

On Gaia Citizenship
The Mastermind Lecture

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James Tully

1. The Crises of Sustainability and well-being and two responses to them

1.1 The crises

As we all know, we humans are caught up in a serious problem or crisis of both social and ecological sustainability and well-being.

Over the last 300 years the West has developed a social system that is socially and ecologically unsustainable in long run and ultimately self-destructive. It overreaches and undermines the social and ecological conditions that sustain life on earth for Homo sapiens and many other species and ecosystems.

This exceptionally complex system of interlocking systems has been spread around the world and is now forms a dominant assemblage of social systems on the planet.

It is a 'vicious' assemblage in the technical sense that the regular feedback loops within the social systems, and between the social systems and the ecosystems in which it is embedded reproduce and intensify the destructive effects of the systems on the social sphere and ecosphere.

[Global warming, climate change, escalating pollution and the diseases it causes, the melting of polar icecaps and glaciers, the release of even more lethal greenhouse gases this produces, the acidification of oceans and the vicious cycles this generates, the depletion of non-renewable resources, including water, aquifers, and precious metals, the use of renewable more quickly than then can renew themselves, such as fish and forests – the lungs of the world that make the air breathable; the economic scramble over what is left is increasingly damaging to the environment, the cascading effects these have on weather, global human and species suffering,

the ever more destructive wars and war preparation that are required to protect these unsustainable social systems, the rapid increase in climate refugees and war refugees, and so on.]

We have known that this social system is unsustainable and self-destructive socially and ecologically if it continues unchanged since the first meetings on the sustainability crisis in the 1950s and 1960s at the UN and between ocean, earth and atmosphere scientists in Canada and the US: Rachel Carson, Silent Spring, Barry Commoner, Closing the Circle, the first Earth Day in 1970, The Club of Rome, The Limits to Growth, the Brundtland Report in the 1980s and the emergence of the concept of sustainability and well-being as a meta-norm in national and international relations. It has been reaffirmed ever since by thousands of scientific experts from different fields and summarised in the five Reports of the IGPC.

Yet the crisis continues despite best efforts so far to address it so far. It appears to be worsening. Some suggest that we are already into a sixth mass extinction of biological diversity – where biological diversity is the very condition that sustains life on earth. Moreover, if the production of greenhouse gases continues apace much of the earth may be less habitable or uninhabitable for Homo sapiens by the turn of the century, and the earth's systems may reach a tipping point.

Just to be clear, my argument does not depend on the immediacy or severity of the crisis we face. Even if our dominant way of life is only slowly degrading the conditions of life on earth, I think most people would still be interested in knowing if there are more sustainable ways of living available to us. For example, most people realise that we need to transition away from our linear, development economy based on fossil-fuels to a cyclical, green economy if we wish to live in a more sustainable way not only for ourselves but also for our children and grand-children, and for future generations of non-human species and ecosystems. Even the defenders of the status-quo business as usual model accept that science, reform and improvement should be part of the status-quo.

Thus, the great question, therefore, today is the following. What have we learned over the last 60 years and how can we address the crisis most effectively today?

1.2 Three states of ecosystems and social systems

The first thing we have learned from the study of complex social and ecological systems is that it is not unusual for a social or ecological system to become vicious in the way ours has: that is, to develop in such a way that it overshoots or uses up the conditions that sustain it, degrading or destroying the interdependent life-forms on which it depends, and, thus, ultimately, destroying itself. There are many examples of this in the history of life-systems, both human and non-human (as the academic literatures on civilizational collapse and on super-predators show). Moreover, and more importantly, there are also many examples of members of both social and ecological vicious systems changing their vicious behaviour and thus transforming their vicious system into a virtuous and sustainable system before collapse; and many other examples of recovering from collapse and regenerating a virtuous or self-sustaining system.

Thus, in complex systems theory we say that there are three possible states of any life system: (1) more or less virtuous and self-sustaining; (2) more or less vicious and non-self-sustaining; and (3) the ways in which systems that have become vicious and unsustainable are able to change and regenerate the virtuous conditions of sustainability before they collapse.

This third state of a complex system - that is, of regeneration and transformation of vicious systems in the human and non-human world - is of immense importance for us. We can learn from these examples and think of how to apply them to our own situation.

For, the vicious social systems that are the cause of the crises of sustainability are not “automatons”, as the doomsayers keep telling us. They are certainly very complex local and global social systems to which we are subject and on which most of us depend for our livelihood. And our daily productive and consumptive behaviour reproduces them insofar as we are caught up in them – and all of us are to varying degrees. However, we are not so enslaved to them that we cannot think or act otherwise.

We are free to reflect on them and to ask the questions we are asking: namely, **how can we live and act differently in order to regenerate and transform our unsustainable social systems into more virtuous and self-sustaining systems. And we are free to act on how we answer these questions.**

This evening I would like to discuss two complementary ways in which people are responding to the sustainability crises in precisely this way. I call these two responses “Gaia citizenship”, or ecological citizenship or, more accurately, as we will see, eco-social citizenship.

1.3 The problem or crisis to which Gaia citizenship is a response

At the heart of the Gaia citizenship response is the hunch that the reason we have difficulty responding effectively to the sustainability and well-being crises is that we mis-perceive the nature of the crises. The reason why we mis-perceive the nature of crises is because we view the crises from within the ways of thinking and acting that sustain the vicious social systems that are causing the crises. It is our self-formation as participants within the vicious social systems that discloses the world around us and our relationship to the environment we are degrading in a way that overlooks or distorts how the system degrades the conditions that sustain life. And, thus, even when we can no longer ignore or discount the damage we are doing, we respond in the standard problem-solving ways of the vicious system, and thus reproduce the vicious feedback loops rather than changing them.

Thus, the problem is not simply one of misperception, but also of being caught up in an unsustainable way of life that generates this way of perceiving the world.

David Suzuki pointed this out on his 80th birthday the other day. But, I think the first person to point it out was Barry Commoner in 1970 on the first earth day. Here is how he put it.

“To survive on earth, human beings require the stable, continuing existence of a suitable environment. Yet the evidence is overwhelming that the way in which we now live on earth is driving its thin, life-supporting skin, and ourselves with it, to destruction. To understand this calamity, we need to begin with a close look at the nature of the environment itself. Most of us find this a difficult thing to do, for there is a kind of ambiguity in our relation to the environment. Biologically, human beings *participate in* the environmental system as subsidiary parts of the whole. Yet, human society is designed *to exploit* the environment as a whole, to produce wealth. The paradoxical role we play in the natural environment – at once participant and exploiter – distorts our perception of it.”

That is, “all of modern technology leads us to believe that we have made our own environment and no longer depend on the one provided by nature. We have become enticed into a nearly fatal illusion: that through our machines we have at last escaped from dependence on the natural environment.” Yet, “every human activity depends on the integrity and proper functioning of the ecosphere.”

I will discuss how our dominant social systems generate this ambiguity and illusion of externality and independence later in this talk. I would like to begin with the following question: how do we free ourselves from the unsustainable way of life that generates this illusion and misperception and move around to seeing ourselves as participants within and with the living earth to which we belong? This is what I call Gaia citizenship.

That is, because our perception of the world is partly shaped by our mode-of-being in the world, we cannot see clearly the way forward unless we begin to change our way of being in the world to a more sustainable way. That is, we have to begin to be the change we wish to bring about in order to see more clearly the nature of that change.

One of the first people to see this clearly was Aldo Leopold in his Sand County Almanac in 1949. He argued that if we are to live in ways that sustain the conditions of life on earth for us and future generations then we have to move around, from seeing ourselves as the conquerors and controllers of nature to seeing ourselves as “**plain members and citizens**” of the biotic communities in which we live and on which we depend for every breathe we take. We need to take this turn and to learn and practice the responsibilities we have as participants - plain members and citizens – in and of these ecological communities that sustain all forms of life on earth, and, in so doing, sustain us and future generations. This is what I call Gaia citizenship or eco-social citizenship.

1.4 Two traditions of Gaia Citizenship in response to a shared problem

I want to discuss two traditions of social and ecological citizenship locally and globally. These are communities of practice that have developed from the realization that the ecological systems of the living earth sustain all forms of life, including human life, and thus, they have asked how should they live their lives and organise their social systems so that they sustain the

living earth in reciprocity. They are two different traditions in many ways, but they are both effective responses to the shared problem of unsustainability.

The first is the kind of eco-social citizenship that indigenous peoples have been practising for thousands of years. This form of citizenship is embodied in their traditional ecological knowledge and wisdom that they have acquired over centuries of learning by trial and error how to participate in mutually sustainable ways with the living earth (mother earth). These are earth teachings learned from studying earthways.

The second tradition of Gaia citizenship is much more recent. It is the communities of practice of eco-social citizenship that have developed on the basis of Western earth sciences and life sciences since the 1950s.

The remarkable feature of these two very different traditions of earth citizenship is that they are complementary. This is a convergence that was almost unimaginable 100 years. I will describe briefly each tradition. I will show how they complement each other, and thus how they can join hands and work together here in Victoria and throughout Canada. They are the common ground of reconciliation between indigenous people and settlers in working to address our common problem of living together in mutual sustainable ways with each other and the living earth.

1.5 The Spirit of Haida Gwaii

The best picture or manifestation of Gaia citizenship for me is the monumental sculpture entitled the **Spirit of Haida Gwaii**. As you know, it was overseen by the Haida master craftsman, Bill Reid, and crafted by a team of Haida and non-Haida craftspeople.

Everything I had to say about Gaia citizenship is embodied in this astonishing work of art as we will see as we go along.

However, since we are not on Haida Gwaii but on Vancouver Island, on Lekwungen territory and the Salish Sea, I will also be drawing on a great indigenous scientist and philosopher, Umeeek, Robert Atleo Sr., Nuuchahnulth from Ahousat, not so far from here. In his book Tsawalk: A Nuuchahnulth worldview, he puts into words the 'spirit' that is manifest in the *Spirit of Haida Gwaii*, and this same spirit, I will argue, is the *spirit* of Gaia citizenship.

The word *tsawalk* refers to the view that all living beings are reciprocally interdependent and their good relationships of reciprocal interdependency are best understood as *gift-reciprocity* relationships (just as we can see in the Haida canoe). In fact, one could draw on any of the great indigenous traditions on the northwest coast and you would find these same feature from Songhees to Gitksan traditions.

2. The Western tradition of Gaia Citizenship

So, let's begin with a sketch of the Gaia citizenship tradition based on Western earth and life sciences and communities of practice.

2.1 Gaia hypothesis

In the early 1960s Sir James Lovelock, an earth systems scientist, discovered the *Gaia Hypothesis*. This is the hypothesis that despite the vast changes in the solar energy coming to the earth over the last 3.8 billion years, and despite the vast changes in the forms of life on earth over the same long period, and despite all the changes in earth, ocean and atmospheric conditions over the same period, the atmospheric conditions and the temperature of the earth have somehow remained in the range that *sustains life on earth*.

The Gaia hypothesis is that the ecosphere, and all the systems of life that compose it, somehow regulate the atmosphere and temperate so as to sustain life. That is, the biotic and abiotic ecosphere as a whole is 'self-organising'. The term for the self-organising and self-sustaining way that life on earth, or the ecosphere, brings itself into being and sustains itself over 3.8 billion years is the Greek term *autopoiesis*.

The reason James Lovelock called it the Gaia hypothesis is that William Golding pointed out to him that the Greeks also believed that the earth is alive. They called the spirit of the living earth *anima mundi* (the soul or spirit or energy or *animacy* of the living earth). And they took the living earth to be a goddess – namely, *Gaia*.

This Gaia hypothesis has survived a number of tests since the 1960s and is now considered not only a hypothesis, but a theory – the *Gaia theory*. It has been endorsed in one way or another by the majority of the scientists on the IGCC since then.

This discovery has led to attempts to explain how the *systems* that compose the ecosphere actually regulate the content and temperature of the atmosphere within a fairly broad range of cycles that sustain most forms of life – from ice ages to warm period such as the Holocene in which we live. This has led to the revolutionary development of life systems theories, complexity theory, non-linear causality, and so on.

2.2 The animacy of symbiosis

For the purposes of those of us who wish to know how we should live within this complex system of systems, in ways that sustain it rather than damage it, the crucially important insight came from Lovelock's colleague, the life scientist, Lyn Margulis.

She argued that the Gaia hypothesis is not based on the assumption that the system of systems that compose the ecosphere is itself a purposeful living being that regulates the climate and temperature to sustain life. Rather, autopoietic or self-sustaining quality of Gaia is an "*emergent property*" of the life-systems or ecosystems that compose the ecosphere.

So, in her famous words, "the Gaia hypothesis is just "symbiosis and symbiogenesis" on a planetary scale."

There is nothing strange or speculative being smuggled in here. The emergence of new properties in the course of the complex interaction of life systems is the way that life itself has developed in increasingly complex ways over the last 3.8 billion years. That is, through life systems *living-with each* other in complex interdependent ways (*symbiosis*), and giving rise to new life systems (*symbiogenesis*).

Spatially, symbiosis refers to the immensely complex webs or networks that link all forms of life in relationships of reciprocal interdependence. Temporally, these networks are cyclical. They form cycles in which the 'waste' of one interdependent member is always used in some sustaining way by another member, so that nothing is 'waste'; and at a temporality that enables species and ecosystem renewal.

Photosynthesis is the paradigm of this spatio-temporal quality of reciprocal interdependency and cyclical renewability. Indeed, it is the basis of the way that life sustains life.

2.3 'Life sustains life' - Symbiosis is the power or *animacy* of life itself.

We can describe and study these endlessly complex and fascinating networks and cycles of symbiosis in terms of the negative and positive feedback loops, tipping points, virtuous and vicious systems, and so on, of systems theory and complexity theory. However, the key feature of the way life sustains life for Margulis is not that the system regulates the conditions of life for its members. Rather, it is the other way round. The plain members and citizens of Gaia sustain it by means of their symbiotic participation in it.

And Homo sapiens, as one minor species among millions, are members and citizens just like all others, with ecological responsibilities to participate in ways that reciprocally sustain the networks that sustain us.

That is, ecosystems and their members (who are also systems) sustain themselves by living in ways of life (lifeways and earthways) that co-sustain the forms of life with which they are interdependent. The ecological crises and climate change are caused by Homo sapiens not reciprocating.

Now, 'symbiosis' and 'sybiogenesis' are technical terms in the life sciences for how forms of life live together in mutually supportive ways and, in so doing, give rise from time to time to new symbiotic forms of life (sybiogenesis).

These virtuous relationships of mutual support and sustainability are now seen as the major factor in the evolution of life on earth. Life systems that sustain life symbiotically, in mutually supportive ways, are called "virtuous life systems". Sustainable life systems are not harmonious. They are often far from equilibrium, patchy, full of cheaters or free riders, and subject to perturbations that can cause the system to tip over into a vicious system. Yet, for all that indeterminacy, their remarkable qualities of resilience enables them to sustain themselves over vast stretches of time. Conversely, life systems that destroy their interdependent neighbours, or destroy the life systems on which they depend, and thus destroy themselves, are called 'vicious life systems'.

If vicious life systems were the major factor in evolution, as Western scientists tended to suggest not so long ago, then life on earth would have ceased to exist long ago. But, the opposite is the case. Life has become more complex: that is, symbiosis and sybiogenesis have prevailed

most of the time, even recovering from five mass extinctions and periodic ice ages every 100,000 years.

Moreover, vicious systems are also far from equilibrium and subject to tipping points. That is, life has resilient powers of “regeneration” by producing networks of symbiosis within a vicious system or the ruins of a vicious system. That is, the third state of a living system (regeneration) works by “being the change”: that is, by forms of life interacting symbiotically and symbio-genetically within a vicious system, and gradually transforming it into a virtuous one.

Take the example of the recovery of forest from clear cutting provided by Mike Simpson:

“Living systems do not only reproduce themselves. Their very life processes nourish their habitat and strengthen the conditions of life around them. They thereby create an organism that is larger than themselves or their individual species. When a forest is growing back from a disturbance, herbaceous (non-woody) plants are the first to move in. These plants exude sugars that attract bacteria around their roots. The bacteria in turn exude an alkaline “bioslime” that creates a favorable habitat for themselves as well as for the pioneer plant species. The alkaline condition of the bioslime also allows the bacteria to break down ammonia in the soil into nitrates that are taken up by plants, allowing them to grow vegetatively. This cycle of life creating the conditions for more life continues as the forest gradually grows into a rich, biodiverse ecosystem (ecological succession). Living systems are not only self-regulating but they are relational in so far as they build the conditions of life around them.”

2.4 Symbiosis and symbiogenesis in ecological systems and social systems: a new synthesis

Now, how have the human sciences entered into a dialogue with these non-human life sciences and earth systems sciences?

The first common ground on which a dialogue of mutual learning has begun is the common terms ‘symbiosis’ and ‘symbiogenesis’. For these concepts do not originate in the non-human life sciences, but, rather have a long history in the human sciences. They refer initially to how human beings have lived together in interdependent relationships of mutual support and

sustainability; and, how various communities have learned to live beside each other in peace and mutual support.

Moreover, the communities of practice research has taught us that such informal virtuous, symbiotic social relationships of mutual aid and support exist within and across every social system; even within the most vicious and damaging social systems. So, the vicious social systems that are embedded within and damaging the ecosystems that sustain life are also embedded within and damaging informal symbiotic social systems that sustain the communities in which we live.

The second step, is the realisation that we are not dealing with two parallel paths of symbiotic evolution, one for non-human life and the other for human life. Rather, non-human symbiotic ecosystems and human symbiotic social systems are now seen as co-evolving. They are now seen as interdependent or coupled or, perhaps best, as ‘co-evolving’.

As a result, humans, are now seen and studied as co-evolving and co-sustaining apprentices within their social and ecological systems, or what we call their eco-social systems. This realization is a revolution of the twentieth century. For the last 500 years Westerners have seen themselves, their social systems and civilizations as separate from and independent of nature.

The consequence is the realization that when we are citizens of various social systems, such as states and markets, we are also Gaia citizens of the ecosystems in which these social systems are embedded and on which they depend.

For ecological citizenship, this means that we not only have to think of ourselves as participants in the interdependent ecological relationships that support us. We also have to think of our social systems in the same way – as interdependent – and as coupled to the evolution of ecosystems in either mutually sustaining or non-sustaining ways. Hence the term “eco-social systems”. This is how William Rees puts this point:

The human enterprise is structurally and functionally inseparable from nature. That is, the human enterprise is a fully embedded, totally dependent subsystem of the ecosphere – people live within socio-ecosystems. Human activities can therefore significantly affect the integrity and behavior of supportive ecosystems and these changes immediately feedback

to affect the state of the human subsystem. We can no longer understand either the dynamics of either the natural system or the human subsystem in isolation without understanding the dynamics of the other component.

The third step is the way to design our social systems so they interact symbiotically, rather than destructively, with the ecosystems in which they are embedded and on which they depend. The way to do this is to design them so they interact with their surrounding ecosystems symbiotically: that is, in relationships of reciprocal interdependency and cycles in which the resources we use and the ecosystems we effect always have time to renew themselves.

Here is how Fritz Capra puts it:

“The key to an operational definition of ecological sustainability is the realization that we do not need to invent sustainable human communities from scratch but can model them after nature’s ecosystems, which are sustainable communities of plants, animals and micro-organisms. Since the outstanding characteristic of the Earth household is its inherent ability to sustain life, a sustainable human community is one designed in such a manner that its ways of life, businesses, economies, federations, physical structures, and technologies do not interfere with nature’s inherent ability to sustain life. Sustainable communities and networks evolve their patterns of living over time in continual interaction with other living systems, both human and non-human.”

We will discuss examples of these kinds of Gaia or eco-social citizenship later.

3. Indigenous eco-social citizenship and ecological knowledge

Now, I would like to discuss an indigenous tradition of eco-social citizenship based on indigenous traditional ecological knowledge and wisdom (TEKW).

Indigenous peoples in general have been practicing ecological citizenship for 10,000 to 12,000 year here since the last ice age, and for 150,000 years before that. They and their social systems have always been coupled with their ecosystems in mutually generative and sustaining ways. They have **co-evolved with their ecosystems**.

3.1 The Gift-reciprocity worldview

However, I want to try to describe briefly the tradition of citizenship knowledge and practice that Umeek, Richard Atleo Sr. describes in his book Tsawalk. This is similar to other indigenous traditions on the Northwest coast.

The central point I would like you to notice as we go along is that this tradition converges with the Western tradition I have just described, and complements it in many respects.

A mantra of this way of citizenship is the saying that “the land does not belong to us. We belong to the land.” That is, they and their social systems are plain members and citizens of the living earth in the first instance. They learn how to live together in co-sustaining and co-abundifying ways from listening to and learning from ‘mother earth’.

The central term ‘tsawalk’ means that ‘everything is connected through relationships of reciprocal interdependence.

First, we begin to learn ecoliteracy through participatory self-formation and self-understanding as participants in and engaging reciprocally with the social and ecological webs of life that sustain life.

That is, by apprenticeship in the practices passed on by their ancestors, they come to acquire a way of perceiving and orienting oneself in the world that discloses it as a living system and humans as one species among an extended family of more-than-human living relatives.

This is a participatory and **kincentric** and cyclical way of life. The flora and fauna, sun and moon, creeks and oceans, are our kin – interdependent relatives or relations.

Second, we grow up to realize that we have responsibilities to co-sustain the ecological and social relationships on which we depend for every breath we take – we are active agents in the life systems as a whole, just like any other earthling.

We **take care** of mother earth and mother earth takes care of us in reciprocity.

Third, what then is the **nature of the relationships** of interdependency in which we exist and on which we depend and in which we have responsibilities?

The common answer that is learned by studying how ‘more-than-human’ living beings sustain themselves (earth teachings) is that the relations that sustain life on earth are:

Gift-gratitude-reciprocity relations and cycles. This is a generative rather than extractive relationship to the living earth.

Here is how the Anishinaabe scholar Robin Lee Kimmener explains this widely shared view by showing its translatability into Western systems language:

‘Reciprocity - returning the gift – is not just good manners; it is how the biophysical world works. Balance in ecological systems arises from negative feedback loops, from cycles of giving and taking. Reciprocity among parts of the living earth produces [dynamic] equilibrium, in which life as we know it can flourish.’

The role of clans, masks, dancing, story-telling, and always giving thanks to mother earth is to help us to learn these earthways and lifeways. You learn by putting yourself in the shoes of other “relatives” and learning how they sustain themselves and thus how you can reciprocally relate to them in co-sustaining ways:

The rich language of gift-reciprocity of indigenous peoples describes the same phenomena of earthways that the Western tradition of Gaia citizenship describes in terms of systems theory.

Fourth, in oral cultures you enter into a **dialogical relationship** with the living earth, the animate earth through all your senses: **synaesthesia**

Fifth, through participation, the apprentice begins to experience the **Animacy** of the living earth: that is, the power of gift-reciprocity relationships. It is the power that runs through and sustains life, the greatest power on earth. In participating in its relationships and cycles you animate it and are animated by it. It the ground of your being and is centred in your breath. This is what ‘participation’ in the world means.

It is, as I hope you can see, the power animating the participants in the **Spirit of Haida Gwaii** behind me.

Sixth, having learned these lessons from Mother Earth and her earthways, they apply them to their lifeways. They design their social systems not only so that they sustain the ecosystems on which they depend. They also design them on the model of earth systems. That is, their social systems are gift-reciprocity systems. The indigenous word for ‘potlatch’ – their system of government – is simply the word for “gift”. And, as Umeek reminds us, a gift always entails a reciprocal gift.

3.2 The three states of Gift-reciprocity systems

Like the Western Gaia tradition, indigenous earth and social systems of gift-reciprocity relationships go through three different states: virtuous, vicious and transformative from vicious to virtuous.

Indigenous peoples have built into their traditional knowledge that they learn how to maintain good relations with mother earth and each other by practice and trial and error. Once you see yourself as plain members and citizens within mother earth, not independent and over it, then this is the only way we can learn. Thus, they make lots of mistakes by trial and error and have to learn from them and change their behaviour. The Raven Cycle Stories shared among the indigenous peoples of the Northwest coast are full of 'learning stories' of this kind.

The most common Raven story is of some people failing to reciprocity for the gifts given to them by mother earth, their fellow flora and fauna or from fellow human beings. They become selfish, independent rather than dependent, aggressive rather than cooperative, greedy, avaricious, and ungrateful. They take without reciprocating.

When this happens, as it often does, Raven comes along and does something that illustrates to them the mistake they have made and points in the general direction of how to correct it by reconnecting and regenerating good gift-reciprocity relationships.

Robert Davidson, the great Haida artist and former student of Bill Reid explains this feature. When people become vicious - greedy and voracious - Raven points out this misperception and short-sightedness by taking away one eye of the persons involved. In so doing, Davidson argues, Raven enables these people to see the damage they are doing to mother earth and so to future generations by not reciprocating; by seeing with only one eye.

The next step, then, is to reconnect with the broader gift-reciprocity systems and regenerate healthy relationships with mother earth and each other. According to Davidson, this kind of regenerative Gaia citizenship is exactly what the Haida are doing on Haida Gwaii today in response to four generations of vicious settler resource extraction:

We are now coming full circle, we are the fourth generation in which the white people have instilled their ideas and values, and denied our way of life, without any knowledge or concern of who we were and where we were coming from. It is our generation that is

making the attempt to bridge the gap, to reclaim our identity, our cultural values, the philosophies developed by our ancestors for generations and generations. We are also making a great effort to reconnect with the land. The land is the very foundation of our culture. It is our homeland. We were born into it. We are the stewards: it is our right and responsibility to maintain, nurture and preserve it for the future.

3.3 Transition to the vicious system

In sum, I am suggesting there is a convergence between the gift-reciprocity citizenship of indigenous peoples and the Gaia citizenship of western life sciences and communities of practice. They appear to agree not only on the character of virtuous and vicious eco-social systems, but, also, on the symbiotic or gift-reciprocity way to transition from a vicious system to a virtuous system before it collapses.

The great importance of this for us in the northwest of Turtle Island is that it provides a common ground for us to come together and begin to regenerate gift-reciprocity working relationships together in facing our shared ecological and social crisis across Canada.

But there is even more. I know what to suggest that there is a convergence in the way that the two traditions of gift-reciprocity and Gaia citizenship both analyze the vicious social systems that are causing the shared crisis we face.

Let's take a look at this.

4. The features of vicious social systems that cause the crises.

Rather than building social systems that participate in and co-sustain the social and ecological relationships of reciprocal interdependence on which they depend, we have built social systems that prey on them: that is, on social and ecological capital. One of the best traditions of analysis of how the mode of extraction, production, consumption and disposal that came to global prominence over the last two centuries does this was initiated by Karl Polanyi in 1944 and carried forward by Joseph Stiglitz, Herman Daly, and others. They call its rise the great transformation and great dis-embedding of production from the underlying symbiotic ecosphere and social sphere that sustains life.

4.1 The great transformation

First, it dispossesses the indigenous people from the land they have been taking reciprocal care of for millennia, discounts their traditional ecological knowledge, and places them on tiny reserves or in residential schools, and converts their traditional territories into property.

Second, this modern mode of production extracts nature's resources from their interdependent participation in the fragile symbiotic networks and renewability cycles that have sustained life for over 3.8 billion years. It then inserts these 'resources' into the abstract, competitive relations of the global market system. The damage that this complex set of processes causes to the ecosphere along the dispossession-extraction-finance-commodification-production-consumption-and-waste disposal chains is treated as "externalities" to the production system.

Third, it extracts humans and their capacities to produce and consume from the informal symbiotic social relationships that sustain them and their communities. It then inserts them into the abstract, competitive relationships of the global labour market. The damage that this causes to the cooperative social relationships that sustain communities and the well-being of their members is treated as "externalities" to the vicious system.

Fourth, it extracts the human powers of self-government out of local, self-governing communities of practice and delegates these to representative governments through competitive party and voting systems; and thereby rendering governments dependent on powerful actors in the production system for taxes, finances and jobs. The damage this does to learning how to exercise powers of democratic self-government with fellow citizens locally is treated as another "externality" of the system.

Moreover, whereas in a virtuous and self-sustaining system the waste of one member is always usable by another member, so there is no disposable waste, and renewable resources are always used in ways that respects the conditions and temporality of their renewability cycles, this linear-developmental system recognizes no such "natural" or "external" limits.

It is an extractive rather than generative system; and linear rather than cyclical.

4.2 The Predatory System

As we can see from this features, this is a classic vicious or super-predator system that is unsustainable and ultimately self-destructive. It is a system that **depends** on, and is nested within, the informal social and ecological relationships that sustain life on earth, yet, at the same time, it **preys** on them in an extractive and linear way; yet, at the same time, it treats the damage it does to them as **externalities**; as if it were **independent** of them.

This system expanded twenty-fold over the last century. This expansion has enabled us to see clearly its fatal flaw or Achilles' heel.

If 'business as usual' continues the system will destroy the social and ecological conditions that sustain life for most human beings and for hundreds of thousands of other species and ecosystems (a sixth mass extinction).

If we respond simply by recognizing the damage and trying to internalize the costs to repair the damage it causes, the system would be unprofitable and it would collapse.

Therefore, whether you are a defender or critic of the system, the only solution is to transform the system by transitioning to symbiotic green fuel sources, technologies and ways of working together that sustain, rather than destroy, the social and ecological conditions that sustain life on this small planet.

This kind of analysis can not only show us a solution to the crisis that can be endorsed by critics and defenders alike. It can also show us the obstacles to making the transition and the best way of transition to take.

4.3 Overcoming obstacles to the way of transition

Let's look at the obstacles first. As we saw at the beginning, many experts say that one of the main obstacles is that we mis-perceive the crisis of sustainability because we see the ecosphere as external and humans and their social system as independent of it. We can now see clearly that this mis-perception of independence and externality is precisely the form of self-awareness that is generated by being dependent on and participating in this vicious system. As long as we remain within it, we will thus tend to deny or discount the crisis, and, if we try to respond from within the system and its worldview, our reforms will be self-limiting.

We will always lack what Robert Davidson calls the 'depth of vision' that can only come from perceiving the system from without as well as from within.

If, conversely, we free ourselves from the vicious system to some extent, step back, move around, and begin participate as Gaia citizens in eco-social communities of practice in our everyday life to some extent, we can then begin to see the limitations of this dominant misperception and the social systems that hold it in place. This is what I have tried to do in this lecture.

Moreover, the more we participate as plain members and citizens in the life-sustaining social and ecological relationships of reciprocal interdependence and of cooperation rather than competition that are all around us, yet are overlooked from within the dominant vicious system, then we can also begin to see more clearly as we go along the way of transition itself.

Let's take a look at this.

4.4 The ways of transition

As we have seen, the life sciences and indigenous sciences both suggest that the existing, symbiotic life-sustaining eco-social systems can be the basis of regeneration and transformation. They are the ground of the third type of cycle of life systems: that is, of the transition from a vicious cycle to a virtuous cycle. We saw the earlier examples of: a forest ecosystem regenerating after clear-cutting; and Fritz Capra's quotation on building our social infrastructure on the model of symbiotic living systems; Robert Davidson's Raven example of decolonization.

The communities of practice literature suggests that such informal, symbiotic social relationships of mutual aid and support exist everywhere, within every institution and activity; even the most aggressive and destructive forms of organization. It is the basis of sociality within them, as well as more obviously in intentional communities, such as families, friendship the volunteer sector, community-based organizations, fair trade, and so on. So, we are inhabitants of both types of systems.

If this is accurate, then as in all cases of regeneration, the way of transformation of the vicious systems and the transition to a self-sustaining future is to participate in, cultivate and

expand, scale out and up, the symbiotic or gift-reciprocity relationships of reciprocal interdependence in which we find ourselves in our everyday activities.

This way of transition is, as Gandhi put it, 'being the change' that we wish to bring about in the way we bring it about.

A central feature of this way of regeneration and transition is that there is no privileged position or actor. It is a way-of-being-in-communities of practice whenever and wherever we find ourselves, in every step with take; whether one is involved in producing, consuming, lawmaking, teaching, protesting, volunteering, commuting, and so on, there is the possibility of using green fuel, technologies, and ways of working together.

There are countless examples of Gaia citizenship communities of practice around the world, as you all know. There are countless examples right here in Uvic and Victoria that we can discuss in the question period.

One important example is the "cradle to cradle" movement. This movement does not think of economics, technology, architecture, city planning and transportation in terms of the vicious system; that is in terms of linear development and use and then disposal of the waste somewhere out there. They call this the "cradle to grave" mode of production. In contrast, they design energy use, buildings and technologies in biomimicry of trees and whole cities and regions in biomimicry of forests. That is, everything is designed so that the waste of one sub-system is used by another in cycles of use and re-use. Hence, like the tree that eventually becomes the harvest log of future growth, so too each member of the virtuous system eventually becomes the cradle for the regeneration of others.

The underlying point is that the more humans reconnect and engage in these reciprocally interdependent and cyclically renewable systems, the more they animate and regenerate the living earth and living social systems; and, reciprocally, the more that Gaia animates them. This is, as we have seen, is what it means to participate in the very animacy of the living earth. It is the spirit that reciprocally animates the passengers aboard **the spirit of Haida Gwaii**.

And, each step along this multiplicity of paths of transition enables us to disclose and perceive a little more clearly the good ways forward.

Conclusion: treaty relationships

In conclusion, I would like to mention one type of gift-reciprocity relationship that is essential to the whole transition. Here on Coast Salish territory, throughout BC and Canada, the reconnection and regeneration of virtuous eco-social relationships needs to take place in partnerships between indigenous and non-indigenous peoples. Indigenous peoples have cared for, sustained and co-evolved with the ecosystems that now sustain all of us for over 12,000 years. They have a wealth of practical knowledge of how to live here in sustainable ways. The dispossession of indigenous peoples from the living earth to which they belong was the very basis of the imposition of the destructive system the settlers put in place. It was, and continues to be, not only a monumental social injustice, as our supreme court now recognizes to some extent. It was and continues to be a monumental ecological injustice, as we can also now see.

To redress this double injustice, we need to rebuild and regenerate relationships of reciprocal learning and reciprocal interdependence with each other and the living earth at the same time. I have suggested that the basis for such shared relationships of reconciliation are available to us here and now. If I am not mistaken, this is precisely the kind of gift-reciprocity relationship indigenous people were offering to the newcomers in treaty negotiations when they arrived, and which were mis-perceived and overridden. We now have the opportunity and responsibility to respond to that initial offer in the appropriate reciprocal way.

Thank you