis offers the world such a shift with the hope of leading humanity towards a more ethical and sustainable future for all.

The Affective Ecology of Contemplative Cinema

Zack Walsh

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In this presentation, I would like to introduce you to a group of films that I watch as part of my spiritual practice. I have been watching these films for over a decade, and I find that they are among the most powerful catalysts for personal transformation in the context of social and ecological transformation. Their power derives from their capacity to develop the observational and empathetic qualities I need to understand my role and responsibility in this moment of civilizational crisis. Watching these films generates the convictions that make me resolute in my mission to construct an ecological civilization as both a personal and professional commitment. As such, I use them as objects of spiritual guidance.

Collectively, I refer to these films using the term *contemplative ecocinema*, because they combine elements of both contemplative cinema and ecocinema. *Contemplative cinema* is “a genre of art cinema film-making that emphasizes long takes, and is often minimalist, observational, and with little or no narrative.”¹ It highlights the importance of atmosphere and the ambient environment, emphasizing the background and context over foreground action. In this way, it encourages the viewer to enter into an experience of the film, rather than being pulled along a pre-given story structure with an expected outcome. Typically, these films feature a lot of empty space and ambiguity that invites the viewer to relate to the film and make meaning in ways that are personal. Though they are very demanding films, as such, they are among the most transformative to watch, because they require careful attention and personal engagement.

Ecocinema is another genre of films that “overtly engage with environmental justice concerns or those that make ‘nature’ from landscapes to wildlife, a primary focus...they have broader philosophical implications of what it means to inhabit this planet... to be a member of this ecosphere and to understand and value this community in a systemic and non-hierarchical way.” They “sometimes aspire to present more biocentric and/or ecocentric viewpoints rather than overtly anthropocentric – human centered views or interpretation of natural phenomena).”² There are a surprising number of films that fall into either of

¹ https://en.wikipedia.org/wiki/Slow_cinema

² Paula Willoquet-Maricondi, ed., *Framing the World: Explorations in Ecocriticism and Film* (Charlottesville, VA:

these categories: contemplative cinema or ecocinema. Though they are not widely distributed, thanks to the internet, they can be easily accessed if you know what to look for. To start learning about contemplative films, I highly recommend perusing the Unspoken Cinema blog,³ and to learn more about ecocinema, I recommend exploring the growing body of film studies in ecocriticism.⁴

Personally, some of my favorite contemplative ecocinema include:

- Samsara (dir. Fricke)
- Visitors (dir. Reggio)
- Koyaanisqatsi (dir. Reggio)
- Manufactured Landscapes (dir. Baichwal)
- Behemoth (dir. Liang)
- Our Daily Bread (dir. Geyrhalter)
- Terra (dir. Arthus-Bertrand)

Although they do not qualify as contemplative ecocinema since they rely on a more explicit and dialogue-driven narrative structure, I would also highly recommend:

- Stalker (dir. Tarkovsky)
- Mindwalk (dir. Capra)
- Home (dir. Arthus-Bertrand)

The reason I choose these films is personal, and there are substantive differences between them; but in each case, they evoke an affective ecology of objects, sounds, and narratives that implicate me (as a viewer) in an experience of social and ecological crises, while inducing a variety of personal responses to my felt presence and engagement in those crises. In *Affective Ecologies*, Alexa Weik von Mossner explains that “events we mentally simulate in response to a story can continue to impact our emotions, attitudes, and behaviors after we have finished engaging with it.”⁵ What is unique about contemplative ecocinema is that it makes often invisible, subaltern realities present to our awareness, and in so doing, invites us to take responsibility for our entanglement with social and ecological crises.

To conclude, I would like to invite you to experience contemplative ecocinema as a form of spiritual practice. If you consider these films to be sacred objects, as I do, you may consciously choose to watch them at particular times in particular situations with particular people. With respect to one’s

University of Virginia Press, 2010).

³ <http://unspokencinema.blogspot.com/>

⁴ See for example, Stephen Rust, Salma Monani, Sean Cubitt, eds. *Ecocinema Theory and Practice* (New York, NY: Routledge, 2012).

⁵ Alexa Weik von Mossner, *Affective Ecologies: Empathy, Emotion, and Environmental Narrative* (Columbus, OH: The Ohio State University Press, 2017), 7.

tradition, I encourage you to find ways to integrate viewing experiences within your existing spiritual practice. To do that, I offer the following instructions as a general approach to viewing:

- *Before watching*, set an intention.
- *While watching*, maintain a meditative posture. Consider your affective reactions to what you see and hear. Notice how you make sense of the relationships between what the film presents and yourself.
- *After watching*, take some private moments to reflect upon and process your experience; then later, consider discussing the film with others.

November 8, Wednesday

**Ecological Civilization and Evolutionary Cosmology: Cosmogenetic
Experience as a Foundation for a reinvention of Homo sapiens.**

Brian Thomas Swimme

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When we list all the changes that are needed to move our civilization into an ecological mode, it becomes clear that what is required is a new kind of human. Over the years of our existence, we humans have gone through a number of fundamental changes, each of which can be considered a speciation event of a very special sort. Each of these depended not on any anatomical change but on a change in consciousness.

We need to contemplate the processes that are bringing about the new speciation event in which we find ourselves. Several of these speciation processes are already underway. The one I will focus on is the movement from an materialistic consciousness to what can be called a cosmogenetic consciousness, the nature of which will be a central point in my presentation. Rather than dwelling on definitions, I would like to indicate here what I believe to be the very essence of this change. For us to move into cosmogenetic process means to have those particular experiences that stabilize us in the realization that we are a wave of energy that is at least fourteen billion years in extent. Such experiences were not available to humans until the end of the 20th century. They can be considered one of the gateways into a new form of humanity.

The key word is experience of the universe as opposed to “objective” knowledge of the universe. I use quotation marks around the word objective to pay respect to the ongoing debates about the nature of scientific knowledge. In any event, to know the “objective” facts of our cosmological situation is a first step. The next challenge is to move from a consciousness that knows the “objective” facts of the universe “out there” to a consciousness that experiences itself in a direct way as an exemplar of this “objective” knowledge. As an analogy to our challenge, we can reflect on the sixteenth century discovery of the relationship between Sun and Earth. Though all of us are quick to speak of knowing that, of course, the Sun and the stars are not moving around the Earth, and that it is Earth that is spinning which gives the illusion of the Sun and stars moving around us, we only rarely, if ever, experience this directly. We like to think that we “know” the Earth is spinning, but our language gives us away when we speak of “sunrise”

and “sunset”. That is our situation in a nutshell. We have amassed a vast amount of “objective” knowledge of the universe but have not yet entered into and begun living in this universe.

One of the principal spiritual challenges of our time is to construct educational-imaginative-ritual processes that invite us, as participants, into an experience of this active cosmogenesis which is composed entirely of participants. My presentation will be a very crude first attempt. My hope is that if I can elicit even a tiny glimmer of participation, it might inspire others to invent and construct the psycho-spiritual works that will evoke the transformations of consciousness foundational for creating an ecological civilization.

Session 4: Interdisciplinary Dialogue for Ecological Civilization

The development of scientific technology and productivity has brought huge freedom and happiness to human beings. However, the issue which we must focus on now is to think about the future. Global capitalism which has reached its limit is struggling to find out the next step. From the vocabularies of the Fourth Industrial Revolution, Artificial Intelligence, Big Data, and so on, we attempt to measure the future, but it is unclear whether it will improve human life or not. Post-human studies have a possibility of evolving into the science of hope by means of exploring the coexistence between human and nature. At the same time, it has a possibility of creating new hierarchy and governance through maximizing the ability of some special human beings. For this reason, science should have a dialogue with religion and philosophy.

Gregory Bateson's Interdisciplinary Approach to Ecological Justice

Prof. Dr. Chul Chun

Systematic Theology & Science and Religion, Hanshin University
Director of the Center for Religion and Science (CRS), Hanshin University

1. Introduction: Gregory Bateson and the Concept of Justice

At this conference, I want to deal with the theme “ecological justice” on the base of the discourse between science and religion. What I am planning to do is especially examining various reinterpretations on eco- and social justice. Hence, I want to attempt system-theoretical / ecological view on “justice”. For this task I am going to utilize Gregory Bateson (1904-1980)'s perspective, who is a biologist, anthropologist and system-theorist all-together.¹ In the first part I will introduce Bateson's basic position. In the following part, I shall examine the level of social justice within the construct of Bateson. In the last part I will try to evaluate Bateson's perspective from the ecological perspective.

2. Gregory Bateson's Basic Position

1) *Meta-Pattern*: Conjunction of the living

Though Gregory Bateson was an anthropologist and biologist, his fundamental thoughts contributed greatly to the field of psychiatry, cybernetics, system-theory, linguistics etc. and in interdisciplinary studies.² His concern was about whether we are able to holistically understand our environment. Bateson thought that this world was more than just an intuitive discernment of an ‘organic conjunction between mind and spirit’. Bateson elaborates his theory through natural scientific, biological and anthropological means and shows us a concretely alive word. His live-long aim was to discover a *meta-pattern*, which connects all the living things: “My central thesis can now be approached in words: *The pattern which connects is a metapattern*. It is a pattern of patterns. It is that metapattern which defines the vast generalization that, indeed, *it is patterns which connect*.”³

¹ Cf. Noel G. Charlton, *Understanding Gregory Bateson: Mind, Beauty, and the Sacred Earth* (New York: State University of New York Press, 2008), 11-30.

² Peter Hawkins, “A Centennial Tribute to Gregory Bateson 1904-1980 and His Influence on the Fields of Organizational Development and Action Research,” *Action Research 2* (2004), 410; Peter Harries-Jones, *A Recursive Vision: Ecological Understanding and Gregory Bateson* (Toronto: University of Toronto Press, 1995), 14; Morris Berman, *The Re-enchantment of the World* (New York: Bantam New Age Books, 1984), 190.

³ Gregory Bateson, *Mind and Nature: A Necessary Unity* (New York: Dutton, 1979), 11.

Bateson's cause mirrors his criticism on western civilization. Through his cause he shocked the very foundation of the normalized epistemological grounds of western normal science, when he even deepened his elaboration establishing *creatura* as the idea and foundation of the intercommunication of all living things.⁴ He promoted a fusion of *pleroma*, standing for the definition of the world in terms of physical regularity, and creature, standing for the inter-communication of all living things.⁵ He uses Jung's Term *pleroma* as a name for that unliving world described by physics which in itself contains and makes no distinctions, through we must, of course, make distinctions in our description of it. In contrast, he will use *Creatura* for that world of explanation in which the very phenomena to be described are among themselves governed and determined by difference, distinction and information.⁶

2) *Mind*: Connecting Relations

He categorically opposed transcendent or substantive views and radically widened his horizon of reasoning toward the edges of abstract thinking in order to form a holistic view on the world. According to him the mind is kind of a 'pattern that connects relations'. This world doesn't reverse nor gets reduced to any kind of energy. But this is the process of opening of the ecological system itself. Our environment (world) is a highly complex system. The Mind is something that goes beyond this complexity. Thus, the "mind is immanent not only in those pathways of information which are located inside the body but also in external pathways."⁷

Bateson definitely defines the human being as a part of the greater Mind of the ecological system: "We are parts of a living world".⁸ He claims that the living world an inter-connected organic substance with a certain pattern. The human mind is just a part of and in the same time a sub-part of the greater system. If phenomenon of consciousness is based on individual independency of the sub-system then, the Mind is the greater open process embracing the sub-system. The level of the Mind in Bateson's structure is not

⁴ Cf. Noel G. Charlton, *Understanding Gregory Bateson: Mind, Beauty, and the Sacred Earth* (2008), 43. On the original meaning of the concept *pleroma* and *creatura* see Carl Gustav Jung, "Septem Sermones ad Mortuos (Seven Sermons for the Dead)," Aniela Jaffe, ed. *Memories, Dreams and Reflections* (New York: Random House, 1965). On the relation between Carl Gustav Jung and Gregory Bateson see Wolfram Lutterer, *Auf den Spuren ökologischen Bewußtseins: Eine Analyse des Gesamtwerks von Gregory Bateson* (Norderstedt: Libri Books, 2000), 172. On the Gregory Bateson's reconstruction of this concept see Gregory Bateson, "Form, Subsistence and Difference," *General Semantics Bulletin* 37 (19th Annual Alfred Korzybski Memorial Lecture, 1970). Gregory Bateson, "Form Subsistence and Difference," *Steps to an Ecology of Mind* (New York: Ballantine, 1972), 448-464.

⁵ Gregory Bateson and Mary Catherine Bateson, *Angels Fear: Towards an Epistemology of the Sacred* (New Jersey: Hampton Press, [1987] 2005), 13-14.

⁶ Gregory Bateson and Mary Catherine Bateson, *Angels Fear: Towards an Epistemology of the Sacred* (2005), 18.

⁷ Gregory Bateson and Mary Catherine Bateson, *Angels Fear: Towards an Epistemology of the Sacred* (2005), 465.

⁸ Gregory Bateson, *Mind and Nature: A Necessary Unity* (1979), 17.

just connoting the ‘inside’ of the human being, but rather gains its legitimate status within his theory through the *coherent abductive system*⁹ or the homeostasis of organism (*autopoiesis*)¹⁰ and environment that grants the base for inter-connectedness and inter-reliance.

3) *Religion*: Integral Prospect on the Complexity of the Reality

According to Bateson, the consciousness and the “ego” are closely related ideas.¹¹ Our consciousness is connected to our “ego” and to our bodily nature, but the Mind is in itself the essence of being alive inter-connected to ecological system or the “self”. But “the essence of being alive” itself doesn’t mean that everything is complete and connected in itself: “For the benefits of stability, they pay the price of rigidity, living, as all human beings must, in an enormously complex network of mutually supporting presuppositions. The converse of this statement is that change will require various sorts of relaxation or contradiction within the system of presuppositions.”¹²

In order to pave the way to examine the mind we are to be concerned with the issue of consciousness. Consciousness is the pathway to the mind. But the consciousness can only give us a glimpse of the whole system of the integral whole of the mind.¹³ Going beyond consciousness through that very consciousness can be a very long ride.¹⁴

It is very interesting to learn that he suggested art, poetry, music, human science, and religion as the point of tangency in order to pursuit the wisdom of the human being. Significantly, religion means to

⁹ Gregory Bateson, *Mind and Nature: A Necessary Unity* (1979), 143.

¹⁰ Humberto R. Maturana & Bernhard Pörksen, *Vom Sein zum Tun. Die Ursprünge der Biologie des Erkennens* (Heidelberg: Carl-Auer-System Verlag, 2002), 111; Paul F. Bell, “Understanding Bateson and Maturana: Toward a Biological Foundation for the Social Sciences,” *Journal of Marital and Family Therapy* 11 (1985), 13; Niklas Luhmann, *Soziale Systeme. Grundriß einer allgemeinen Theorie* (Frankfurt: Suhrkamp, 1984), 68, 495. On the *autopoiesis as a social system* see Niklas Luhmann, *Essays on Self-Reference* (New York: Columbia University Press, 1990), 1-20.

¹¹ Gregory Bateson, “Form Subsistence and Difference,” *Steps to an Ecology of Mind* (1972), 442.

¹² Gregory Bateson, *Steps to an Ecology of Mind* (1972), 461.

¹³ Cf. Wolfram Lutterer, *Gregory Bateson: Eine Einführung in sein Denken* (Heidelberg: Karl Auer-Systeme Verlag, 2002), 79-80.

¹⁴ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 434.

Bateson the holistic view.¹⁵ Along with religious experiences, insights through those points of tangency are the actions related to the wholeness of the mind.¹⁶

Furthermore, he suggests contact between man and animals – which is actually already quite a strange contact – and develops it to a contact between man and the natural world.¹⁷ The nature seems to be plain in comparison with the splendid achievements of the civilization, but the contact with nature itself provides us with the sense of being alive. This contact opens new ways of consciously recognizing the ecological system.

4) *Epistemology of the Sacred: Love Involves the Total Systemic Mind*

Bateson suggests “love” as the most significant mindset for going beyond the consciousness of the human being towards the wide horizon of the mind and spirit.¹⁸ Bateson couples “love” and “mind” as the essential living being. Bateson was attempting a harmonic fusion of knowledge and wisdom, beyond the horizon of understanding of normal science. Significantly, Bateson deeply treats the issues of ‘love’ in terms of realism. Bateson regards love as transcending the dimension of consciousness and common sense. Love connects in the deepness of the “structured” mind.¹⁹ Hence, Bateson treasures both the legacies of religion and science.

He diagnosed the separation of body and mind, substance and spirit, human being and nature, knowledge and wisdom as the root cause for today’s crisis and fear of collapse of the civilization. The true task of today’s civilization lies in reconnecting those values and to form an elegant shape of civilization. Bateson’s ‘sacred consciousness’ is the integral logical construct, through which he paves the way of recovering the sacredness of the living beings: “At the very least, it requires ways of seeing that affirm our own complexity and the systemic complexity of the other and that propose the possibility that they might together constitute an inclusive system, with a common network of mind and elements of the necessarily mysterious. Such a perception of both self and other is the affirmation of the sacred.”²⁰

¹⁵ Gregory Bateson, *Mind and Nature: A Necessary Unity* (1979), 142. Cf. Bill Buker, “Spiritual Development and the Epistemology of Systems Theory,” *Journal of Psychology and Theology* 31/2 (2003), 143-153. Peter Harries-Jones, *A Recursive Vision: Ecological Understanding and Gregory Bateson* (1995), 219.

¹⁶ Gregory Bateson and Mary Catherine Bateson, *Angels Fear: Towards an Epistemology of the Sacred* (2005), 200.

¹⁷ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 447.

¹⁸ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 673-674.

¹⁹ “Love is contrary to conscious common sense because love involves the total systemic mind.” Gregory Bateson, “They Threw God out of the Garden: letters from Gregory Bateson to Philip Wylie and Warren McCulloch Rodney,” Rodney E. Donaldson, ed. *CoEvolution Quarterly* 32 (1982), 62-67.

²⁰ Gregory Bateson and Mary Catherine Bateson, *Angels Fear: Towards an Epistemology of the Sacred* (2005), 176.

From these perspectives we may abstract Gregory Bateson's view on ultimate epistemology and ontology as following: Bateson sees every crack, collapse and limitation of reasonable thinking connected to the issues of 'visions of unity'. This mirrors the profound dimension of the ecological reality, the esthetic value and meaning of religion and the inter-connection of patterns through which he draws his insights of the system-theory's discernment.

3. Gregory Bateson's Social Justice

The term "social justice" cannot be found in any of his writings. However, superficially Bateson criticizes the limitation of social justice to the issues of civilization and consciousness. Here, we will need to reconstruct Bateson's equivalent term, from the inside of his logical structure. Therefore, we shall examine the usage of the term "social", first.

1) Let's think of a case when "social" was applied to a relation that went beyond the individual level. In this case the term "social" embraces the meaning of "relational", "organic relations", "integrity". Bateson basically understood the basic nature of substance and nature as "social relation". Therefore, a contradiction between individuality and sociality cannot stand in his logical construct. For him, the social relation is the reality, while the individuality is merely just an illusion. He, on the other hand, heavily criticizes the existence of individuality as an error of the western epistemological system.²¹

2) We can think of a case when he directs the term "social" to an idea that transcends the natural horizon towards cultural and civilizational dimensions. At this point Bateson can show various prospects from his ecological perspective. First of all, Bateson stands the position that the sensitivity of human consciousness, which is constructed from the society and culture, must be readjusted based on the sensitivity to "natural sense to nature".²² As a matter of fact, Bateson intensively dealt with the issue of continuity and discontinuity of the projected meaning by the human being and the reality of nature.

When we try to elaborate on the term "justice", we find it difficult to deal with it within Bateson's logical construct without violating terminology of the term itself.

1) For Bateson "justice" is a highly spiritualized idea. This has no connection to "*pleroma*" but only to "*creatura*", since it bears clearly spiritual concepts. Justice is of a high purity, that it cannot be contained in the ideas of *pleroma*. Justice relates this term to *creatura*.

²¹ Gregory Bateson, *Mind and Nature: A Necessary Unity* (1979), 17.

²² Gregory Bateson, *Angels Fear: Towards an Epistemology of the Sacred* (1987), 245.

2) If Justice is to be reduced to the understanding of equality of quantity it will face a twofold critic. The first one is the critic that the spiritual language of *creatura* has fallen into fusion with the ideas and dimensions of *pleroma*. Because, according the Bateson, “quantity does not determine pattern”. Bateson puts the justice *creatura* beyond the limitation of quantity and world peace (*pax et iustitia*).

4. Gregory Bateson’s Ecological Justice

Bateson’s interests lies in recognizing the reality as a “system”.²³ According to him, the term “ecology” is much wider than “civilization” and “system” is much deeper than “justice”.

1) Above all, justice means “stability of the system” according the Bateson. But this doesn’t mean the peaceful and calmed balance among all elements. A just society cannot be based on a system tuned to harmony. Rather, the environment as the starting point of organic order is to be regarded as the starting point of “ecological justice”.²⁴

2) The status of justice gains even more clarity when seen from the perspective of survival in the environmental system.²⁵ Bateson thus, defines a healthy human civilization as following: “A single system of environment combined with high human civilization in which the flexibility of the civilization shall match that of the environment to create an ongoing complex system, open-ended for slow change of even basic (hard-programmed) characteristics”.²⁶ Hence, he saw civilization and environment as a single whole, if it is to be a healthy one. At this point we can derive the significance of both social justice ecological justice as one in a healthy system.

3) Ecological justice cannot be an eschatological “heaven on earth” without any human interaction, solely through the system. According to Bateson, the ecological justice must seek for human contribution.²⁷

4) Preserving and protecting the nature and the ecological system do not directly lead ecological justice. Rather, the more immediate action to take is to revise human epistemological ways toward nature. According to Bateson, the epistemological crisis is the core cause of

²³ Chul Chun, *Kreativität und Relativität beim frühen Whitehead: Alfred North Whiteheads frühe Naturphilosophie (1915-1922) – eine Rekonstruktion* (Neukirchen-Vluyn: Neukirchener Verlag, 2010), 198.

²⁴ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 434.

²⁵ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 483.

²⁶ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 494.

²⁷ Gregory Bateson, *Steps to an Ecology of Mind* (1972), 211.

everything and the most serious one.²⁸ Therefore, “ecological thinking” will be a significant solution for the future. This could be abstracted by Bateson’s words: “An impulse still in the human breast to unify and thereby sanctify the total natural world, of which we are.”²⁹

5. Conclusion: Mind, System and Wisdom

Bateson starts at the very fact of being *alive*.³⁰ From there he begins the approach to the mind and ecology. According to him, the mind is the living nature itself.³¹ From this point of view, justice is a question of grounding and sustaining the status of being alive and ecological justice is the question related to the in-depth network of being alive. This is also a path of seeking wider and higher systems of knowledge. For Bateson, “wisdom is the knowledge of the larger interactive system.”³² His truly sensitive sense for this very issue still appears to be a thoroughly solid structure that is no easy to be understood easily even today in the 21st century. However, I am sure that we shall be able to be gifted with insights through his thinking and dialogues yet to be disclosed.

²⁸ “Perhaps we have an even chance of getting through the next twenty years with no disaster more serious than the mere destruction of a nation or group of nations. I believe that his massive aggregation of threats to man and his ecological systems arises out of errors in our habits of thought at deep and partly unconscious levels.” Gregory Bateson, *Steps to an Ecology of Mind* (1972), 487.

²⁹ Gregory Bateson, *Mind and Nature: A Necessary Unity* (1979), 18.

³⁰ Noel G. Charlton, *Understanding Gregory Bateson: Mind, Beauty, and the Sacred Earth* (2008), 29.

³¹ Cf. Chul Chun, “Ecology of Mind: Gregory Bateson’s Understandings of the Sacred,” *Theological Studies* 63 (2013), 155-185; Chul Chun, “Ökologie des Geistes bei Gregory Bateson: Der ökologische Status Geist im Bateson’s systemtheoretischen Denken,” *Philosophical Studies* 86 (2009), 249-274.

³² Gregory Bateson, *Steps to an Ecology of Mind* (1972), 433.

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Beauty and the Creation of Eco Civilizations

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When we talk about a vision for ecological civilizations, we must talk about beauty because no other value is sufficiently encompassing. Beauty is the value at the core of life and at the heart of living in right relationship with all that is alive.

Whitehead made beauty central to his philosophy. He described the world in relational terms and considered these relations to be aesthetic events aimed at “the production of beauty.” One of our most important tasks is to take seriously the idea of “the production of beauty” and to figure out how to make beauty a principle included in the concrete restructuring of our societies.

Unfortunately, in the dominant paradigm of modern, western civilization we have come to believe that beauty is something that is only “in the eye of the beholder,” a judgment that is mere opinion. And we speak of beauty as a superficial and trivial quality, “only skin deep.” These two lessons have been enough to make beauty inconsequential to public life. Although beauty continues to be a contentious topic in the art world, mostly it is impounded within the quarters of cosmetology, fashion, retail sexuality, and consumer marketing. And so, to propose that beauty is a topic worthy of consideration by those engaged in public policy, local government, economic development, education, public health, and environmental advocacy is to elicit a meager range of emotions, somewhat between bewilderment and scorn.

Most efforts to rebuild our relationship with the natural world have maintained modernity’s prejudices against beauty. In fact, though, when we decide in favor of one land use plan over another, choosing between a public greenway and a building development, we make an aesthetic determination. The same holds for decisions about zoning codes, waste management, air and water quality, etc. There is, as well, an aesthetic dimension to our moral codes and our cultural relations. But because we have become convinced of the triviality of beauty, we disregard beauty as a factor in these decisions. The consequence is that we have accepted as some kind of non-negotiable law that our cities and homes should be built cheaply and crudely, degrading our immediate experience of the world.

BEAUTY IS INTRINSIC TO AN ECOLOGICAL PARADIGM

In fact, beauty is intrinsic to an ecological paradigm. It embodies a value system that challenges the modern industrial-techno-capitalist worldview at its core, calling out its life-denying principles and

assumptions. Beauty has to do with the quality of aliveness that inheres in living beings and is intensified in the relations between beings. Life-affirming relations have value and beauty is the way we talk about that value. Beauty is the value most associated with life and with those experiences that enhance our own vitality in relation to the vitality of other beings.

Whitehead's philosophy demands that we take beauty into account in formulating a post-mechanistic paradigm that more accurately describes reality. To counter the lifelessness of mechanism, Whitehead proposed a metaphysics of feeling and made the feeling of relations the very basis of reality. The reintroduction of feeling releases a succession of ideas that counter the assumptions of mechanism and the course of modern thought. Feeling requires subjectivity; subjectivity requires freedom, novelty, purpose, and value. Life returns to the world and it returns not merely as a chaotic scramble for survival but with the ultimate aim toward beauty. "Beauty, moral and aesthetic," writes Whitehead, "is the aim of existence."¹

BEAUTY AS ORGANIZING PRINCIPLE AND AIM

To think of beauty in this way is to expand beauty well beyond the confines of art. This is important to note since in the modern world, the little attention that has been given to beauty in the public sphere has often been solely in relation to the arts. Public art commissions generally limit their funding to formal practices of art such as public sculpture, murals, and signage. But beauty, understood as "the aim of existence," suggests a vision of the world in which structures and processes become life-affirming and intentionally directed toward increase in the "vividness of life."² Beauty reenters our public places not simply as this or that material object but as an organizing principle in the creation of our cultural commons and includes life-practices as a whole.

Those who advocate for a new paradigm, one that is ecologically sound and socially just, have long known that a new way of understanding the structure of reality—a new metaphysics—is needed. But they have given little thought to the relationship of beauty to sustainability. Though images of wilderness often accompany articles on the environment, images that are meant to open our hearts so that we cry out, "Do not turn your back on this beautiful world!" little attention has been given to beauty's crucial role in reframing human-nature relations. Beauty is seldom used as anything more than a visual prompt for discussions that then proceed without reference to its importance in overthrowing the metaphysics of

¹ Cited in *The Philosophy of Alfred North Whitehead*, Paul Arthur Schilpp, editor (La Salle: Open Court, 1941 and 1951), 8. ore than a half-century.

² Alfred North Whitehead, *Adventures of Ideas* (New York: The Free Press, 1933), p. 272.

mechanism and materialism. It's not because beauty isn't real or because we aren't disturbed by its absence, but because we have been trained not to take beauty's value into account.

Without a reintroduction of beauty as an organizing principle, we remain tied to the modern paradigm despite our best efforts to move toward an ecological paradigm. The continuing grip of modernity is evident in the dominant way we have approached the goal of sustainability. As sustainability has gained traction in public discussions, it has been largely reduced to technological innovations that require little, if any, change in the way we live. Carbon-reducing technologies have become the holy grail of sustainability, bearing the wondrous possibility that we can continue our first-world lifestyles and also avoid climate disruption.

Though energy reduction and renewable resource technology are important to the effort to achieve climate stability, we are in need of a broader, deeper foundation for sustainability, one that affirms the indwelling vitality and value of all beings.

SUSTAINABILITY, LIFE-AFFIRMATION, AND BEAUTY

Though the word "sustainability" seems to suggest endurance as its paramount goal, in fact it bears a greater intention: a concern with flourishing. The question is not meant to be, "How can we endure endlessly on the planet?" or "How can we maintain the status quo?" Sustainability cannot be reduced to an end in itself or to technologies for energy reduction and renewable resources, important as these are.

At the heart of the notion of sustainability is an axiological question about value and what is worth sustaining. It is a question that goes beyond mere persistence (though certainly reproductive capacity is a necessary part of the answer). A far greater aesthetic-ethical vision informs the practical work of sustainability, one in which the convergence of beauty and goodness is assumed. The question we need to ask is, "How can we live in life-affirming ways?" and it is synonymous with the question, "Can we live in ways that promote beauty"? Sustainability then becomes a practical guide for arriving at a world flourishing with beauty.

In making beauty the asymptotic aim of ecological civilizations, we complete the replacement of mechanism by an organic worldview. Without the reintroduction of beauty, it will not be possible to reshape civilization in ways that satisfy and nourish the human spirit and honor the subjectivity of all living beings.

PRACTICING BEAUTY

The word "practice" has two lives--as a noun and a verb-- but a single personality, characterized by intentional repetition and aimed at shaping a life. It implies the transformation of a desire or idea into

practical, skillful use. In fact, the etymology of the word, “practice,” goes back to the Greek verb “to accomplish” and such related terms as “fit for action,” “effective,” and “vigorous.”

To return beauty to the world, not simply as “our experience” but as “a part of the structure of life” will not happen without a commitment to making the practice of beauty a part of our daily lives. Shinichi Suzuki, the founder of the Suzuki method of music, is famous for having said, “Practice [*the violin*] only on the days you eat.” Suzuki’s goal was to help rebuild Japanese society after WWII by insuring that it would be a country defined by beauty and morality. He knew that reshaping a worldview, like learning a musical instrument, requires a great deal of practice. It takes practice to break old habits and develop new ones, form new muscles to support a new posture, refine perception, and gain the linguistic capacity to express new feelings.

There is much to be done in devising a practice of beauty. But to begin, I offer four suggestions:

1. Lead with Beauty. It is never enough to think only in terms of form and function, though these are the terms imposed by modernity. When function is allowed to be its own final reason, the result is an inordinate emphasis on efficiency (both in time and cost). And when form is made subservient to function, the result is material production that lacks concern for larger patterns of relation. But begin with the question, “How does this project contribute to the beauty of the world?” and function and form will be made responsible to the great economy of life. That economy is based on the wholeness of relations and the rule that every act is born from wholeness. To make the aesthetic question primary (rather than irrelevant!) is to ask about both the vitality of the individual entity and about how its vitality contributes to the vitality of the whole. That mutuality is key; like starlight on a canvass of dark sky, the one presence reinforces the other. Whitehead’s example is of the sculptures lining the nine portals of Chartres Cathedral: “There are those statues, each with its individual beauty, and all lending themselves to the beauty of the whole.”³ To lead with beauty—beauty understood as life-affirmative relations--immediately broadens concern beyond efficiency and financial gain to concern for the vigor of life systems.

Seung H-sang, the first city architect of Seoul, described his approach to city design as “regeneration” rather than “redevelopment,” shifting the focus from economic development to regeneration, the bringing forth of new life. His distinction is a crucial one, displacing the industrial, western model, dominant in Seoul since the 1960’s, with a model that is ecologically and culturally attuned. In Seung’s vision, architects should look to the eight mountains that surround Seoul to guide contemporary efforts to achieve

³ Ibid, 264.

authenticity and vivacity of place. He describes the city as a “living thing with memories and desires⁴” and looks to traditional culture and nature—not technology and individual flair—as the primary principles for designing an entity that is “becoming rather than being.”⁵ Seung’s defense of the livingness that is present in the world (and his consequent commitment to design cities that bring us to life) is the most important step in shaping an eco-civilization--and in making beauty an organizing principle in our lives.

2. Make Feeling Fundamental to Knowing. The word *aesthetics* literally means, “to feel.” Its original form is Greek and includes the ideas of perceiving and sensing. Its opposite is *anesthetic*, “to numb,” a word that is oddly more familiar to most people, associated with medical advances that defeat the terror of pain by dulling our sensations. To be alive is to be able to feel and to have feelings, to experience the feelings of others and to delight in the things that sustain life. And yet, the modern worldview is based on a denial of feeling as fundamental to the structure of reality.

Feeling, subjectivity, and value are co-implicit. Together they are a counterweight to the assumptions of mechanism, providing the cornerstones for a metaphysics of life. In a world of living subjects, it is through feeling that the world becomes known in its wholeness and in its details; it is feeling that makes mutual adjustment possible; and it is through feeling that the life-affirming consequences of mutual adjustment—that is, beauty--are felt. The answer to the question, “What is beauty or the beautiful” relies on a metaphysics of feeling. And so the practice of beauty is a practice of acknowledging feeling as fundamental, of learning to open in receptivity to the wholeness that is constituted by feelings, and of training ourselves to feel our own life-spirit in relation to others so that (as Willa Cather wrote) our perceptions are made finer and “our eyes can see and our ears can hear what is there around us always.”⁶

3. Speak the Name of Beauty. Because the dominant, western culture assumes that beauty is merely subjective opinion, we have learned to think of beauty as a matter of personal style and confined it to our private lives. And we have accepted the idea that the only legitimate value system is a financial one. When we do try to make beauty a factor in public life, the best we are able to do is translate beauty’s value into tourist dollars or some form of ecological service. For fear of being embarrassed that we can’t give a sound-bite answer to the question, “What do you mean by beauty?” we restrain ourselves from

⁴ <http://www.urbanista.org/issues/local-eyes/news/close-encounters-of-the-seoul-kind-seoul-international-biennale-on-architecture-and-urbanism>

⁵ Seung is critical of the redeveloped Dongdaemun Design Plaza, an ultra modern construction by architect Zaha Hadid in the historical district of Seoul, noting that “the project ignores every surrounding context, and the story of the land.” <https://www.ft.com/content/5b4bc3f2-2e07-11e4-b760-00144feabdc0>

⁶ Willa Cather, *Death Comes to the Archbishop* (Alfred A. Knopf, 1927), p. 50.

speaking about beauty as a value for public consideration. For the same reason, we don't frame our objections to the new high-rise hotel or massive student housing project or big box store in terms of ugliness, though that may be the real reason why we oppose such developments.

But beauty names an experience of something that is in the world—and not simply something constructed by our private sensibilities. We do a grave disservice to ourselves by censoring our references to beauty. In not speaking of beauty in the public realm, we give in to a metaphysical system that denies our experience of the world. We deprive ourselves of a form of non-economic value, powerful and satisfying enough to challenge economism. Most importantly of all, in our silence we make ourselves complicit in the destruction of the world.

We know the power of language to shape culture and to reinforce cultural values. An important part of the practice of beauty will be the reintroduction of aesthetic judgment into our public conversations on the design of all structures, systems, and processes that define community life.

4. Teach Beauty. We need a new paradigm for education, one in which the structure of life is understood as a matter of relations that are thick with value. Our current educational love affair with the STEM disciplines—science, technology, engineering, and math—is clear evidence that we continue to embrace the very way of thinking that has led to so much destruction in the world. (Adding art to this curriculum, making the acronym STEAM, does nothing to undermine the paradigm.) We need education that makes “Life in all its manifestations”⁷ its subject matter and that takes seriously the idea that the whole of life is best understood as an aesthetic process, i.e., as the mutual adjustment of life to life with the aim at contributing to and enjoying “the vividness of life.” Beauty-centric education is not the same as teaching art, art appreciation, or philosophical aesthetics. It is education that is built on a philosophy of relations and a feeling-based epistemology. In contrast to logic-center education with its emphasis on a kind of critical thinking that is reductionist in method (i.e., that assumes that the whole is best understood by reduction to its parts), beauty-centric education assumes that the whole is greater than its parts. Above all, it assumes the “vital beingness of the world.”⁸ The fact that the study of beauty is a rarely a topic of inquiry in our colleges and universities tells us how much work there is to do in shifting from an industrial paradigm to an ecological one.

⁷ Alfred North Whitehead, *The Aims of Education and Other Essays* (New York: The Macmillan Company; repr. 1959), p. 10.

⁸ Robin Wall Kimmerer, “*Speaking of Nature*,” *Orion Magazine*, March/April 2017 (<https://orionmagazine.org/article/speaking-of-nature/>)

CONCLUSION

There is a relationship between our disregard for beauty and the disfigurement of the earth's life-supporting habitats. The aesthetic and moral indifference that characterizes modernity has contributed to our abuse of the natural world and overall devaluing of life. To reintroduce beauty into our metaphysics, our language, our educational systems, and our life practices is necessary if we are to succeed in creating ecological civilizations.

For the Ecological and Posthuman Intelligence

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1. Human cognition in context: Ecological intelligence

Macaques, an old-world monkey, are favored for neuroscience research, because their brains are similar in structure and function to human ones. For instance, visual short-term memory of these two species are similarly limited in capacity, up to about four items. What is surprising, as demonstrated in video clip #1 (Chimp beats human: intelligence test, <http://www.youtube.com/watch?v=Zz7ShiQqLQg>), is that this capacity is almost doubled in chimpanzees, compared to monkeys and humans. While the brain volume exploded from monkeys to humans, the capacity of visual memory hardly changed, whereas chimps whose brains are much smaller than human ones have a much bigger storage of visual information. Humans are not the champion in intelligence, not across the board in cognitive functions.

The oldest fossil record of the primate lineage dates back about 65 million years ago, but estimates based on genetic variations suggest the appearance of primates at about 85 million years ago. Since then, a multitude of ancestor species had sprung up, some then split into the descendants, and most eventually suffered extinction. Apes notably without a tail came along about six to seven million years ago, somewhere in northern Africa, from common ancestors shared with the present-day monkeys with a long tail. These apes including chimpanzees and humans acquired various cognitive capacities endowed by the brain that had been increasing in size.

Chimpanzees beat humans in some intelligence tests, such as visual short-term memory and assessment of spatial configuration. These surprising findings suggest that the evolution of intelligence is not directed linearly toward a goal, but multi-faceted like a patchwork driven by selective pressures that widely vary depending on the environments. Unique aspects of human intelligence, therefore, should not be viewed as evidence of human superiority. Rather, lessons must be learned from the unique features of human intelligence, such as compositionality and inter-subjectivity, and its experience in the history, individually and collectively, that resulted in those features. This way would hopefully lead us to find solutions against novel and global challenges that we face today.

What is intelligence anyway? Some equates intelligence with knowledge. Human beings are intelligent because they know things and facts. The Greek word, episteme, denotes this aspect of intelligence. The encyclopedists in the eighteenth century took this idea real seriously. “Scientia potentia est”, commonly attributed to Sir Francis Bacon, is a famous dictum emphasizing the gnostic nature of

intelligence. A more recent example of this view on intelligence is the ontological approach in the fields of artificial intelligence (beware of the confusion due to polysemy of the word ontology): Typically, intelligence is modeled as knowledge represented by complex semantic networks. The networks consist of concept nodes and the relations connecting the nodes.

Knowing is certainly the sine-qua-non of intelligence, but does not exhaust it. Intelligent behavior requires more than knowledge: the ability to solve problems, for instance, is also crucial. Although explicit knowledge helps find a solution in some cases, solutions more than often come from having done things, i.e., previous experience. Another Greek word, *techne*, is close to this aspect of intelligence. Whereas knowledge may be modeled as representations, problem-solving abilities can be thought of as processes, like computations, algorithms, schemas, etc.

These two views on human intelligence have been the main assumption in modern cognitive science: that cognition is representational and computational. Early roots of these views were provided by such disciplines as cybernetics, cognitive psychology, Chomskyan linguistics, Marr's computational approach to vision, among many others. These views have now spread widely, and serve as theoretical foundations for AI engineering, cognitive neuroscience, neurophilosophy, etc. The common viewpoint that these disciplines on human cognition share is that it is algorithmic computations on the representations of the world in the brain.

Now, a sea-change has recently begun to overturn this traditional view in cognitive science. Adjectives like embedded, embodied, extended, enactive, situated, and grounded have been prepended to qualify cognition, reflecting this new trend. These terms characterize human intelligence in ways that have been overlooked, although some of key ideas were present, in retrospect, in the teachings of early founders in the field. The new conceptualizations by and large emphasize non-representational and non-computational natures of human cognition. Intelligence is now recognized as processual, interactive, and contextual: that is in a word, ecological.

Intelligence is no longer viewed just as a product spawned by the biological tissue of individual human brains, nor as a state of the neural connectivity passively representing information imposed from outside, but is understood as interactive process in the complex web of human, non-human, and even non-living beings. Human cognition is explicated beyond the dichotomy of human versus nature. Human in the nature is properly recognized, as evidenced by the effects during evolution of environmental constraints imprinted on human cognitive functions. No more is the ontology of cognition confined to the network of current human knowledge, but encompasses the affect or influence of non-human life-forms (animals, plants, bacteria, etc.) and perhaps even non-life entities pullulating the entire physical universe.

This ecological view on human cognition resonates quite well with the process philosophy: intelligence is creative processes in which adaptation is actualized out of many potentialities afforded by the reality. At the same time, the reality itself is renewed adaptively by intelligence experiences.

2. Human irrationality: Postmodern versus posthuman views

Considering cognition as representations and computations is a modernist view in that it reduces cognition to physical states of the brain in the deterministic manner. It is also a humanistic view since it regards human intelligence, its rationality in particular, as the gold standard and the utmost goal to be achieved by any form of intelligence. From this viewpoint, the behavior shown by children in video clips #2 (Chimpanzees vs. children learning, <http://www.youtube.com/watch?v=nHuagL7x5Wc>) is surprising, counterintuitive, and unfathomable: Children stick to the instructions when it becomes visibly obvious that the tapping actions no longer make sense for the purpose. Chimpanzees in comparison quickly grasp the gist of the physical configuration and bypass unnecessary movements to their advantage, thus appearing more rational than children. Likewise, a lot of human actions are irrational, even absurd to a modern mind that values rational behavior more than anything.

Modernism glorifies rationality, and locates rational subjectivity at the center of universe. In contrast, postmodernists question this worldview and upholds philosophical, ethical, and religious intuitions that are rejected by modernists. Regarding religion, for instance, modernists deny the holy and consider them as private misbeliefs. Postmodern theologians in contrast try to restore the sacred, sometimes running the risk of appearing irrational. They argue that we trust our intuitions, thoughts that are good to us, although we cannot explain where and how they arise. We should follow what the ancestors teach us and obey what the traditions command. Perhaps, this attitude is encoded in our genes, engrained during evolution as a human characteristic, as suggested in video clip #2 above.

Posthumanists, on the other hand, go beyond postmodernism by overcoming the dichotomy between scientific reasoning and religious intuition, aided by experimental evidence from brain and cognitive sciences. The difference between rational thinking and irrational behavior is quantitative rather than categorical: matters of time scale and degree in complexity. N. Katherine Hayles, a posthumanist art critique and philosopher, provides a good exposition of this view in her recent book *Unthought: The power of the cognitive nonconscious*. Researchers increasingly recognize that unconscious and automatic cognitive processes, or the cognitive nonconscious as she calls them, pervasively govern human behavior. It is based on these processes that sensory stimuli are turned into perception, remembered for later recall, and a response appropriate to them is selected and carried out. For example, when you drive a car to work, most of your actions are initiated and executed unconsciously. Conscious processes intervene only

when an unexpected novelty in the environment demands attention, or recollection of specific details of your previous actions is triggered after the fact.

Now, the cognitive nonconscious support both rational thoughts, those that are appropriate to a given context, and irrational ones like biases, prejudices, and quick fixes that are not quite right for the contexts. There are now ample experimental evidence that human intuitions arise unconsciously from long-term collective experiences. Intuitions emerge as projections, extrapolations, and backbones in the manifold of big data of human experiences recorded explicitly and implicitly in the brain. Human brains are the learning machine par excellence, created, tailored, and optimized by the long evolution of life-forms on earth. Thus, from the perspective of cognitive processes, rational and irrational thoughts and behavior are on a continuum, rather than of difference in kind from each other. It accrues increasing support from psychological and neuroscientific research that consciousness and its self-acclaimed universal rationality is a sort of self-aggrandizement inconsistent with the objective reality. Conscious decisions and rational actions occupy a rather small portion of human cognition, and its rationality is bounded by the circumstances and the unconscious drives.

The cognitive nonconscious also provides a linkage whereby controlled, conscious, and verbal human reasoning connects to and finds its origin from the intelligent processes of non-human and sometimes non-living entities in the physical universe. The neural basis of conscious and nonconscious cognitive processes is one of the hottest topics in cognitive neuroscience, and many exciting discoveries are being made. For instance, the visual system is composed of two parallel subsystems, one for conscious perception, and the other for largely nonconscious visuomotor action (according to Milner and Goodale). These two systems are distinct in terms of anatomical connections, physiological responses, and cognitive dysfunctions when damaged. While both systems subserve nonconscious cognitive functions, conscious verbalization and categorization of the visually perceived appears to require the ventral subsystem, especially on the left hemisphere. Thus, rational thoughts based on conscious deliberation of sensory data are separable from but, in terms of neural basis, contiguous to thoughts and behaviors that arise unconsciously, that is, with ourselves not knowing where and how they come from. On a side note, this dissection of human cognition into conscious and nonconscious components is worth a further consideration from the viewpoint of the Whiteheadian explication of perception: for instance, action-oriented unconscious processing of visual information may be carried out in the pure mode of causal efficacy, while conscious perception in the pure mode of presentational immediacy.

Human cognition and behavior can be modified by many neural mechanisms that differ in time scale. We immediately react to errors, while an action is being carried out. We also recalibrate the control system to meet the demands of the changing environment at a much longer time-scale, hours, days, weeks, or even years. The immediate error correction draws our attention and often triggers conscious

awareness, while the longer-term modification of our behavior are largely unconscious. Attentive and conscious cognition are essential for solving unexpected problems but consume much energy from the viewpoint of brain physiology. The behavioral adjustments come more slowly and yet contribute much to save energy in the long run, by reducing the need to activate costly attentive and conscious control mechanisms. These two modes of behavioral adaptation are implemented by separate brain circuits: for instance, the prefrontal cortex for explicit error recognition and strategic correction, and the cerebellum for implicit learning and unconscious readjustment in neural circuits using sensorimotor feedback.

Now, postmodernists have accused the modernist worldview which sanctifies rationality above everything else as causes for many crises that threaten the modern societies: Nuclear arsenals with the potential of wiping out life from the surface of the earth, global disruption of healthy environments by mass production and insatiable consumerism, dissolution of human community and increasing isolation in over-competition, etc. However, given the recent insights on rationality and its contexts, we may join posthumanists in asking: Is it not the egocentric humanist worldview the real culprit? Criticizing the modern worldview for its solipsistic humanism and anthropocentrism, rather than for its obsession to rationality, is a more appropriate diagnosis of its illness. Only with a more correct diagnosis, will we have a better chance to find pragmatic solutions and improve the sustainability of human and other life-forms in this world.

3. Humility in human intelligence: For the oppressed

Ecological and posthuman understanding of human intelligence puts it in a much wider context beyond a narrow humanism. Cognition is not just in human brains, but extends out to the environment with which the brains interact, namely, the body, the sensory world (Umwelt), and the sociocultural surroundings. In this sense, the ecological and posthuman view pushes postmodernism further with its anti-anthropocentrism, and thereby emphasize humility: It no longer regards human intelligence as a foundational goal by which any intelligence, either natural or artificial, is to be judged. It rejects the stratification of cognitive power which is justified for the human species above all else in the universe. In essence, what we begin to acknowledge is that we occupy a humble position in the world, and that humanity needs humility so as not to outrun our fortune in it.

This viewpoint leads us to deconstruct human intelligence, and then reconstruct it as a liberating agency in the world. Deconstructed, it is quite negligible in comparison to the intelligence of the vast universe. At the same time, it has the great potential of being a faithful guardian of the globe and participating in divine creativity that begets and sustains it. We can and ought to be the savior of ourselves and our living and non-living neighbors. This calling is for us and on us. The question is then who among us can and will rise up to the task.

God is partial to the oppressed, and so should we. The reality is always unfair and justice distorted by power imbalance, and God is always on the side of the weak and vulnerable, providing the potentialities that would correct the unfairness and injustice. It is divine wishes that the blind see, the oppressed are freed, and the universe is set at liberty. The road to salvation is revealed only to those who look up for the ideals above, like the Israelites who looked up at the fiery serpent set high on a pole, and like the Christians who look up at Jesus on the cross. In contrast, those who are powerful in the current world look down contently on what they have in hands. They look down on the underlings with contempt and also with the worry what the latter might do against them. The poor have nothing to look at in their empty hands and will raise their head, longing for the highest and the best of all possible worlds. The reality of the sacred is the only hope for the oppressed, while unlikely a concern for the privileged. Being humble is to recognize the holy and the limits in ourselves. Holiness is not just what we recognize, but what we earn and what we achieve by doing things right. The sacred is not what we are, but what we struggle to become. The holy are creative processes, good becomings, and incarnations that are truly intelligent.

In summary, the new cognitive science, its views on intelligence in particular, is posthuman and ecological. The debate over human irrationality between modernists and postmodernists is no longer a serious battle front. Once irrational or nonconscious processes are recognized as essential constituents of human cognition that have evolved with the material and social environments, our concept of intelligence is generalized out of the brain, incorporating first the body that expresses human intentionality, and further encompassing the affordances endowed and the constraints imposed by the materiality of physical and social worlds surrounding human souls. While I fully subscribe this current view that human intelligence is posthuman and ecological, that is, processual, interactive, and contextual, I would argue that this is not good enough. Being ecological and posthuman should not mean to sustain status quo of everything that stands now. Rather, the task for the truly ecological and posthuman is to unravel superstitious and reality-distorting worldviews that only serve to disguise the hubris and hypocrisy of the powerful and to focus our attention on the current sufferings in the world. The very strength of the intelligent Homo sapiens has been to build an ever-enlarging world community that is just and fair for all its constituents. This will be the only worthy survival for future human beings as well

Challenges of Life Science and Technology to an Ecological Worldview

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Post-Humanism Based on Postmodern Ecology

Our worldview determines our ways of thinking and methods for scientific inquiry, whether or not we are conscious of it. The scientific revolution of the 16th century, as well as the human-centered modern worldview that overcame the theocentric medieval perspective, provided the basis for a rational and mechanistic approach to separating nature and man, and to explaining nature as an object through the laws of matter and motion. This mechanistic approach to nature has provided a very useful means for scientific exploration of objects including life organisms, the philosophical background for the development of modern natural sciences. Further, it developed the reductionist approach to understanding the central properties of objects, which continuously reduces objects into smaller units. Needless to say, science and technology, which have developed rapidly on the basis of this worldview, have improved the material quality of our lives and freed human beings from the harsh conditions of nature. However, this is nothing more than a “falling upward”¹ process for humanity, resulting in the overgrowth of human power leading to energy depletion, environmental destruction, global warming, and a worldwide crisis of ecosystem. Through the study of world history, we learned of the rise and fall of various civilizations, such as the Egyptians and Mayans. Although we strive to find political and social causes for the decline of civilizations, such as war, the most important cause was environmental change.² At present, human beings face extreme environmental changes and risks, including population explosion due to the development of life science and medical technology; depletion of energy resources and climate change due to greenhouse gases created by fossil fuel abuse. We are also experiencing frequent natural disasters including viral epidemics and contamination of water due to the reduction of primeval forests. Because previous civilizations in history were territorial, their rise and fall could not threaten the whole of humanity; on the contrary, decline of the globalized modern civilization is expected to pose a serious threat to humanity as a species. Thus, to survive the present environmental crisis, human beings as a species must overcome various problems derived from their modern, human-centered worldview, moving

¹ Charles Birch and John B. Cobb, *The Liberation of Life* (1990), pp 194-202

² Jared Diamond, *Collapse* (2005), pp. 486-525.

toward a new, ecological worldview based on postmodern post-humanism. This new civilization based on the ecological worldview has been suggested as different names but the same context: the Gaia hypothesis³ that considers the Earth as a living organism in which organisms and non-organisms evolve and develop by close interactions; the Ecozoic Era⁴ concept of Thomas Berry and Brian Swimme; and the ecological model⁵ of Charles Birch and John B. Cobb. On the other hand, the rapid development of life science and technology brought another post-humanism with enhanced human capability based on technologies in the 21st century.

Rapid Development of Life Science and Technology

In the 20th century, the rapid development of molecular biology based on the mechanistic reductionist methodology has confirmed Darwin's theory of evolution and revealed that all organisms on Earth are maintained in the same fashion from the same genetic information in DNA. In the 21st century, the genome era has already been realized and the genome, the complete genetic information of any living organism including a human, can be quickly, easily, and cheaply determined. Living organisms are recognized as information. We rush toward an era in which humans design and produce living things, including themselves, and expand into machines.

The general public has not yet overcome its fears about genetically modified organisms, or GMOs. However, after finishing the Human Genome Project in 2003, life science has been opening the field of "synthetic biology". Synthetic biology refers to the creation of whole organisms, living systems of cell organelles, and proteins through design and synthesis at the molecular level using the basic building blocks of life.⁶ In this respect, a new era has begun in which human beings intellectually design living organisms. This synthesis began with bacterial systems, and gradually expanded to complex living organisms. Recent efforts have been made to regenerate extinct species or to investigate how life works by synthesizing human genomes. Synthetic biology is a refined expansion of the mechanistic theory of life by Jacques Monod, who said, "the secret of life is revealed at the level of chemical composition. If we can describe the chemical order as well as the laws of assembly, the secret of life will be publicly declared and the event will end the controversy of life."⁷ Synthetic biology ultimately seeks to understand the laws of assembly of life as matter. Furthermore, synthetic biology aims to create new organisms or biosystems

³ James Lovelock, *Gaia: A new look at life on Earth* (1979), pp 241-272

⁴ Brian Swimme and Thomas Berry, *The Universe Story* (1994), pp. 375-495.

⁵ Charles Birch and John B. Cobb, *The Liberation of Life* (1990), pp. 119-164.

⁶ Kiwon Song et al., *Life Sciences, Challenged God* (2017), pp. 16-46.

⁷ Jacques Monod, *Chance and Necessity* (1974).

capable of necessary tasks by redesigning and applying concepts of engineering to current organisms or biosystems incapable of such tasks.⁸

Simultaneously, genome editing technology using the “CRISPR-Cas9”, which can correct or edit specific genetic information in a genome, has spread rapidly and been successfully applied or tested in most living organisms as of 2013. CRISPR-Cas9 is an excellent molecular scissor tool to cut and modify the genome with great precision and low cost. In the fields of life sciences and biotechnology, gene scissors inhabit a critical methodological position, making it easy to introduce a desired external gene into a genome, to edit the genome of an organism, or to transform genes to create living organisms with new genetic traits and altered genetic information. CRISPR-Cas9 has been applied to various fields beyond molecular biology, and has been used for a variety of purposes in numerous organisms such as bacteria, insects, plants, animals, and humans. CRISPR-Cas9 genome editing tool can easily correct, design, and transform living organisms, encouraging and facilitating the trend towards synthetic biology. This technology has ranked first among the top 10 most innovative science and technology developments every year since 2013. In July 2017, a study was published in which the CRISPR-Cas9 technology was successfully applied to fertilized human eggs; criteria for gene correction or editing in fertilized eggs is now the most important issue in the scientific community worldwide. Developments in life science bring us ever closer to realizing the world imagined in the science fiction novel *Brave New World*, written by Aldous Huxley in 1932, or the science fiction film *Gattaca*, released in 1997.

Developments in psychology and cognitive science have accelerated studies intending to understand reductively how the brain works. These studies revealed what once described in terms of human spirit or mind, as the operation of substances such as hormones and neurotransmitters. Current research on living organisms is rapidly evolving into the investigation of the brain, beyond the genome. The Brain-Mapping Project aiming to understand the network of 100 billion nerve cells in the human brain, began in 2013 and expects to reach completion in 15 to 20 years.

Additionally, brain-computer interface (BCI) devices, which connect swiftly advancing artificial intelligence (AI) to human brain functions, are developing at a rapid pace. BCI devices facilitate direct communication between a brain and computer. Thus, BCI devices enable human beings to communicate with computers without input devices such as a mouse or a keyboard; brain activity is input into the computer directly. BCI devices allow the brain to control the computer and its peripheral devices through brain signals alone, without moving muscles via motor nerves; the computer and its peripheral devices thus operate according to human intent. This technology will be very useful for patients with motor neuron dysfunction. Once commercialized, the technology could change life significantly, as seen in

⁸ Drew Endy (2005), “Foundations for engineering biology,” *Nature* 438: pp. 449-453.

science fiction films. For example, remote devices could be controlled by brain functions of the people during consciousness, learning, and thinking. Our reality moves towards a world in which machines react to stimuli recognized by life forms, rather than one in which life forms respond to stimuli.⁹

The development of life sciences technology continues to prolong the average life expectancy of human beings. In today's globalized, post-capitalist world, life science technologies uncontrollably accelerate the human desire to exceed the limits of existence as a living organism. We now live in a society in which aging is not a natural phenomenon but a pathology¹⁰ to be overcome. A remarkable example of this phenomenon is Project Gilgamesh, run by Calico ("California Life Company"), a biotech company founded by Google that dreams of human immortality. The desire to prolong human life is further reinforced by the development of artificial organs and body parts called prostheses, which can replace and assume the functions of damaged or missing parts of the human body.

The rapid development of life science and medical technologies including synthetic biology, genome editing, brain science, BCI devices, and artificial prostheses, as mentioned in this article, poses questions about the definition of life and the identity of humans as a species: what is life, what is a human, and how should the relationship between human and machine tools be established? It is impossible to halt development of these technologies in our globalized, post-capitalist system. Therefore, we are urgently required to define what kind of worldview should accommodate these technologies.

How Should Ecology-Based Post-Humanism Embrace Post-Humanism through Life Science and Technology?

The development of life science and technology suggests that, in the near future, technology will infinitely extend humans' fundamental abilities and overcome the limits of mortality and disease, enabling mankind to exceed present human capacity. This new type of human race is called the post-human¹¹, and the tendency is called post-humanism. We also used the term trans-humanism to distinguish it from the post-humanism that refers to a new worldview to escape the human-centered modernity mentioned previously. Max More, an advocate of trans-humanism, describes it as "a set of life philosophies that continue and accelerate the evolution of intellectual life by using scientific and technological means to go beyond the present human form and limitations under guidance by the principles and values of life-promoting principles." Nick Bostrom, who sparked the debate over post-humans, says, "What matters is not what the present human species or human beings are, but what kind of

⁹ Kiwon Song, *Life* (2014), pp. 237-258.

¹⁰ Aubrey de Grey, *Ending Aging* (2007).

¹¹ Rosi Braidotti, *The Posthuman* (2013), pp. 13-54.

being humanity can become in the future.”¹² In contrast, Francis Fukuyama argues that the remarkable development of biotechnology threatens the essence of human beings with its enormous influence, which can change the very nature of human beings. Fukuyama warns the dangers of a new history of post-humans, human descendants who are no longer human.¹³

In this presentation, I would like to open a discussion of how we can answer the questions of defining life and human identity as species, posed by recent developments in life science and technology, in the perspective of the worldview of ecological post-humanism, which emphasizes the relationships required for survival of the human species on Earth. I also invite an open debate on how post-humans accelerated by life science and technology can be embraced by ecological post-humanism.

¹² Nick Bostrom, *Superintelligence* (2009).

¹³ Francis Fukuyama, *Our Posthuman Future: Consequence of the Biotechnology Revolution* (2003).

Session 5: Politics and Policies for Ecological Civilization

We can move toward ecological civilization by means of policies and politics. We hope grass root movement and green politics will be activated to change the discourse and governance in regarding for transition. Globalization have adversely paved the way for new ecological politics. Many ecovillages and NGOs around the world are working together. The local governments which are adhere to everyday life than the central government try to execute innovative policies. Civic activists also work for involving the residents with ecological way of life. These movements will change citizens' sensitivity and reshape the purpose of life. When these forces come together, it generates a political power which can control corporations and capital that are profit-driven, transforming the framework of national and global politics.

Green Movement and Green Party

Jiye Shin

President of the Green Party Seoul

A couple of citizens gathered at the center square in the Republic of Korea a year ago. They demanded that the president retreat. The criminal fact— influence-peddling, corruption scandal-- made mainly by the president was revealed. The rally started in October 2016, lasted more than half a year. The assembly took place nationwide and was peaceful. A more than 16.5 million people gathered. On some days, 2.3 million people gathered. The demand for citizen's anger and social change towards erroneous politics was the most powerful motivity.

Political power of green movement

For the past ten years, the Republic of Korea government ruined the democratic system. In particular president Lee was a monster born by the economic growth first principle of Korean society. Being a CEO of a huge construction company, he has 14 illegal acts in violation of the stock operation, the election law from before the candidate period. He won the 747 promise (7% economic growth, national income of 40,000 dollars to achieve, the seventh largest economy by the world) in the foreground. It was an explicit pledge but fictional thing.

His representative civil engineering project is the four major river projects. This was also called "Korean Peninsula Grand Canal Project", "Four Great River Regeneration Project". He asserted that this project will bring about logistics innovation in the Republic of Korea. In addition to that, he promised that flood management would be possible, raising land prices for the development of surrounding tourist spots, making work as well. All these turned out to be lies. Employment did not increase. Green algal occurs, the water goes bad. Fortunately, land prices did not rise as well. The dam that prevented the river had to be fixed as the design was mistaken and continued. It was prudent to destroy the dam and run the river again. I can not tell how long it will take for a river to flow again. The Korean government used 22 trillion won (20 billion USD) of money to use and killed the river. Until now Korea has destroyed many communities and life, nature through development growth logic. South Korean politicians did not control the desire of society, but rather encouraged them. The most important thing for them is to win the election. That is why, they have only short-sighted policies. Politicians have tempted people to raise their house prices Every time in the election.

Gandhi advised that one Earth is sufficient to meet human needs, but that three or four Earths are insufficient for human greed. In the 1950s humanity was 2.5 billion people, now it reaches 7 billion

people. It is expected to exceed 9 billion people by 2050. Someone has to warn of climate change problems and neo - liberalism which are getting worse. An alternative policy must be created and presented. The important thing is that you do not want good intentions from existing politicians. For the true choice the green movement must go with the political movement. Green movement Must own democratic power.

Strengthen democracy

Greedy and politics are tightly involved, weakening the principle of democracy of self-governance of citizens. Most of the recent important decisions are made by stakeholders of intimate politicians, finance, religion, and military affairs with capital.

A civic committee was created to decide to cancel the construction of the newly created nuclear power plant. Some experts are dissatisfied with citizen participation. It is from the idea that the nuclear power plant is an area of experts. None of the governments have heard energy policies for citizens. The usual experts, bureaucrats, politicians monopolized the decision. As a result, energy policies were separated from the lives of citizens. They provided erroneous information that nuclear power is good for the environment. All the profits made thus returned to the chaebol. They made money by selling the environment. They killed their lives and built their own castles.

Many science in contemporary industrial society is called “post-normal science”. Today is “Facts are uncertain, values in dispute, stakes high and decisions urgent”. Nuclear power plants are the most popular examples. There is no correct answer to the discussion about nuclear power generation. That's why we should not give a decision right to select few people. Social consensus is necessary. To cope with this situation, the reinforcement of democracy is essential. If people knowing that millions tons of plastic, that are thrown into the ocean, threaten human life will easily destroy plastics products. It is also the same for citizens to decide on building a nuclear power plant that threatens the future of mankind.

Fortunately, the citizens of Korea have experienced that they can change their own politics. The experience of detaining the incumbent President who committed illegal activities is very valuable. The newly entered government is deeply concerned with the opinions of citizens. But it is doubtful whether this will be maintained. Here is the reason for creating a political system through citizen autonomy. The important thing is that the lives of civic groups should not be decided by minority groups.

Currently, some of the green movement activists are campaigning for political reform in Korea. They try to establish an election system that reflects the opinions of citizens. Like a countries Germany, Netherlands and Sweden, which have a green or eco-participation party, have a well-considered election system.

Green party as specific political option

Koreans are accustomed to two-party systems. The Green Party is a fledgling political party formed in 2012. We haven't won the election yet, but it's a party with 10,000 citizens. Green Party warns that the world is mired in the wrong logic of growth. We believe that erroneous judgment has affected ecological climate, economy and financial system. We need to select changes to make human race survive. We must change the industrial structure to get rid of energy poisoning. We need to grow renewable energy and create policies to increase energy efficiency. We must try to prevent social imbalance by neoliberalism. In order to get out of a work poisoning society, we must legalize working hours and provide basic income. We must strengthen the non - residential land holding tax. For the rights of minorities, it is necessary to enact a discrimination prohibition law to ensure freedom of family constitution. We support peace negotiations for the peace of the Korean Peninsula. Besides this, animal rights, greening of education, food sovereignty and so on. All of change towards an ecological society.

The culture of the Green party is another important value. Proportional candidates for the Green Party are decided through the elections that all the party members participated in. Regional district elections will be decided by regional members. The green Party Representative will pick everything by lottery. A small number of delegates shall be separately determined within the range of 10% of the total. Have the opportunity for everyone to be representative. It should also be noted that women's members exceed a majority. Seoul has more than 60% party members as women. Besides this, we try to ensure that the ratio of women to all the members of the parliament is over 50%. We are making an effort to be a main body of women's politics. Nationwide Steering Committee will make regular decisions by collecting 30 to 40 members of individual regional parties and committees. Discuss important decisions on a regional basis and share them. We must also pay attention to the activities of young people. For many areas including the National Party Steering Committee chairperson, the steering committee chairpersons and activists are young people. When we start all the events, read the Equality Culture Promise paper. Promises to jointly deal with unintended internal violence. Such a culture and provision will contribute to create the management process itself at democratic training grounds. Party members will directly experience various democratic principles and nurture citizenship.

The possibilities of global greens

The Greens is in the whole world. Green parties exist in more than 90 countries of the world. The president of Austria is from the Green Party. In the Netherlands' general election, 14 Green Party members were elected. The green parties of each country are connected to the global network. It is the

world's largest political community. We follow a joint charter with six values written, respecting ecological wisdom, social justice, participating democracy, non-violence, sustainable growth, diversity. Region organization in Europe, America, Africa, Asia Pacific. As a member living in Mother Earth, act jointly and jointly for a sustainable Earth.

Global Greens opens a general meeting every five years. This year, in March 2017, it was held in Liverpool, England. More than 1,900 global green party members gathered. From the issue of marine pollution to LGBT we discussed a number of agenda items. In the end, the world Green Party announced the Liverpool Declaration 2017. Stabilizing climate change, ecology, democracy, social justice, sustainable development, the will to peace. Also, five years later the world's Green Party convention decided to hold in the Asia-Pacific region.

It was first time to participate a general meeting. Through participation of the General Assembly this time, we confirmed that there are many things that Korea must take charge at Asia Pacific region level. Also, peace and environmental problem is a matter of crossing the border. The Korean Green Party is preparing for cooperation with the whole world green parties. At the same time we are preparing our contribution. It is expected that the Asia Pacific branch will move to South Korea. In line with this, the Greens of South Korea is also discussing raising the membership fee for Global Greens at 1% level of the overall party expenses.

The word "Thinking globally, acting locally" is changed "Think and Act Globally and Locally at the same time". The Fukushima nuclear power plant accident occurred in Japan, but it is not only disaster in Japan. It is affected not only by Korea, but also far away America. The problems of Sad and nuclear weapons have influenced the peace of Northeast Asia and the whole world beyond the Korean Peninsula. The Korean Green Party brought an emergency gathering stage with Jill Stein, about military demand and peace, who was a candidate for the Green Party in the past US presidential election. Now, we must sit around a roundtable crossing over the border with a solid goal of solving the global problem and start solidarity and cooperation.

Beyond Politicophobia

According to the report of the Secretariat of the National Assembly last year, the public distrust of the National Assembly members will be 74 points per 100 points. It is higher than the average of 59 points in the world, similar to Brazil. The perception of politics is similar. Some people say "That person is political" has a negative meaning. Many citizens are politician is dirty and do the idea that tricks are overflowing. A person needs courage to join a party. In 2015, 5 million people participating in political parties nationwide. It will not be 10% of the total population. Only 12.5% of them will pay membership fees to political parties.

Weakening the overall function of political parties is not a problem of Korea alone. The decline of party movement is a worldwide phenomenon. However, political hatred increases the interests of vested owners. Educators, experts, civil society also have to work for political change. In order to overcome the global crisis, we must start politics for our lives. It is time to embrace the power to green politics. The future is green or nothing.

Session 6: Toward an Ecological Transition in Cities

The population of Seoul, Korea is around 10 million, and the population of Los Angeles County, including 3 million in Los Angeles city, is also around 10 million. The ecological transition of both cities has global visibility. Fortunately, desirable ecological transition is advancing in both cities. Since the inauguration of Mayor Wonsoo Park, Seoul has attained many achievements such as energy saving, social economy, and restoration housing policy. Meanwhile, California, including Los Angeles County, is leading the way in environmental and ecological policies in the US. It focuses on agriculture, tourism, education and culture, thereby maintaining pro-environmental and productive economy. The connection between these two cities brings realistic reorientation as we expect.

Pando Populus

Eugene Shirley

Founding president and CEO of Pando Populus

Pando Populus connects a broad and diverse group of change-makers together to create hyper-local impact. We are a young organization only learning how best to be effective, so we are limiting our focus for now to Los Angeles County.

Our ambition is to create a different way of living than what has been dominant. We aim for communities of ecological resilience and self-sufficiency, what John Cobb describes as “ecological civilization” and Pope Francis calls “integral ecology.” I use these terms interchangeably, but find that the language of “resilience” can sometimes communicate effectively across the ideologies of the American political spectrum when the language of “ecology” might fail for seeming to imply a “liberal” agenda; and that the language of “self-sufficiency” can appeal to those who have been raised in a tradition of individualism, such as is especially pervasive in the American west. I would suggest that true self-sufficiency and deep resiliency encompass a notion of the common good that extends to the whole of the natural world, and that “ecological civilization” and “integral ecology” reference. I also believe that all of these terms suggest transdisciplinary ambitions.

We find natural allies among four groups of change-makers, all of which are working to achieve broad, transdisciplinary ambitions but in different ways, using different language, symbols, and skillsets. The groups include: designers and architects; believers from a broad range of faith traditions; sustainability professionals from government, academic institutions, and business; and activists from civil society. All typically employ broad views and some form of systems thinking. But their cross-silo participation with each other can be rare (for example, between designers and faith leaders, between activists with different areas of specialty focus, and even between sustainability professionals who approach their work from different professional perspectives, whether business, government, or the academy). Hence, we focus on thickening the connective tissue across and between these groups to meet the broad, overarching objective of creating a more resilient LA. This strategic focus allows us to leverage the experience, ideas, and talent of those groups that are already taking big picture views, but then expand opportunities and increase capacity through their collaboration with each other. It also gets diverse groups working together in specific ways with project goals that rise above siloed interests.

Examples of our work in connecting change-makers together include launching a taskforce of Chief Sustainability Officers throughout Los Angeles County, for the purpose of giving strategic direction

to our work and offering insight and help in reaching countywide ambitions; bringing faith leaders together with designers and sustainability folks to test out ideas for creating a more ecologically resilient council district within the city; and sponsoring an event to bring citywide environmental activists together to advise on developing a mobilization plan for resiliency.

We focus on hyper-local impact rather than work at the policy level. In part, this is because we don't have policy expertise. It is also because working to create street addresses of change in specific locations offers "laboratory" environments for assessing the real-world effectiveness of our ideas – and so we're eager to seek out "small bet" opportunities that give us the chance to do this. Finally, hyper-local focus provides options for making change happen now of the kind we want to see – even if it is one street address at a time. We are then in position to connect these street addresses of change to one another, and eventually to create a kind of "patchwork quilt" of resiliency. In this way, we can model in aggregate the kinds of big ideas we care about.

Examples of our hyper-local events and initiatives include a community garden at a homeless shelter that aimed to become the first eco-homeless facility in the county; an event to reimagine a street address in Los Angeles adjacent to an area infamously named "Death Alley;" the creation of an eco-village in the City of Monrovia in collaboration with the Maryknoll Sisters (now in the planning process); and an effort to draw attention to and help save the 100-acre Pando tree-forest in south central Utah that is our namesake.

Some Ideas for Urban Ecological Transformation: The Experience of the Regional Cooperation in the Northeastern Areas in Seoul

Gunna Jung

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1. City as a complex system

A city has become the main space of human activities. More than half (54%, 2014) of the population lives in urban area globally, and 92% of Koreans live in cities (2015). Cities are the main culprits of ecological crises, and at the same time desperately need ecological transformation as they have become vulnerable to environmental pollution. In recent years, cities have been making efforts to respond to the ecological crisis, but remarkable achievements would not be obtained without a fundamental change worthy of ecological transformation.

What are the issues related to the ecological transformation of the cities? One of the complicated issues is based on the fact that a city is maintained through constant interactions among diverse interest groups. In a word, a city is a complex system composed of the daily lives of its dwellers. Therefore, it would be a naive idea to expect that the ecological transformation of a city would take place if we just provided well intended policies. For example, there is a public sector executing urban planning programs with administrative, legal, and economic resources on the one end, and there are people responding against it pursuing their own private interests on the other end. There are also many indifferent citizens in the grey area.

Few architectural images are more powerful than the spectacle of the Pruitt-Igoe housing project crashing to the ground. The Pruitt-Igoe project in St. Louis, Missouri in 1950s, has become an icon of the most dramatic government failure that had launched as a policy with good intentions but produced the worst results. The Project began with a grand goal of urban regeneration and poor housing settlement with a large amount of financial support from the state and federal government. However, all 33 buildings were subsequently demolished with explosives in the mid-1970s. Causes of the failure of the policy still contain many controversies and stories, but it does illustrate the inability of top-down, bureaucratic urban policy, one without holistic perspective, in dealing with urban issues. The failure is a synthetic output of failures in urban housing policy, economic policy, and regeneration policy as well as a consequence of racial discrimination (Bristo, G. Katharine, 1991, *The Pruitt-Igoe Myth*).

Jane Jacobs, in her great work (*The Death and Life of Great American Cities*, 1961), argues that cities are the natural habitats of humans and that people cannot be separated from natural processes and complex systems. She also emphasized ‘any of the processes at work in natural ecologies and in our own economies are amazingly similar’ (Jacobs, Jane, *The Economy of Regions* (Annual E. F. Schumacher Lectures Book 3, 1983)

If Rachel Carson was concerned with ecosystems, the human ecosystem was Jacobs’ subject, though she would not have been considered an environmentalist at the time. Rebelling against the modernist and car-oriented orthodoxy of her time, Jacobs argued for lively neighborhoods, walking areas, and human interaction. (SSPPJournal Sustainability, Jane Jacobs, the City, and Sustainability, January. 8, 2011). Jacobs insisted that urban policy should not be a policy based on engineers and hardware, but on a place of life where the natural, evolutionary changes are going to take place. According to Jacobs, therefore, urban policy should be based on software and contents, a friend of humanities who creates memories and stories.

2. Transition Management

The view of understanding a city as an ecosystem or a complex system calls for a fundamentally new approach to urban planning/policy. Policies for an urban ecological transformation are not an exception. In Europe, policy experiments are underway for this transition, and the process and outcomes of these experiments have been analyzed and theorized as a theoretical discussion on Transition Management. “Transition management is a coordinated effort to influence the speed and direction of large-scale social change based on the concepts of social transitions and sustainable development” (Loorbach, Derk, *Governance for sustainability, Sustainability: Science, Practice, & Policy*, Fall 2007, Volume 3, Issue 2).

For example, (1) in the Netherlands, an experimental governance approach has been implemented in the areas of sustainable energy supply, agriculture, healthcare, and water management since 2001 (Loorbach, Derk, 2007). (2) Six regions in Europe (the Valencia region in Spain; the Hessen region in Germany; Emilia Romagna in Italy, Central Hungary, Lower Silesia in Poland and West Midlands in England) participate in an European regional collaboration program (2013 Pioneers into Practice program) within the ‘Climate-KIC’. Climate-KIC is a European network program aiming to provide the innovation, entrepreneurship, education and expert guidance needed to shape Europe's ambitious climate change agenda. ‘2013 Pioneers into Practice’ is a bottom-up regional program focusing on four themes: assessing climate change and managing its drivers, transitioning to resilient, low-carbon cities, developing zero-carbon production systems and advancing adaptive water management. (3) The OECD project on System Innovation began under the framework of the activities of the OECD Working Party on Technology and Innovation Policy (TIP). The goal is to help policy makers with policies in the context of

sustainability and green growth. A second phase of the project continued in 2015-2016 examining how system innovation approaches could promote green innovation.

Major features of transition management approach are as follows:

- A combined analysis of system dynamics and actor behavior yields a very general idea of the dynamics in society, enabling us to reflect upon and analyze actions and strategies of actors in these processes.
- Transition management is being co-developed in theory and practice by a wide network of scholars, policy makers, businesses, and nongovernmental organizations (NGOs).
- The starting point is that society is analyzed in terms of complex systems with typical behavior and mechanisms (for example coevolution, emergence, and adaptation).
- Neither top-down government policies nor bottom-up market forces can alone support directed long-term sector-wide changes; they can only occur through combinations of government policies, market forces, and bottom-up initiatives from civil society.
- Transition management distinguishes between stages in the transition: a take-off phase, an acceleration phase and a phase of stabilization.

Key findings of the first phase of the OECD project on System Innovation are:

- Policy makers must have a clear understanding of the systemic nature of problem and their role in instituting changes through innovation.
- Many technologies are already available to enable transitions in areas such as sustainable building, the bio-economy or smart cities, but without changes to institutions, laws, regulations, market mechanisms and socio-cultural attitudes, many of the solutions fail to scale.
- Transition management and participatory approaches can help but they also require time, consistency and stability in policy direction.
- Understanding and managing resistance to change is a key part of system innovation. Case studies highlight that to overcome resistance, one possible solution is to divide the problem into smaller pieces or engage in public-private partnerships, Need for new administrative capabilities and new needs for coordination across governments and in innovation ecosystems.
- Long-term policy strategies, with a defined roadmap and policy targets with milestone and impact indicators. (OECD project on System Innovation: <https://www.innovationpolicyplatform.org/system-innovation-oecd-project>)

3. The Experiment of the Regional Cooperation in Seoul

An important issue in transition management research is how the present society could be turned into a sustainable one. The transition management approach shows that a transition can not be realized through a powerful one size fits all approach unilaterally enforced from the top. Instead, it is only possible through these approaches combined: innovative experiments to cross borders and boundaries, participatory programs that includes diverse interests, conflicting groups, interdisciplinary collaborations of the various fields, and adaptations of technology, institutions and culture toward a common goal.

In this presentation, I introduce the case of cooperative regional development experiments in the northeastern region of Seoul. The project started 10 years ago and is still ongoing. Although this project was not explicitly aimed at ecological transformation, and while the evolving process and performance still needs to be thoroughly analyzed and evaluated, it can be called as an innovative and participatory attempt to change the region with a long-term perspective. Through this project, we intend to accumulate intangible social capital such as cooperation, mutual trust, empowerment of residents, and capacity building in the area, which is an important but invisible asset required to achieve long-term social transformation.

Historically, the four northeastern provinces of Seoul have been a node of flows of human and material resources connecting Seoul and the northern part of the Korean peninsula. However, In the modern history of Korea, this area became the victim of The Korean War (1950-1953) and the division of the peninsula after the war. Development has been hampered and urban planning has not been properly implemented for a long time. Urban infrastructure such as buildings, roads and traffic system have been degraded, and residential areas have continued to decline. The ongoing economic downturn has transformed the area into a ‘commuter Town’ in Seoul.

The strategy of development was to find and use intangible assets such as landscapes surrounded by mountains or remnants of old residential areas such as traditional streets and houses, which were not considered assets in the past. In that sense, it also meant a social innovation strategy as a new approach to regional development. It was also a participatory and endogenous development strategy that enhanced the capacity of local development from the bottom by strengthening the capacity of the citizens of the community. It was an alternative development strategy that created a circulation system of the local economy based on the social economy. Finally, it was a sustainable development strategy to bring renewable energy, local food, and community buildings to the local economic circulation. In this regard, it can be said that this experiment was a preliminary experiment for ecological transformation of the region.

In terms of participation and cooperation, the process was an experiment of triple cooperation. Civil society such as universities and local residents, local governments of Northeastern 4 districts, and the

Seoul metropolitan government participated in the project together. Through this private-public partnership, mutual learning on democratic governance and enhancement of innovation capacity were attempted.

The incubating role of the public sectors were approved and accepted especially in supporting social economy and community building. However, the long-term goal is to strengthen the community's own capabilities preparing for the era when innovative leaders in the public sectors leave their offices. Korea has been a society where governments and corporations have strong resources and exert influence on most of the issues. In contrast, civic engagement and grassroots voice have been weak. Therefore, when the resources of civil society are insufficient and vulnerable, it is inevitable for the public sector to lead the change especially at the phases of takeoff and acceleration.

The keyword that describes the vision of the project was 'Ancient Future'. It comes from the title of the book 'Ancient Futures: Lessons from Ladakh for a Globalizing World (1991)' written by Helena Norberg-Hodge. Her book raises important questions about the notion of progress, and explores the root causes of the problems faced by a highly industrialized society. Therefore, 'Ancient Future' is not a concept of 'returning to the past' but a concept to find an alternative future by reinterpreting tradition and modernity by discovering the principle of integrated life in the region. 'Ancient future' as a futuristic vision of the region aims to create a self-sufficient, sustainable city that cooperates with other regions with reference to the past historical characteristics of this region, which was a node of resource circulation and cultural exchanges.

However, there remains a big challenge for the civil society to grow to take the lead and initiative. As is too often the case, the public sector is primarily focused on making short-term, visible results, indifferent and paying little attention to strengthening civil society capacity with long-term prospects. Besides, there are many goals yet to come.

The most important factor for them would be 'time'. A long and steady effort should be put until a visible outcome is achieved. Building relationships among people, and saving intangible social capital is equal to change people and their mind requiring consistency, commitment, and painstaking efforts. Compared to this approach, hardware centered approaches would be relatively easier to achieve. An important implication is that the priority of resource allocation should be reversed in policy implementation, but the reality is always the opposite.

4. Towards a Resilient city

Ecological transformation is the outcome of the necessary response to the imminent ecological crisis, such as climate change and resource depletion. The ecological transformation of the city in response to the ecological crisis ultimately aims at strengthening the resilience of the city. Resilience is defined as

“the capacity of a system to withstand disturbance while still retaining its fundamental structure, function, and internal feedbacks” (William E. Rees, “Thinking ‘Resilience,’” in Richard Heinberg and Daniel Lerch, eds., *The Post Carbon Reader: Managing the 21st Century’s Sustainability Crises*, 2010).

All programs such as community building, social economy, energy dispersion, use of renewable energy, and urban supported agriculture intends to strengthen resilience of the city. “The more communities can feed, house, educate, transport, and care for themselves, the more they can manufacture their own goods and provide their own services, and the less vulnerable they will be to the coming financial challenges.” (Shuman, Michael, *Local Dollars, Local Sense: How to Shift Your Money from Wall Street to Main Street and Achieve Real Prosperity*, Community Resilience Guides, Kindle Edition, 2010).

The resolution of urban poverty also contributes to the strengthening of the city's resilience. For poverty in economically deprived areas can make it harder to form a consensus on the conservation and protection of resources for ecological transformation by stimulating the hidden craving for development. In addition, ecological transformation becomes more difficult if socioeconomic conditions for creating a circulation of a sustainable economy are not equipped. In this regard, hardware construction projects for infrastructure such as roads, traffic, medical facilities, and cultural or educational facilities may often constitute conditions for ecological conversion.

In that sense, the Regional Cooperation Project in Seoul was an attempt to link the solution of urban poverty and the ecological transformation in a virtuous cycle. It is part of a long-term project of ecological transformation that lasts until a city's economic circulation system is finally built up to maintain sustainable cities.

Jane Jacobs shows great interest in this type of urban economy. She understands that urban economy is the most basic condition that affects the lives of the people living in the city. However, Jacobs' interest in economics was not in a profit economy represented by giants and franchises, but rather a small local economy with a regional basis that was often excluded from the mainstream analysis of urban economies, and the urban economy as a countermeasure against gentrification. Jacobs' understanding of the local economy, which explains the spontaneous urban economy as similar to that of natural ecosystems, appears to be one 'ancient future' of future cities. And it is another expression of a 'sustainable city' that has put resilience as its most important factor.

“In a natural ecology the more niches that are filled, the more efficiently the ecology uses the energy it has at its disposal and the richer it is in life and means of supporting life. Just so with our own (urban) economies. The more fully their various niches are filled, the richer they are

in means for supporting life. That is why city regions are so much better off than specialized economies ...

In a natural ecology the more diversity there is, the more stability, too, because of what ecologists call its greater numbers of homeostatic feedback loops, meaning that it includes greater numbers of feedback controls for automatic self-correction. It is the same with our economies, and this is why city regions are economically more resilient and less fragile than other types of regions.” (Jacobs, Jane. *The Economy of Regions* (Annual E. F. Schumacher Lectures Book 3) (Kindle Locations 101-107). Schumacher Center for a New Economics. Kindle Edition.)

November 9, Thursday

Session 7: Education for Ecological Civilization

The first step toward ecological civilization is the change of consciousness, so the educational change is important and urgent. Most of the universities all over the world aim to make their students competitive and fit for economy. Universities themselves operate on the basis of economic principle. Moreover, each departments are classified and specialized, so the conversation between disciplines are difficult. Even though humanities pursue the integral viewpoint, they are still anthropocentric. We will discuss how to change the university education toward ecological and integral direction.

Thirteen Ideas that Universities Cannot Discuss

Marcus Peter Ford

Author of *Beyond the Modern University:
Toward a Constructive Postmodern University*.

There are thirteen ideas that are destroying the world and none of these ideas is openly challenged in our colleges and universities. Worse yet, all are assumed to be true or are openly endorsed by institutions of higher education around the world. In other words, universities lend their authority to the very ideas that are destroying the world.

Here are the thirteen ideas

- Reality lacks intrinsic value
- The universe is without purpose
- Truth, Justice, and Beauty are entirely subjective and hence unimportant
- A society's overall health can be measured in terms of its GDP
- Vast economic inequality is not a problem
- Education is about job-training and upward mobility
- Industrial farming is efficient, necessary, and sustainable
- There is a market-based solution for all important problems
- Individuals are more real than societies
- The best possible world order is to have one super-power and this super-power must be the United States of America
- A global economy is both necessary and sustainable
- War and injustice are inevitable
- Economic growth is as important, or more important, than climate stability and biological diversity.

If Korea and the United States are to become sustainable civilizations, we must find ways to either reinvent higher education or to supplement the current form of higher education with another kind of higher education. We need a form of higher education that allows us to challenge the ideas that are destroying the world and replace them with ideas that more closely approximate the truth.

I am happy to discuss each of these ideas and am open to adding other ideas to the list--I feel sure my list is US-centric in ways that I do not intend and am not aware of--but my primary point is that universities are not free of cultural assumptions and that some of the most important ideas are virtually impossible to examine within the context of higher education as it is currently constructed.

There are three reasons that universities, in their current form, are unable to critically examine these destructive ideas. The first has to do with the structure of the university, the second with widespread cultural assumptions that shape how we think generally, and the third is political.

Universities today organize themselves around academic disciplines. This was not always the case and need not be the case in the future. Academic disciplines consist of a field of inquiry, a set of basic assumptions, and a methodology. An idea that does not fit into an academic discipline, or that that contradicts the basic assumption of an existing discipline, cannot be seriously entertained within the context of higher education today. All of the ideas I have listed as being detrimental to human life on this planet fall into this category.

Take for example, the idea that everything has some value for itself. The academic disciplines of physics and chemistry are predicated on the assumption that this is not the case and therefore they are not open to entertaining the possibility that to be actual is to be something for oneself.

In theory, another discipline, such as philosophy might take as its starting point the idea that everything actual is something for itself, or that this is one viable way of thinking about reality. But this is not the case. Philosophers have concluded either that we cannot talk meaningfully about the world as it exists independently of human perception and therefore it makes no sense to entertain the idea that everything is something for itself; or that they must accept the presupposition of physicists.

The point is not to convince you that it makes more sense to begin with the assumption that to be real is to be of some value for oneself—although much hinges on how we think about reality--it is only to demonstrate how this idea cannot receive a fair hearing in the modern university because of how the university is currently structured.

Or take the idea that industrial farming is unsustainable because it consumes more energy than it produces and because it destroys the soils on which it depends. The academic discipline of agronomy, now often coupled with biotechnology and closely aligned with the large agro-chemical companies, assumes that this is not the case. The idea is not demonstrated to be false, or even discussed. It is simply not entertained.

Many universities have departments of environmental studies, sustainable development, or food studies that openly reject the idea that modern agriculture is sustainable, but these departments are relatively small and generally enjoy low status within the university. They are no match for the colleges of agriculture that shape agricultural policy and practices around the world.

The second reason that universities are unable to seriously reflect on these ideas is that most of these ideas have become “common sense”--which is to say ideas so widely accepted that they are not seriously questioned. Consider, for example, the twin ideas that the purpose of higher education is individual advancement and the idea that endless economic growth is both possible and desirable. Everyone “knows” that economic growth is endlessly possible and that the only reason to go to college is to get a good job, meaning one that pays well.

In the case of Korea it is especially evident that higher education, coupled with hard work and smart economic policies, has improved life immensely. To challenge these ideas flies in the face of common sense. And yet, the full picture is more complicated. Life in Korea is not in every way better than it once was and a doubling of the national economy every ten years or so is not sustainable. The Miracle on the Han has a dark side and it is rooted in the false assumption that economic growth is infinitely possible.

Universities are sometimes portrayed as “Ivory Towers” cut off from the wider world. In some respects, of course, they are. But the deeper truth is that universities are social constructs and the common sense of the civilization shapes the curriculum. Schools of Business and departments of economics do not give equal time to the idea that economics must conform to the laws of nature and to the moral norms of society. Indeed, typically they do not entertain these ideas at all.

The third reason that it is extremely difficult for universities, at least in the United States, to entertain some of these dangerous ideas is political. Here we have a mix of private colleges that are mostly small, and public universities that are mostly large. Most students in the US attend public universities.

Professors at public universities are state employees. Although some enjoy the protection of tenure, most do not. At the moment, 70% of faculty are contingent workers, meaning that they will never be tenured.

Officially, all faculty enjoy some degree of academic freedom, but for individuals whose contract ends at the end of each academic year this freedom is constrained by their desire to be rehired in the fall. Quite understandably, non-tenured faculty do not feel comfortable examining ideas that are politically unpopular for fear of not being rehired. Sadly, even tenured professors oftentimes shy away from politically unpopular ideas for fear of not being promoted or receiving student evaluations that are less than stellar.

Even though most of the universities in Korea are private, my guess is that there are also political forces at play that make it difficult to challenge certain ideas.

For all of these reasons, universities are, on the whole, unable to deal with the very ideas that are destroying the world. Admittedly, there are exceptions to this generalization and we need to celebrate these exceptions, but it is important that we do not allow the exceptions to obscure the wider truth:

Universities are not making things better. They are, on the whole, making things worse by lending their considerable authority, either openly or implicitly, to ideas that are false and destructive—and by reproducing the “knowledge” that is destroying the planet.

What can be done? I will make two suggestions that I think could work, both in the US and Korea. Needless to say, these two suggestions do not exhaust the possibilities and I welcome other suggestions.

Faculty at large universities could form reading groups devoted to exploring one or more of the dangerous ideas listed above. In groups of five or six, faculty could commit to reading one or two books over the course of a semester and meeting three or four times with colleagues outside of their disciplines to discuss these matters.

We tried something like this one semester at Appalachian State University (a mid-sized state school in North Carolina) around the idea of climate change and its social implications. The results were promising. Many faculty welcomed the opportunity to meet other faculty who taught at the same institution and to discuss important issues outside their specific academic disciplines. Insofar as one of the primary impediments to teaching these dangerous ideas is the disciplinary structure of the university, getting faculty to think together outside of their disciplines, if only on a temporary bases, is of way of undermining the current structure of the university.

One tangible result that came from these reading groups is that the assistant chair of the biology department realized that students were not learning about the biological implications of global climate change in the introductory biology courses. The unit on the biological implications of climate change was an optional part of the course and many instructors opted not to cover it. The biology department has since made the biological implications of climate disruption an important part of all their introductory courses. In theory, faculty in other departments could make a similar decision regarding their introductory courses.

Another result from this was a voluntary pledge that about one hundred faculty members took to include as much information about the issues of climate in their courses as they thought appropriate. Asking faculty to pledge to include as much attention as they think appropriate has the advantage of being a personal commitment rather than imposed requirement, but it does not insure that faculty will in fact follow through on this pledge.

Of course, there are no quick fixes to changing an institution that as old and honored as the modern university. Still, even such a simple thing as reading together proved to be surprisingly effective in establishing the context for change. Over time, these kinds of cross disciplinary efforts have the potential to change the culture of the modern university.

My second suggestion involves adult learning groups organized largely or entirely outside of existing universities. In 1920, unimpressed with the impersonal learning of German universities, the philosopher Franz Rosenzweig established what became known as the Lehrhaus--the house of learning. The emphasis at the Lehrhaus was on the contemporary challenges of modernity to traditional Jewish life and on a non-hierarchical manner of instruction. Until shut down by the Nazis in the 1930s, the Lehrhaus constituted one of the most vibrant educational institutions in Germany. In 1970, the Lehrhaus model was revived, to some extent, in San Francisco.

In the 1960's a number of "alternative universities" were established in the US, largely in reaction to the failure of mainline universities to address the political issues of the time.

It is possible to establish adult learning centers, or "colleges," both in the US and Korea that organize their curriculum around concrete issues--such as sustainable agriculture, healthy communities, and sustainable economics--and around the ideas that promote an ecological and just civilization. These "colleges" or adult learning centers could explore all of the dangerous ideas listed above.

My main point is that universities, in their current form, are part of the problem. The universities that we currently have are structurally, culturally, and politically incapable of analyzing and evaluating the ideas that are destroying the planet. Of course, we will never be able to transform higher education so long as the culture itself remains the same. We must work to transform higher education, both from within and from without, at the same time as we work to transform all other aspects of modern culture. There is no single starting point for changing everything. Nonetheless, it is the case that *in order to transition to a new kind of civilization we will have to transition to a new form of higher education.*

Science Education - Reform for the Common Good

Jay H. Jones

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Background - Science, historically, has been the study of nature and the relationships that exist within it. Early scientists carefully examined the physical world, describing and classifying its various constituents in detail. Science education was largely a matter of acquainting students with the diversity of these constituents, be they geological, astronomical, plant, animal or chemical. As more was known about the workings of the natural world, students were also taught about the relationships, which exist among these components. Their mentors, the scientists of the 18th and 19th century, tended to be generalists, having a broad understanding of many fields knowledge. Thus, they were able to relate knowledge in a holistic way. Both the mentors and the students also had intimate contact with the natural world. As the body of scientific knowledge grew, scientists became more focused. While the depth of their knowledge increased, the breadth generally suffered. This trend accelerated as the tools of science became more sophisticated, expanding the power of our senses. Further separating us from knowledge of the whole, was the increasing urbanization of humanity. Many scientists therefore became increasingly disconnected from nature both by their attention as well as their physical environment. This progressive isolation was most intense in the field of biology, a field that is central to sustainability.

Biology - prior to 1960 was rich in organismal biology courses, with abundant opportunity to become familiar with living forms. It included detailed coverage of the morphology and anatomy of these organisms as well as their life cycle and ecology. This was combined with study of the genetics and physiology, needed to understand evolutionary processes and function. The molecular biology revolution, which began in the 1950's with the discovery of DNA and the molecular mechanisms of inheritance and genetic expression, provided much new information that competed with the organismal content needed to form an attachment to the natural world. Room was made for this new material in a balanced way through the 60's and early 70's. Students trained during this time had the best balance of information and perhaps the best ability to put discipline specific information in a systems context. However, this was not to last.

The influence of grant overhead, money not directly spent for the research but rather for administrative and facilities support, became a powerful force in the late 70's, causing a number of deleterious effects on education in the biological sciences and ultimately on attitudes toward sustainability. First, an asymmetric accent on research became the norm at major universities because of the financial rewards of grant overhead. Thus, teaching assumed a subordinate role relative to research.

Faculty were less willing to teach and devoted less time to preparation and working with undergraduate students. Many organismal and systematics courses were dropped, never to be taught again. Faculty had to concentrate on the overhead generating research and publication. Grants for organismal biology were fewer in number and small compared to the much more expensive molecular biology projects. Therefore, organismal staff were often replaced with molecular biologists thinning the ranks of experts with knowledge of the natural world. Thus, undergraduate students trained at major research institutions, gained a depauperate education biased heavily toward the molecular and with only brief exposure to the organismal and ecological dimensions of their discipline.

The NSF and other granting agencies began to understand the negative impact overhead had on undergraduate education at the major universities in the mid 1980's and initiated programs to support science programs at undergraduate only institutions. This aided four- year colleges with the addition of instrumentation and other resources. No overhead was provided for these grants. The four-year undergraduate institutions therefore became major feeders for graduate education in the sciences. The curriculum at these institutions remained relatively broad compared to the narrowed programs at the R1 institutions. This strength prevailed for approximately two decades. However, as older faculty retired they were replaced with young faculty most often trained in the narrow programs associated with the major state and private institutions. Thus, both the expertise and value of organismal and systematic biology is now being lost at four-year colleges, the last remaining refugium of the broad education needed to truly understand issues of sustainability.

STEM education reform - has recently become a major focus of funding and attention. It is clear that fewer students are entering the sciences and the performance within the programs has declined. The influence of grants, albeit with limited overhead, is now taking its toll at the undergraduate institutions. Faculty at these institutions are now driven to seek grants and publish more. This is exceedingly difficult given the heavy teaching loads and limited facilities. Some faculty focus on STEM education, where grant money is more readily available and laboratory intensive work is not required. This has resulted in a self-perpetuating movement to transform undergraduate education. Among the "best practices" touted is undergraduate research. Unfortunately, research at the undergraduate level, although very effective at facilitating engagement, detracts from the ability to provide the broad foundation upon which contextual understanding relies. Thus, students get narrower training in the sciences and nearly all hypothesis driven. The descriptive science that builds connection to the natural world is minimized. Instead myopic project based learning restricts orientation to the problem solving, engineering approach, that most often neglects the broader implications of the outcomes.

Concern over STEM (Science Technology Engineering and Mathematics) education in the US is based primarily on maintaining our economic strength. Most of the major innovations, which have driven the US economy have come from baby boomers, those educated in the late 60's and 70's. Fewer students choose to go into the sciences and those who do often lack the functional understanding and skills to make meaningful contributions. The reason for this lies not only in a narrower and less rigorous academic background but equally from isolation from the natural world and unstructured play as children. Those who have achieved academically are most often destined to solve specific problems of economic importance without consideration of the effects of such developments on the world as a whole. Thus, we have developed generations who have little emotional tie to the natural world and whose wants and needs outstrip the world's ability to meet them. In short, we are on a collision course for disaster.

Where do we do we go from here? It is unlikely that we can significantly heal the separation of recent generations from nature but hopefully we can educate them with regard to the economic and humanitarian need to consider more than profit when making decisions. We must educate our scientists more broadly and invest in research, which will lead to developments to improve the environment and the human condition. Not only do we need to restore balance in the curriculum within majors, but we need to restore a broad and rigorous general education that addresses sustainability in a transdisciplinary fashion so that it may serve the common good rather than only profits. Science and science education will not solve our problems alone. Paradigm shifts in economics, design, governments and societies are also required. These changes must be made collectively. Shifting our priorities will not be easy, however we must move very quickly. With hope and effort most can enjoy a higher quality of life in a greener world. The challenge will be a test of our values and our personal integrity.

Arts and Ecology: Case Studies in Korea

Mijung Im

Concert Pianist and Professor at Hansei University

Director of Eco-Culture Society

Introduction

The concept of Ecological Civilization (EC) has been evolved and shaped through multiple disciplines and from all cultures where today it requires understanding of the multitude of interdisciplinary areas from core sciences to spirituality and understanding of different cultures and its background. This diverse movement brings layers of complexity to address EC to its consensus and creating priorities in the rapidly globalizing world.

How does Cultural Arts fit in and what can Cultural Arts do?

Culture consists of beliefs, behaviors, objects, and other characteristics common to the members of a particular group or society. Through culture and its arts, people and groups define themselves, conform to society's shared values, and contribute to society. From this perspective, the meaning and value of EC may vary based on their cultural priorities and needs therefore invites ambiguity for direction of an expected outcome from each culture and disciplines. The cultural values are critical for sustaining the EC movement where such can only be successful through the endorsement and contribution from all. From this, cultural arts can contribute and lead the way in taking critical social and sustainability issues and be able to harmonize and package them into a universally understandable form; therefore, be able to promote and support the effort of EC movements. The Arts has the power to take complex ideas into a coherent picture to comprehensive level for all ages and cultures. The Arts, therefore, can offer a new form of a communications channel to express messages and promote interests and awareness for the general public. For example, the work of American musician and soundscape ecologist Bernie Krause who gathered wild animals and nature's sound to create the work called 'The Great Animal Orchestra'¹. Krause's work is one of primary illustration of extending awareness and packaging critical message related to importance of promoting Ecological Civilization in holistic and artistic form.

¹ https://www.youtube.com/results?search_query=the+great+animal+orchestra (2017.10.19)

Case Studies in Korea

Since the end of 20th century, the construction of Ecological Civilization was taking place quietly in Korea through migration of people within the country, postmodern community formation, and designing postmodern performing arts festival. The people of Korea has a long tradition of harmonizing with nature and binding strong community life, therefore, there has been a great effort to redefining the meaning of culture that is more attuned to towards the ecological movement during the past three decades. Since the 90s, for example, strings of young families have been choosing to settle in rural areas of the country and shaping the settled community with the fusion of city and eco-friendly lifestyle, therefore creating a new form of eco-civilization within. This movement is called 'Gui-Nong' or 'Gui-Chon' meaning going back to farm lifestyle as a part of the contemporary lifestyle. Another example is taking among celebrities in Korea. Major movie celebrities began to show their new lifestyles of harmonizing with nature and slow paced life instead of displaying the lavishing Hollywood lifestyle of 'Rich and Famous.' Furthermore, the number of actors/actresses and general public have also begun the movement on advocating animal rights through avoiding fur coats and taking apart as vegetarianism which it has dramatically influenced the young generation. In the education sector, non-traditional and alternative schools have been mushrooming in the natural settings throughout the nation and thousands of families across the nation have selected this type of schooling over traditional curriculum in heavily populated and polluted cities. In performing arts sector, non-traditional programs and concerts settings have been actively promoted that are specifically related to peace and ecology. One of the examples is the relabeling movement of DMZ (Demilitarized Zone) to PLZ (peace and life zone). As we all aware that the DMZ is an area of 160 miles long and 2.5 miles wide where it has been designated as DMZ since the end of Korean war. No one has stepped in this area for the past 65 years. Ecologically, this area is considered one of the valued by the world where biological species have been preserved for the last 6 decades. The performing arts festivals are being planned for 2018 under the named PLZ at the DMZ National Arboretum where it is located in the heart of DMZ. Here, the festival plans to hold concerts and related activities to commemorate the tragedy of war and illustrate peace, life, and hope for the future. The performing arts and cultural movement for EC in Korea are active, however, still in its infancy. Our objective and goals for the cultural arts are measurable and it can be attained through collaborative efforts from all.

The performing arts movement is critical to the designing and making of Ecological Civilization and it is my hope to contribute to taking the first step towards making the change of consciousness through music. I am convinced that Eco-aware cultural arts activities are critical tool for various disciplines to come together under the unifying theme, therefore, opening the spiritual gates to a new consciousness.

Session 8: Ecological Civilization in Practice

What looks like the ecological civilization in our real world? Arcosanti (ecocity) in the desert of Arizona, which has been built by Italian architecture Paolo Soleri's design, evolves for fifty years. Pilgrim Place (retirement village) in Claremont shows what means the community of the communities. They help each other and contribute for the bigger community. Maryknoll Sisters practice Pope Francis' lesson in their everyday lives. These are grass root organizations which enable to realize ecological civilization and give us a lot of hope.

Pilgrim Place: A Retirement Community

Gail Duggan

I am very happy to be here at your conference and even happier to be able to tell you a little about the practical steps that we at Pilgrim Place have been taking as we strive for a more ecological civilization. We still have a long ways to go but our community of aging residents know that working toward a sustainable society is one of the most important gifts we can give to our grandchildren. We are on our way. Are we going fast enough? Who knows but we are on our way. Pilgrim Place is a retirement community composed of about 300 residents who live on three different levels of care. More than 200 people, who enter Pilgrim Place in their 60s and 70s, live in what we call independent living. We have one meal together every day. We require few nursing services and give lots of time and energy to the many Pilgrim Place programs.

(At this point let me explain that most of the time in this talk, I will use the word “community” to speak about Pilgrim Place, our retirement community. Sometimes also called a senior living community. However, occasionally the word “community” will refer to Claremont or even our global community which means all of us who live on Planet Earth.)

Now back to Pilgrim Place and our three levels of care. I have spoken about what we call independent living. The next level is assisted living which refers to about 75 people in their late 70s and 80s who receive many more services including two meals a day, laundry and housekeeping. Level three is skilled nursing. Some 20 or 25 Pilgrims in their upper 80s and 90s need round-the-clock care. Included in this group are those with dementia.

Now you know a little about who we are by age and health. Let me add to this description by speaking about our values, the goals of the community we are trying to establish. Our new admissions policy both describes who we are seeking to have come and live at Pilgrim Place and those of us who are already living together.

We are people who want to live in a spiritually fulfilling community. We are advocates for social change sharing in a long history of volunteering and demonstrating our global concerns. We believe that as elders we can continue to be a resource for justice, peace and the environment. These values undergird our Pilgrim Place community and our commitments to the city of Claremont and the wider world. How do we transform these values into practical steps toward sustainability? Let me list some of our concrete actions in recent years without going into the details.

1. The new buildings we have constructed are meeting the state codes for sustainability.

2. When houses are renovated for new residents, insulation, double-paned windows and water-saving devices are often included.
3. We are expanding the areas on our campus with drought-tolerant planting in order to save water. We realize that extensive green lawns are not appropriate for southern California's dry climate.
4. The second largest expenditure in the budget of the Buildings and Grounds Department is for solar panels. Hundreds are being installed across the campus. This improvement will cut our costs for many years.
5. One of our residents monitors the amount of water each residence uses each month. A chart is posted so we can compare our usage with our neighbors as well as our own usage month by month.
6. Recycling newspapers and magazines has been occurring at Pilgrim Place for a long time but the last few years we have started sorting different types of plastics. Hard," clean plastic containers are separated from "soft" plastic bags for food, single-use gloves and so forth.
7. Finally, another example of ecological action is the composting we do. We are not doing anything yet with the leftover scraps of fruit and vegetables from our central dining room. However, "new soil" is being developed from the compostable fruit and vegetable peelings from our individual kitchens. This new soil is used in flower and vegetable gardens.

I have listed seven specific actions that we individual Pilgrims can do voluntarily. Obviously those residents with diminishing physical and mental health are not participating in these resident-directed programs.

At Pilgrim Place the phrase "resident-directed" is used to indicate that residents play a very important role in generating all types of programs. In recent years environmental concerns have been especially important among the younger, independent-living residents. At one time the most popular committee to serve on was the Environmental Concerns Committee. The programs I have listed have not come from the administration as a way to save money. Residents have pushed for these programs demonstrating how much money will be saved by drought-tolerant planting and solar panels.

People arrive at Pilgrim Place with a desire to live in a community that is moving toward ecological sustainability. They arrive with a background in volunteering. They want to join current residents in making a difference in the world, in demonstrating how we can live out our values caring for the earth. As I conclude, let me again say that we still have a ways to go. One big concern is how we can dispose of leftover food from our dining rooms and kitchens. The Housekeeping Department needs to check the products they use. Are they ecologically-friendly? Do the gardeners understand the care of drought-

tolerant planting? In other words, not only do we need to continue encouraging individual household action but we must push for the integration of sustainable actions through our institutional structures.

When it comes to building a new ecological civilization, even in a relatively small community like Pilgrim Place, we cannot do it alone. We are stronger together. One reason many of us come here to live is because we know together we can do what we could never do alone. Recently I read the following sentences in the publication of one of the Claremont Colleges; they could have been spoken by a Pilgrim Place resident or maybe by yourself.

“Collaboration, with all its challenges, enacts the world we want to live in. I am an individual, and I am not interested in working alone.” It’s together that our shared vision leads us to take practical steps toward an ecological civilization. Yes, we are stronger together.

Ecological Design of Life for the Ecozoic Era: Poverty Amidst Plenty by Alienation of Nature

Jiyeon Park

Eco Designer, Administration Officer of People for Earth Forum

It is of no secret that the widening gap between city life and countryside life has brought about many social and economic disparities. Under capitalism city development has been actively carried out worldwide, particularly in industrialised countries. The idea of successful and prosperous life, or materialism, has attracted humans from countryside to cities; such separation from nature has affected modern civilisation to forget about the interdependence with the natural world. This has blinded them to what consequences this would bring to them and to the society as a whole in the long term. South Korea is one of the countries where national economic growth has accelerated citification, and faces the number of ghost towns increasing at an unprecedented rate. The generation born from 80's onwards is mostly born in big cities and spends both childhood and adulthood in cities. I, too, am one of them. As Korean citizen I was born in Seoul and spent much of my time overseas for education and work, all in cities. Switzerland was the only one where I lived in a town with endless green pastureland. The lingering smell of cow dung in the air is still the first thing that comes up in my mind when I think of Switzerland. Compared to other cities like London, Milan and Seoul, there was nothing much to do and time seemed to pass slowly in this small calm town. Being surrounded by natural environment enriched my friends and me with emotions and positive energy; through empathy we were emotionally connected and treated with care the animals and the green environment. It is the place that has given us the happiest memory.

Living environment has profound impact on shaping humans' perception, way of thinking and behaviour. Typical city life, at least in Korea, is characterised by concrete-box apartments, automobiles, office buildings etc., anything enclosed. Being cut off from the natural environment, city dwellers seem to gradually think that humans are above nature. At this time when global warming and extinction of species send human beings desperate signs that the earth is at the brink of collapse, it is important to keep in mind what Alfred North Whitehead said- that every entity is somehow interwoven with the rest of the universe and no one is independent in existence. Modern civilisation continues economic activities that exploit natural resources and produce wastes and pollutions, without realising that they are destroying their own habitat earth. To live in plenty humanity becomes hollow inside, or psychologically wounded. Mental illness, such as depression, bipolar disorders, anxiety disorders etc., has become a serious social problem.

Alienation of nature is one of the main reasons behind the drainage of emotions in humanity in modern society and their destructive behavior causing the catastrophic state of planet earth today.

Toward empathetic communities for sustainable future

Sustainable future relies on realigning the relationship between nature and human. The mentality of contemporary civilisation that has long been shaped throughout alienation of nature needs to be restructured or healed. One of the fundamental solutions would be changing the living environment of humanity- that is, co-living with nature. Living with nature would help modern humanity regain their capability to feel empathy towards other existences. Living environment means home, office, infrastructure etc. all things that surround human beings. Building empathetic communities in which “members” collaborate in all aspects of life to lead a sustainable life with nature sounds doubtful and impossible, but it can be achieved with the help of scientific and technological developments. Cities are disassembled into self-sufficient villages where people source their food from family farming or nearby urban farming pools, children learn through actively engaging in communal activities, and all places are reachable on foot or by bike, hence reducing the use of fossil-fuel based transportation. The core concept is a collaborative community in local unit that is closely knit with its environment. The indigenous people interact with their environment through spiritual connectedness and have deep knowledge of it from “embeddedness in concrete locality”.¹ Building an ecological community at local level would give human beings a deep knowledge of their environment, and influence the direction of development in science and technology to design a new lifestyle in harmony with nature.

To achieve such lifestyle, various aspects of life, such as education, religion, work, architecture etc., need to be changed. Each country has different circumstances and context to introduce this new design of lifestyle, but I would like to discuss ideas and share with US and other nationals about their policies, practices, cultural movements etc. As an individual who has recently got interested in ecological issues and has felt that the current mode of life of humanity is wrong, I wrote this essay based on my past experience in foreign countries without professional knowledge. I hope that my perception on such matter is on a par with the public in general, at least in Korea; and this could help the relevant experts to come up with ideas that the public can easily approach in understanding for smooth transition into the Ecozoic era².

1. Mary E. Tucker & John A. Grim, <World Views & Ecology: Religion, Philosophy, and the Environment> 1994, pp 27.

2. Brian Swimme & Thomas Berry, <The Universe Story> 1994.

<Profiles of Participants>



John B. Cobb, Jr. is described by historian Gary Dorrien as one of the two most important North American theologians of the twentieth century, Cobb is the preeminent scholar in the field of process philosophy and process theology, and the author of more than fifty books. In 2014, he was elected to the American Academy of Arts and Sciences. He founded The Center for Process Studies at Claremont School of Theology with his colleague scholar David Griffin.



Fr. Jaedon Lee is Chairman of The Environmental Service Committee in Korean Catholic Seoul Archdiocese, professor of Catholic Graduate School of Life. He is one of the pioneers in environmental movement in Korean Catholic church. His doctoral dissertation of Toronto University was on the study of Thomas Berry's thought.



David Korten is a co-founder and board chair of YES! Magazine, co-chair of the New Economy Working Group, founder and president of the Living Economies Forum, a member of the Club of Rome, a founding board member emeritus of the Business Alliance for Local Living Economies, a former Associate of the International Forum on Globalization, and a former Harvard Business School professor.



Kumsil Kang is the Senior Partner of One Law Partners. With 13 years of experience as a judge, she was the former Vice President of Lawyers for Democratic Society and the former Minister of Justice. She was Korea's first female Minister of Justice. She founded People for Earth Forum, as her interests have come to include Earth Jurisprudence. She is acting as the executive director of the forum.



Brian Swimme is a professor of evolutionary cosmology at the California Institute of Integral Studies, in San Francisco. Influenced by the work of Thomas Berry, Swimme is well-known for his Emmy-winning film "Journey of the Universe;" and best-selling book of the same name, which draws together scientific discoveries in astronomy, geology and biology, with humanistic insights concerning the nature of the universe.



Wangjin Seo is President of the Seoul Institute, the think-tank of Seoul Metropolitan City. He received his doctoral degree of environmental policies at University of Delaware, and founded the Institute of Environmental Justice. He also worked as special policy secretary with Mayor of Seoul Metropolitan City, Park Wonsoon.



Philip Clayton is Ingraham Professor of Theology at Claremont School of Theology. His specializations are in philosophical theology, interface between science and religion, and the history of modern metaphysics. He won the Templeton Prize for Outstanding Books in Science and Religion. He established non-profit organization Toward Ecological Civilization.



Gunna Jung is Economics professor of Hanshin University, research fellow of The Center for Process Studies in Claremont School of Theology. He got his Ph.D of labor economics at Seoul National University and worked as vice president of NGO the Hope Institute. He is also board member of Seoul Institute and 50+ foundation.



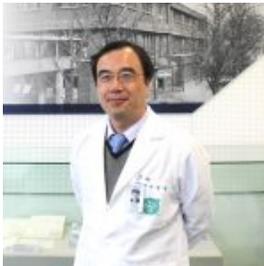
Wm. Andrew Schwartz is Executive Director of the Center for Process Studies and Co-Founder and Executive Vice President of EcoCiv. He is a scholar, organizer, and non-profit administrator. Andrew earned his Ph.D. in Philosophy of Religion and Theology at Claremont Graduate University. Recently, his work has been focused on high-impact philosophy and the role of big ideas in the transition toward an ecological civilization.



Freeman Allen has spent more than 60 years working to improve the environment and the lives of Claremonters. A retired Pomona College professor, Allen is co-founder of Sustainable Claremont and Claremont Home Energy Retrofit Project (CHERP) and tireless advocate of sustainability.



Zhihe Wang is Director of China project of The Center for Process Studies. He is former member of Chinese Academy of Social Science and got Ph. D in Claremont Graduate University. He founded Institute of Postmodern Development in China, which organized international conferences, and helped establish more than 30 research institutes on Process thought in China.



Kyoung-min Lee is a Professor of neurology and cognitive science at Seoul National University. Graduated from Seoul National University College of Medicine (M.D.) and Massachusetts Institute of Technology (Ph.D. in Neuroscience). Trained as a neurology resident at The New York Hospital-Cornell Medical Center and a clinical and research fellow at Memorial Sloan-Kettering Cancer Center. Currently, scientific and medical research focusing on cognitive and behavioral neurology, and cognitive neuroscience. Special interest in the dialogue between science and religion, especially in the posthuman era.



Meijun Fan is former Vice-Chair and Professor of the Philosophy Department at Beijing Normal University, China. She completed doctoral studies at Beijing Normal University, specializing in Chinese traditional aesthetics and aesthetical education. She currently serves as Program Director for the Institute for Postmodern Development of China, and Co-Director of the China Project of the Center for Process Studies in Claremont, CA.



Heejong Woo currently serves as the Dean of the College of Veterinary Medicine, Seoul National University. He received his PhD in Pharmacy at Tokyo University. He is an important specialist of Creutzfeldt Jacob Disease (also called Mad Cow disease) and has interests in the Science of Complexity and in the dialogue between religion and science as a Buddhist.



Eugene Shirley Founding president and CEO of Pando Populus and a long-time social impact entrepreneur. For twenty-five years, he produced prime-time programming for PBS and thirty countries. He was founding CEO of a text analytics firm. And he is a former Jennings Randolph Fellow at the U.S. Institute of Peace.



Kiwon Song is Professor of Biochemistry in College of Life Science and Joint-Professor of Science, Technology, and Policy Major in Underwood International College at Yonsei University. She received her doctoral degree of Biochemistry and Molecular Biology at Cornell University and has been doing research on Cell Cycle as a scientist. Interested in ethical and social issues related to life science, she is also the Director of Academic Society on Visions of Ecozoic Era of People for Earth Forum.



Ken Kitatani is an ordained clergyperson in the Sukyo Mahikari Centers for Spiritual Development and a well known cultural and environmental activist. He currently serves as the Executive Director of the Forum 21 Institute, a public forum for NGO's at the United Nations particularly concerned with the UN's Sustainable Development Goals. He also is the USA representative of Women In Need International, and an adviser to the Happiness Alliance that promotes Gross National Happiness (GNH).



Chul Chun is Systematic theology professor of Hanshin University, director of The Center for Religion and Science at Hanshin University. He got his doctoral degree at the Heidelberg University in Germany.



Sandra Lubarsky is Professor Emeritus of Religious Studies and former Director of the Master of Liberals Studies Program at Northern Arizona University. She earned her Ph.D. in philosophy of religion from Claremont Graduate University and writes and speaks frequently on religious pluralism and tolerance and on the importance of beauty as a value system for the 21st century.



Jiye Shin is president of the Green Party Seoul. She graduated from an alternative high school, then worked at a social enterprise in her early twenties. She runs a space and organization for youth. She also ran for proportional representation in the last general election.



Lissa McCullough, PhD, teaches philosophy at California State University Dominguez Hills. She worked with Paolo Soleri as his editor and academic consultant for seven years (2006–2013) and has given numerous lectures and presentations on his ideas. She is editor of *Conversations with Paolo Soleri* (New York: Princeton Architectural Press, 2011) and text editor for *Lean Linear City: Arterial Arcology*, ed. Youngsoo Kim (Mayer, AZ: Cosanti Press, 2011).



Yunjeong Han is Research fellow of The Center for Process Studies, former director of culture office of The Kyunghyang Daily News, former board member of The Kwanhun Club. She received Ph. D of Comparative literature at Yonsei University.



Andy Shrader is Director of Environmental Affairs, Water Policy & Sustainability for the 5th District of the City of Los Angeles. He advises Councilmember Paul Koretz on issues related to the environment, climate change, water policy, technology and sustainability, working to ensure the city can meet its present economic, environmental, and sociopolitical needs without compromising the ability of future generations to meet their own needs.



Dongwoo Lee is Director of the EcoCiv Korea project of the Center for Process Studies, and pastor of Pasadena Presbyterian Church (PCUSA). He got his Masters degree at San Francisco Theological Seminary and completed doctoral coursework at Claremont School of Theology.



Albert Park is Associate Professor of History at Claremont McKenna College, and Co-Principal Investigator for EnviroLab Asia. His areas of expertise includes Design & Architecture, East Asian History & Political Economy, Korean History, Modern Japanese History. His recent publications include *Building a Heaven on Earth: Religion, Activism and Protest in Japanese Occupied Korea* (2015).



Jongmok Kim is Editor of Mobile News of The Kyunghyang Daily News. He studied philosophy in Sogang University and worked as reporter of social affairs, politics, and culture office of The Kyunghyang Daily News.



Gail Duggan has been a resident of the retirement community Pilgrim Place for 18 years with her husband Tom who is a Presbyterian minister. She was born in Iowa and also attended university there. Her MA in Teaching English is from Columbia University in New York City. Gail and her husband have lived in Thailand, Holland, and France for a total of 27 years. Gail taught English in each of these countries as well as in the United States. Early in her teaching career she realized that she could make a difference in students' lives by helping them to improve their English ability.



Jiyeon Park studied business administration and public policy management in Aston University, UK. She worked in sales strategy and planning dept. of LG Electronics UK Ltd., and overseas business team of Hanwha Q Cells Korea Corp., as sales coordinator and sales analyst. Now she is eco designer in accessories product and member of People for Earth Forum.



Marcus Ford has taught philosophy and environmental humanities at Eureka College, the University of Northern Arizona, and Appalachian State University, and been involved in university politics at all three schools. He is the author of *Beyond the Modern University: Toward a Constructive Postmodern University*.



Mijung Im is a concert pianist, a professor at Hansei University, and the founder of Music for One Foundation (INGO) in Korea. Her awards include receiving the first prize of the 1997 San Antonio International Piano Competition in the U.S. and have performed on four continents during her two decades of the concert career. Her foundation designs and organizes concerts that are related to world sustainable peace, and provides sustainable music education programs for Korea, Tanzania, Myanmar, and Cambodia.



Jay Jones is Professor Biology and Biochemistry at University of La Verne. He maintains significant interest and some activity in a variety of fields including: biochemistry, botany, systematics (taxonomy), sustainability, and education. Jay is dedicated to breadth AND depth in education, and is a firm believer in hands on an immersion instruction. In recent years his scholarly efforts have been directed primarily toward the environmental challenges we face.



Zack Walsh is a Ph.D. Candidate in Process Studies at Claremont School of Theology. He is a research specialist at Toward Ecological Civilization, the Institute for the Postmodern Development of China, and the Institute for Advanced Sustainability Studies in Potsdam, Germany. His research is transdisciplinary, exploring process-relational, contemplative, and engaged Buddhist approaches to political economy, sustainability, and China.



John Becker is adjunct professor at Loyola Marymount University. He holds a PhD in comparative theology and philosophy from Claremont School of Theology, and is a Research Fellow with the Institute for the Postmodern Development of China. He additionally holds both an MA and BA in history from California State Polytechnic University, Pomona. His research interests are broad including comparative religion & theology, process philosophy, religious epistemology, Buddhist philosophy, pragmatism, metaphysics of ecology, history of ideas, and pluralism.