



July 2016

# To Educate Eco-Sapiens<sup>1</sup>

Written and Presented by Philip Snow Gang © 2016

*[Eco from the Greek oikos, house, referring to Cosmos as our house-home. Sapiens from the Latin sapere, "to be wise."]*

## **(Voice of Gaia)**

*I am Gaia. I represent the entire Earth community, which includes all beings – humans, animals, plants and all forms that enable me to manifest my innate wisdom. I maintain processes for Earth's dynamic balance. What you do to the Earth, you do to that dynamic balance. If you are kind, gentle, and respectful to Gaia, you are kind, gentle, and respectful to yourself.*

*I am not an abstraction. I am you and you are me.*

*Deep-seated, deep-rooted connections  
Opening the portals to wider awareness  
Embracing the cosmic dance of  
Differentiation  
Autopoiesis  
and Communion*

After 75 years on planet Earth, I have found a home that resonates with my heart, mind, and soul. You would think by these images that I am deep in a wilderness area away from dense populations. Not really. I am walking well within the city limits of Portland, Oregon, with its many forested parks and endless trails – where nature touches my soul. I live in a rain forest. Why is that important? How do I feel when I am embedded in nature?

It changes everything. I hear the trees whispering, "Welcome home." I feel connected to Earth's rhythmic pulse. Awareness freezes past and future. There is communion.

*Deep in the body forest  
I give my breath to the natural totems  
I give my senses to observing  
the expressions of Earth.*

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<sup>1</sup> From film "To Educate Eco-sapiens" produced by Sarah Denae and found here:  
<https://vimeo.com/178044426>

After some minutes being present in this sensorial world, thought subsides and something emerges from deep within that expresses the what is of now: truth, inspiration. The trees share their wisdom. There is a dialogue. They inspire me and remind me of the journey. I pose questions and listen carefully to responses. Embedding myself in Gaia allows spirit to sound its note to be aware and embrace the infinite wisdom.

*My story  
is your story  
is the Universe story  
is the Earth's story  
is the Universe story.  
My story  
is your story.*

I share my story with you because this film is what it is because I am who I am. Our stories illuminate each other's lives. They open hearts to feel and eyes to see. Stories are our very nature. Joseph Campbell tells us that throughout millennia, humans from diverse regions of the world reveal story in mythical form, "pointing to a constant requirement in the human psyche for a centering, in terms of deep principles."<sup>1</sup> He describes the 1969 image of the Earth – looking back from the moon – as the mythical symbol of our time.

Since the dawn of human communication, we have shared our stories of deep time and mystery. Deep time is that sense of feeling-knowing the invisible thread of connection to origin. The myths of indigenous peoples characteristically describe the creation, responding to the human need for a sense of place and time, a sense of belonging.

Indigenous cultures tell deep time stories. Ed Edmo, a Shoshone-Bannock poet and traditional storyteller about Northwest tribal culture, writes:

*Grandfather  
storyteller  
I come to you with thirsty ears*

*Grandfather  
storyteller  
weaving words of ancient strength  
words colored with ageless time  
words that are carried on the welcome wind  
words floating on rivers of purity*

*Grandfather  
storyteller  
I come to hear wisdom  
wisdom that is not yours alone  
wisdom that you share  
wisdom I shall pass to the children<sup>2</sup>*

They tell stories to pass on their heritage and provide metaphors for the safekeeping of Gaia's dynamic balance. The continuation of their group depends on these stories. It is a primal dependence that those of us who live in the industrial world do not regularly experience. Separated from organic life-systems, ecological balance is an abstraction read about in books or heard in lectures.

Formalized schooling has been civilization's response to sharing knowledge with the rising generation. It accomplishes this through a 19th century mechanistic paradigm, parcelling information in fixed categories called "subjects" and assigning grades based on how well the learner has memorized facts. Rewards and punishments are stimuli for meeting standards. What is the result? Competition: where ends trump means. The primary objective is to fill the "empty vessel" with information-knowledge for the function of getting a job and fitting in to the culture.

Parents, concerned about their children's future, add their own fears about success, resulting in an exacerbation of conditioning by home and school.

So where do young people engage the meaning of life? Who raises the exploratory questions for understanding of self and self in the world?

Renowned spiritual teacher, J. Krishnamurti, spent his life exploring the domain of psychological freedom. There is an ancestral and cultural imprint that prejudices, or conditions the mind, resulting in unexamined assumptions about life. He asserts that to rid oneself of these assumptions is freedom's gateway and the essential task of education. He names the process unconditioning. Krishnamurti explains:

***"The question is whether (the teacher) and the student in their relationship in a school can uncondition themselves?"***

***"[Is it] possible to educate human beings, from childhood and beyond, to cultivate, to nurture the whole outward and inward totality of [each person]. That is, for me, right-education. Is it possible in our life to educate ourselves completely, totally, inwardly as well as outwardly?"***<sup>3</sup>

Exploratory questions are essential. These are questions "worth thinking about" and take a different direction based on the developmental stage of the learner.

Stories provide a sense of wonder and appreciation for the significance of life. They offer questions and metaphors to comprehend the mystery, and they identify the overarching contexts that shape who we are. They are an essential container in the unconditioning process.

I was fascinated by deep time by the age of 10, and now based on my work with children and adults for more than 40 years, I created a series of contextual stories that include: "The Epoch of the First Nine Billion Years," "The Story of Earth," "The Coming of Life," and "The Human Story." These stories embrace the creativity in the Universe. The lens of exploration is the universal tendencies that exist through all space and all time:

**DIFFERENTIATION**  
**AUTOPOIESIS**  
**COMMUNION**

Autopoiesis, as described in Francesco Varela and Humberto Maturana's Santiago Theory, is a process of cognition. When a living being connects with its environment, learning takes place. All life, from single cell organisms to multicellular mammalian beings, is constantly in a cognitive process. Life is cognition. Life is learning. And learning is life. I find that profound.

Mathematical cosmologist, Brian Swimme explains:

*Differentiation was the first law that scientists could regard as universal among life and the Universe. It is amazing. At one time we were all hydrogen and helium gas. And then right away it starts differentiating into stars, each one is different from the other, and then planetary systems come into being. So, this movement to differentiation is very deep in the Universe.*

Swimme takes Varela and Maturana's theory of autopoiesis and applies it to living entities and relates it to the macrocosm. He says:

*Recently another tendency has been observed and is identified as autopoiesis or self-organization. No one tells a cloud of hydrogen gas how to construct a galaxy; it is just in the nature of the Universe.*

*For the third tendency, we say "communion," but interconnectivity would be another descriptor. It is the way in which the Universe becomes more progressively related. You start off with hydrogen gas, then after a while you have a planet, where there is an atmosphere moving into the hydrosphere. It is all interpenetrating. Then you have the development of life itself and eco-systems.<sup>4</sup>*

As each contextual story unfolds, storytellers can be quite poetic in how they metaphorically introduce/imbue these concepts.

Maria Montessori identifies the ages between five and twelve years as the sensitive period for story. She says:

*Our aim...is not merely to make the child understand, and still less to force him to memorise, but so to touch the imagination as to enthuse children to their inmost core.<sup>5</sup>*

*...we must not begin by giving them elementary facts..., to make them merely understand its mechanism, but start with far loftier notions of a philosophical nature, put in an acceptable manner, suited to the child's psychology.<sup>6</sup>*

And she extols an underlying theme that provides aspiration for the wisdom and the power to serve others:

*All creatures work consciously for themselves, but the real purpose of their existence remains unconscious, yet claiming obedience (to universal tendencies).<sup>7</sup>*

Montessori calls this process cosmic education. It provides us with the capacity to fall into bliss with existence; to marvel at creativity; to observe the natural cycles; and to be aware of being aware. It is significantly more than materials and lessons; it is a way into the spiritual essence of life. It is the foundation for right-action in each of our lives, embracing what Montessori identifies as the “unconscious love” throughout space and time.

Before the age of five or six, the “preparation” for story is direct contact with the natural world – to observe, to use all the senses to absorb beauty, colour, shape, and sound. Exploring the whole of the flower, the tree, the animal is more important than understanding the name or the name of its parts. The adult has to be ever so careful to help the young child grok rather than dissect. In this way children can appreciate the integrity of beingness.

**Grok:**

***To understand intuitively.***

***To know without having to think intellectually.***

When our grandson, Max, was three years old, he came to Marsha to say he was hungry. Marsha replied, “Would you like to eat the sunlight?” He looked puzzled. They went outside where Max picked an orange off the tree, and Marsha offered slices that looked like slices of the sun. “You are eating the sunlight that helped create the orange.” An hour later, Max appeared and asked if he could eat some more sunlight: this time, an apple.

In juxtaposition to Marsha and Max’s exchange, in a recent walk towards my favorite trails, I overheard a mother of a four-year-old say, “Remember we are not going to walk in the woods, we are staying on the path.”

Conditioning is not always subtle.

The natural world is also the immersion point for older children. Many teachers begin with the Universe story. Recently, deep in the Tryon Creek forests, I came to the realization that the most profound way to introduce the story of the Universe is engagement in Gaia. What if children begin here? The night sky is an abstraction for most of us. We do not have an experience of “out there” the way our ancestors had. Today, more than half the population lives in urban areas and that will increase to 65% by 2050.

Why not start with the concrete – Gaia – and create a sense of wonder around a forest niche (or seaside, or mountain, or a garden, or any place in nature.) The adult poses exploratory questions. In the silence of the space, s/he says: What do you notice? What do you smell? What do you hear? How did all this come to be? What are the interconnections – Earth’s natural systems – that maintain these patterns? An exploratory dialogue emerges. Rituals, like John Seed and Joanna Macy’s Council of All Beings, where participants “become” an aspect of Gaia and act it out, are essential activities for discovering our roots and deep-seated connection to nature. John

Fowler, who works with ages nine through twelve in an inner-city Montessori public school, uses the Council ceremony every year to imbue the children in the story of their “chosen” animal. They see and know as if they were that being.

And so, after some time, the teacher ponders with the children:

Perhaps the cosmos has a story to tell us about how all of this came into being. It is a story about stars and supernovae, solar systems and planets, bacteria, humans, and polar bears. Would you like to hear more?

Everything you see right now, right here, and everywhere, was born when our grandmother star exploded a very, very long time ago. Shall I continue?

Reflective questioning is integral to Krishnamurti’s notion of deconditioning. These questions allow for teacher and learner to explore issues from all angles. Reflection is essential and without judgement. I wonder why? and I wonder how? may be the arrows that deconstruct prejudices and assumptions.

For the learner beyond 12 years, the same stories are integral. Now, with an expanding self-reflective awareness, personal and group ritual, including the Council of All Beings, can make the implicit explicit. Noting that the Universe is always pressing for further differentiation, autopoiesis, and communion provides young people an opportunity to explore how these scientific phenomena present themselves in those four contextual stories.

I am back within the Tryon Creek forest surrounded by red cedar, fir, ash, and maple. With all the other life forms, I am inside a living, breathing diorama. I observe differentiation. How did all this diversity emerge? The Earth is alive, and I gasp at the wonder of it all.

I observe autopoiesis, self-replication in nature’s offspring. This self-replication is dependent on interacting-coupling with the environment. Life needs nutrients from the environment in order to reproduce itself.

And communion is omnipresent. I am embedded in an ecological community, an ecosystem where wholes and parts dance together to fulfil their cosmic tasks. And I am part of that niche – inhaling and exhaling – I give, and I take.

When it comes to “The Human Story,” for adolescents, engagement with mythology and heroes of the ancient world can also be explored through the lens of modern films like Star Wars and The Matrix. This leads to the work of Joseph Campbell and the Power of Myth and its relevance to what he names the “hero’s journey.” Campbell identifies three elements on the journey of re-inventing oneself:

***SEPARATION***

***INITIATION***

***RETURN***

The keynote for the hero's journey is to follow one's bliss – listening to one's heart and pursuing truth.

Following one's bliss is the pathway to what Thomas Berry identifies as “the great work” and Maria Montessori calls our “cosmic task.” Ultimately, we live a life aligned with our values that will benefit the larger web of being – the ecosystem. To enter into your cosmic task, or great work, you have to deeply explore your own story; stories that include challenging nodules need to be released or transformed in order to enter into a leadership capacity to carry one's vision forward. Otherwise there is a disconnect between who we are and what we do.

To embark on the hero's journey, one observes a dissonance between self and the present reality. The call to adventure comes from a deep-rooted place of passion – a passion so strong that going forward becomes what Krishnamurti calls choiceless awareness – you see with complete attention, and there is an immediate knowing that may go beyond ordinary societal expectations. Rumi says:

*You are not a drop in the ocean.  
You are the entire ocean in a drop.*

*Seek the wisdom that will untie your knot.  
Seek the path that demands your whole being.*

As I look back on my life, I have experienced several periods of reinventing myself. On at least three occasions, mammoth changes have been undertaken where I have entered into the cycle of separation, initiation, and return.

In the late 60s, I was a manufacturing engineer in the military aircraft industry. My children attended a Montessori school, and I established close friendships with the teachers. I was also reading philosophy and psychology. In July 1973, I rather innocently said, “Someday I might like to be a Montessori teacher.” And Don Jenney said, “Why not now?” Six weeks later, I arrived at Bergamo, Italy, for the Montessori teacher preparation course. I went through a yearlong initiation process and returned from Italy to work with children and adults to share what I had learned.

Feeling disassociated from Montessori organisations, including schools, in 1988, I withdrew from the training of trainers indoctrination process as well my position as head of school. I was searching for congruence between the Montessori method and the way Montessori organisations behaved, which included a way to prepare teachers in a process that was confluent with the process of working with young people.

As Joseph Campbell explains:

*Follow your bliss  
and the Universe will open doors  
where there were only walls.*



In 1990 I was instrumental in the founding of the Global Alliance for Transforming Education (GATE) – a worldwide network of holistic education organisations. We published the document *Education 2000: A Holistic Perspective*. Subsequently, I met and have worked with a host of other 21st century visionaries, including Brian Swimme and Fritjof Capra, Robert Muller – Chancellor of the UN University for Peace, psychologist Ralph Metzner. A six-year cycle of initiation into a new way of being in the world, including a three year experience as faculty mentor at California Institute of Integral Studies (CIIS) – one of the first online doctoral programs, culminated with the creation of the TIES graduate programs in Integrative and Montessori Integrative Learning. This marked my “return” – implementing what I learned over that six-year span.

During this same stormy and creative period, I left a marriage of 30 years and subsequently discovered profound love with Marsha Morgan. We worked together for the next 20 years.

When Marsha began sinking into Alzheimer’s, my world was turned upside down – again. This time “separation from the known” was forced upon me, and I began searching for new ground. A period of immense creativity followed her entrance into full-time care. It was, and still is, a search to understand at the deepest levels what we had created together and where I am taking it without her physical presence. Three years later, I am in the process of articulating our discoveries.

These journeys of self-discovery are not limited to group or class; they are an integral part of the primordial archetype that resides in all of us – a seed in our consciousness that sprouts and then doors open for the unfolding of story. Since this kernel is within every human, I began searching for similar patterns of cyclical development in meta-systemic organisation. I did not have to look very far to answer the question: Might Joseph Campbell’s journey of separation, initiation, and return be a further articulation of differentiation, autopoiesis, and communion?

Differentiation is the tendency towards new forms, new combinations and complexification. Separation is the urgency to renew one’s self when we feel separated from the current reality that surrounds us. Separation, then, is differentiation at a psychological level.

In autopoiesis, entities are continually self-making, both self-contained and in relationship (coupled) to their environment. Life needs, and is dependent upon, its environment for sustenance. And in the networking process, both life and its environment are transformed. In this way, the entire network continually “makes itself” while simultaneously bringing forth a world. During Campbell’s initiation phase, we go through a process of gaining new wisdom-knowledge, creating a new self by going through structurally coupling – an initiation to step into our new identity.

Communion is the synergy that fosters more progressive relatedness. It results in integration, new networks, and increased adaptability. The outcome brings forth solar systems, planets, and ecosystems. In Campbell’s notion of return, we come back to tell the story after initiation. This is a catalyst for others to embark on the re-creation pathway, expanding the network for new thinking-being.

During the 1970s when Jim Lovelock and Lynn Margulis collaborated on the “Earth is alive” hypothesis, they gave it the name Gaia, after the Greek goddess Mother Earth. Initially called a hypothesis, it has now been elevated to the status of Gaia Theory as we discover more and more about how the Earth’s systems and cycles work collaboratively, replicating life from the micro to the macro level.

**Gaia Theory:**

*“Living organisms and their inorganic surroundings have evolved together as a single living system that greatly affects the chemistry and conditions of Earth’s surface.”*

*(Gaiatheory.org)*

The Earth, Gaia, is a living system of systems, appropriately called Mother Earth. Most native traditions resonate with this. They hear Gaia’s voice and listen closely.

Ed McGaa, Eagle Man, is a member of the Lakota Sioux. He writes:

*It is true that many of the old ways have been lost. But just as the life-giving rains restore the earth after the drought, so your power will restore the Way and give it new life.*

*We ask this not only for the red people but for all the people that may live. In ignorance and carelessness they have walked upon Ina Maka, Mother Earth. They did not understand that they are part of all beings, the four-legged, the winged, grandfather rock, the tree people, and our star brothers. Now the Earth and all our relations are crying out. They cry for the help of all people.<sup>8</sup>*

What if we were all able to tune into Mother Earth, Ina Maka, Gaia? What might she tell us about her present situation?

**(Voice of Gaia)**

***Please listen to me. Balancing my systems has always been a challenge, requiring extraordinary levels of cooperation. Over the eons, despite the sun’s increased temperatures, the Earth’s temperature has maintained its habitable zone, and I have been able to keep oxygen in the atmosphere in perfect balance; despite the continuous erosion of rocks containing high amounts of salt, I have been able to keep the salinity in the oceans in perfect balance. For over 3 billion years, I have been able to balance just about everything in all natural systems on which my life depends. However, during the last 200 years, with the increased presence of two-legged beings, many of my ecosystems that keep me alive are being destroyed. You who listen closely know what to do. You have the technology. Please help me on our journey. Find your innate wisdom for right-action.***

Perhaps Gaia, acknowledging the impending peril, is organizing at levels we humans cannot perceive. Is it possible that Gaia needs us as much as we need Gaia? When we change, Gaia changes; when our consciousness expands, so does Gaia’s in the ultimate structural coupling.

Each of us knows groups and individuals who have that innate wisdom for right-action. All one has to do is Google terms like ecological awareness, environmental science, cosmic education, planetary collective, Eco-sapiens, integrative learning, transformative learning, systems thinking, spirituality in education – the list could fill a book. Or talk with a graduate of UC Berkeley’s College of Natural Resources.

You will discover people and organizations that have a vision for a different Earth community – one that lives in balance with each other and with the Earth.

Initiatives for the Earth’s renewal are surfacing around the world. Might Gaia be entering the stage of recreating herself? Shifting from the current reality to one that takes her forward to living sustainably? What sort of initiation might be engaged to make the separation from the Gaia of now to the Gaia of tomorrow?

While working with the indigenous peoples of the Amazon, filmmaker Neal Rogin asked how the Pachamama Alliance might help. Their reply was simple, “Tell the story of everything to everyone.” The result is the documentary *The Awakening Universe*. Films like this are very powerful and extremely important because they viscerally connect today with the 13.7 billion year story of our ancestors. Everything started with hydrogen and helium and now we have trees, giraffes, and opera singers.

My core question, the one that heeds the advice “to tell the story of everything” is:

***What are the contexts and processes in education that might liberate teachers and learners so that they become catalysts for a “new human” – one whose integral relationship with Gaia is bound by right-action and love?***

And the follow-on question is:

How might dialogue and exploratory questions help build a sense of ecogenesis and cosmogenesis?

In my 1987 book, *Rethinking Education*<sup>9</sup>, I developed a view of humanity and nature that follows along significant paradigm shifts. I define these stages as:

***HUMANITY-IN-NATURE***

***HUMANITY-WITH-NATURE***

***HUMANITY-OVER-NATURE***

***HUMANITY-THROUGH-NATURE***

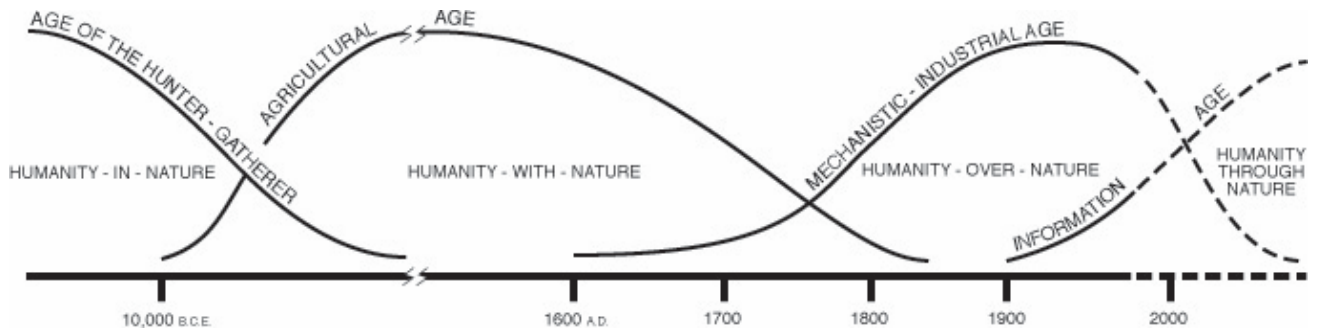


Illustration from *Rethinking Education*, Dagaz Press, 1989

With humanity-in-nature, there is no differentiation between the “in here” and the “out there.” We see in their 30,000-year-old cave paintings. We see a texture of immersion in all worlds. They became the bison; they are the tree – in different states, in different forms. They were not “drawing” – spirit was drawing through them. Immersed in the natural world, they grasped meaning through connection and dependence, not scientifically, but viscerally.

In *Rethinking Education*, I wrote:

*Humanity-through-nature is a giant shift in consciousness... It requires individuals to see the whole picture and is transformative. It is intuitive – beyond the mind... It is all things that Eastern philosophers and mystics knew about consciousness. As humanity-through-nature, the people of the 21st century have several responsibilities. We need to live by conscious choice and design within the ecological and resource limits of the planet. We need to develop effective alternatives to our current patterns of violence, particularly war. And we need a new orientation for our social, educational, and political institutions.*

Without intentionality to develop that further, I now see these past 30 years as my continued exploration of humanity-through-nature in education... to see with the awareness of humanity in nature, only now from the perspective knowing that we are ecogenesis and cosmogenesis unfolding itself.

Those contexts – ecogenesis and cosmogenesis – respond to the question I raised.

I sit in alignment two meters from a huge Oregon red cedar. It is different from the rest of cedar trees and still different from all other trees, just as I am unique among all humans and humanity is unique amongst all other life forms. Uniqueness continues through larger and larger nested hierarchies – on Earth, amongst the planets in our solar system, within the Milky Way galaxy, and amongst all galaxies in the cosmos-Universe. At the level of universe all is one.

The single most important realization I have had in my life is that the Universe is a whole composed of wholes, that are composed of wholes, all rhythmically and systemically balanced so that there is a pervasive unity from the infinitesimal to the infinite.

In 1967, Arthur Koestler coined the word holon to describe the part-whole phenomena. A holon is the relationship between entities that are self-complete, wholes and entities that are seen to be dependent parts. To me, they are integral luminescence of beingness.

Traveling back through the nested hierarchies within the Universe, there are holons of galaxies. Our Milky Way galaxy embraces star system holons, one of which contains the holon of planet Earth, where a diversity of systems are an interplay, a vibrating dance of holonic entities.

Our holonic Universe expresses itself through differentiation, autopoiesis, and communion, creating a chaotic, yet consistently dynamic, balance throughout the cosmos. Our Earth, Gaia, expresses that same systemic-holographic “structure.”

If you take only one idea away from this presentation, I hope it is a sense of your visceral connection from the holon that is you through all the systemic holons that constitute your body as an integral holon of Earth, solar system, and cosmos. Feel it and know its truth. If you pass that sense of being in the world on to children and adults in your sphere of influence, you will be engaging in a process of furthering the evolution of eco-sapiens.

Returning to my question: What contexts and processes in education might liberate teachers and learners so that they become catalysts for a “new human” – one whose integral relationship with Gaia is bound by right-action and love?

Except for a six-month interlude when I was 11 years old, my education was not holistic. And I was consistently searching for integration and origins. That is why I chose science as my vocation. Science became my mediator to counsel me. I grew up in urban New York City with little or no kinship to natural environments or cosmos. My childhood was void of visceral experiences of being in nature, so science provided the language to help me see the systemic intercomplexities of Earth and Cosmos.

In the early 90s, I participated in dialogues at the Elmwood Institute. Established by scientist Fritjof Capra, it was an opportunity for individuals from different disciplines to explore ecological principles. Capra presented eight functions that constitute the systemic view of ecological relationships.

The Systemic View of Ecological Relationships

***1. The unity function***

***2. and 3. The partnership functions***

***4. The matrix function***

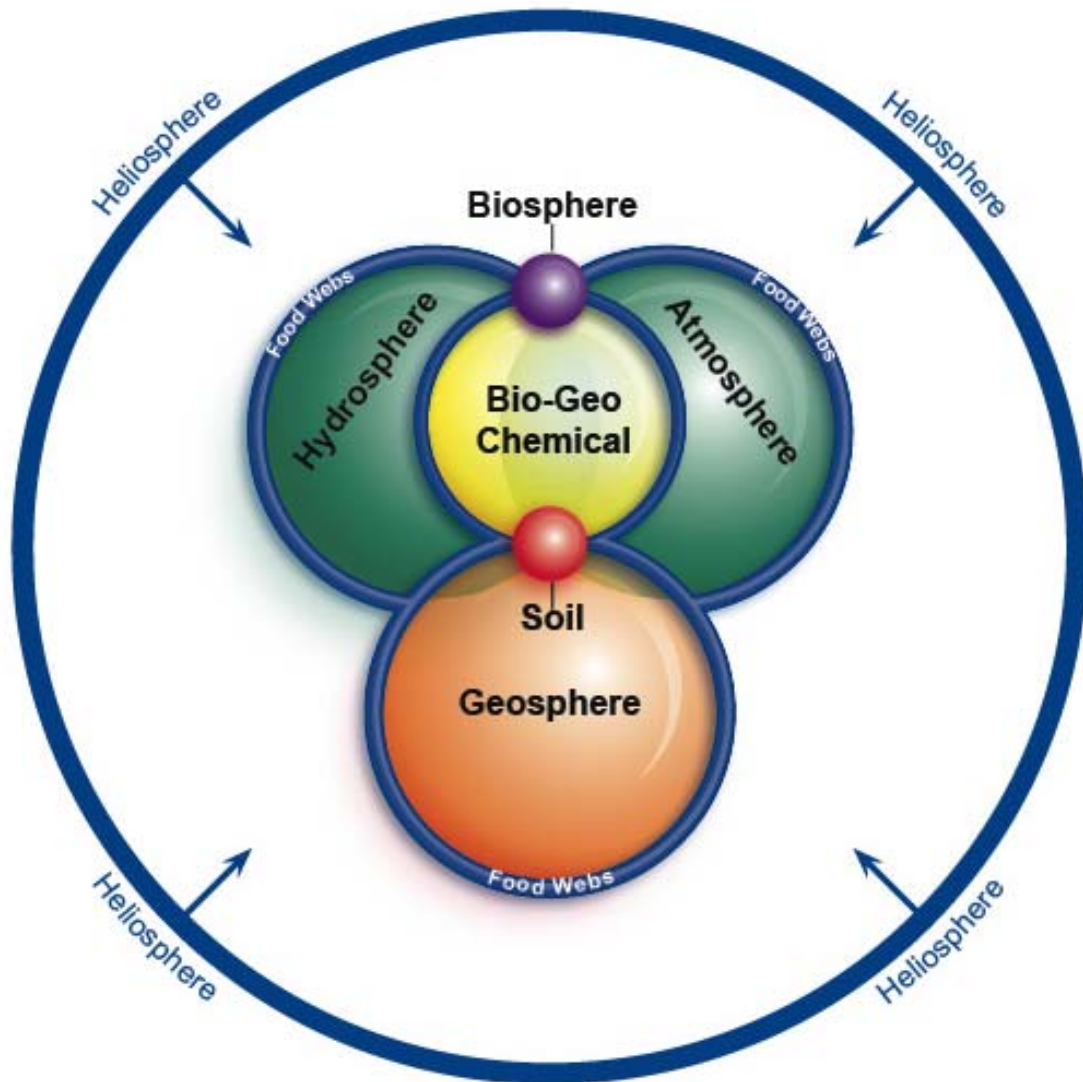
***5. The stability-maintenance function***

***6. The feedback function***

***7. The growth function***

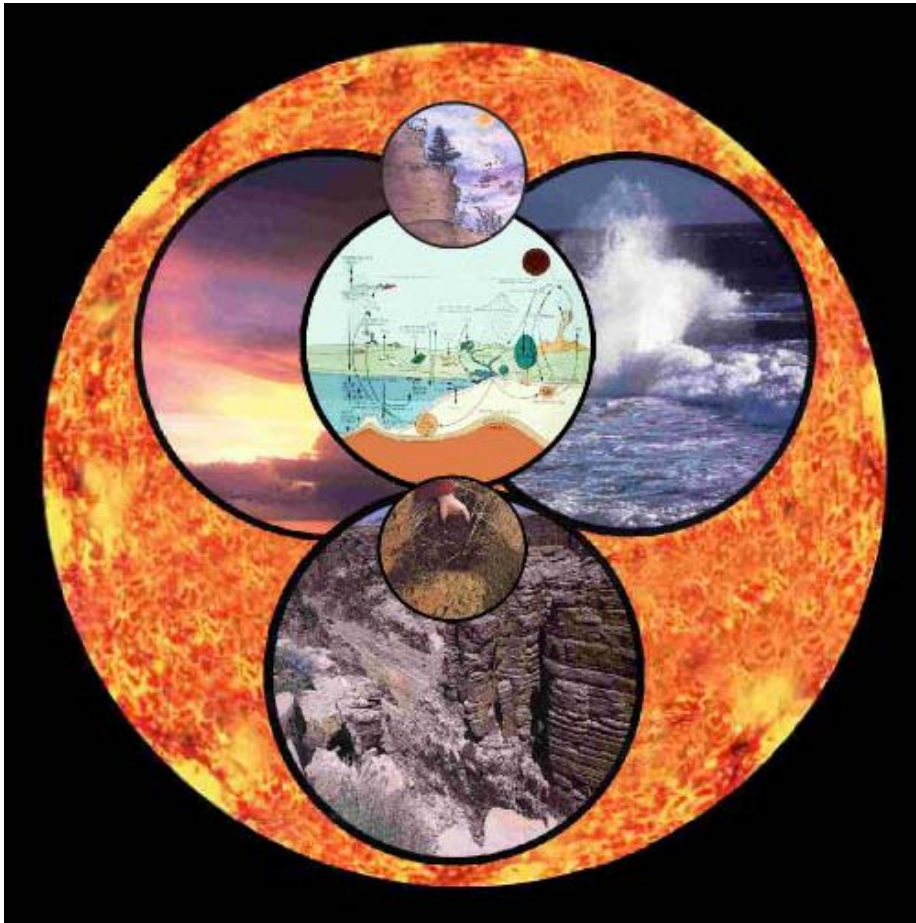
### **8. The energy function**

Inspired by Capra's eight functions, Marsha created this Natural Map representation of Gaian Community, which depicts, in the absence of hierarchy, the integrated dynamics of holarchical systems within holarchical systems.<sup>10</sup>



Integrating the whole, the Earth's bio-geochemical cycles represent the unity function in Elmwood's ecological framework. The atmosphere and hydrosphere – a duality expressing a unity – are the partnership function. The matrix function is represented by the geosphere, the carrying capacity for Earth systems. The stability of Gaia rests on the preservation and restoration of the soil. Might the realization that the soil is our stability point raise awareness? Flowing throughout all of these is the feedback function, which for Gaia are food webs. What processes provide change and creativity for the Earth? Life itself – the biosphere. And the energy function for our Gaian community comes from the heliosphere, our sun.

Here is the same image that was created using the Our Planet, Our Home<sup>11</sup> mobile map material:



Most people are so far removed from the natural world that they have lost their visceral connection – their holonic connection. Consequently our organizations and communities are based on mechanistic, hierarchical structures, without flow and integration. While exploring schools, personal relationships, individual lives – and noticing the dance of Gaian functioning – one might observe parts of the tapestry that are present as well as parts that are missing. What is the stability point? What function unifies the relationships? What is the partnership that contributes to the whole? The matrix – resources from which everything arises? What built-in system – the feedback function – balances the whole? How do things grow and change? And what provides the energy for the network?

Our human ancestors did not have science to help them understand their relationships. They were embedded in the natural systems and did not need definitions. The question arises: In what ways might modern humans in their personal relationships, communities, and organizations, function if we had maintained our dynamic balance with nature?

Building on the ecological functions of natural systems, Marsha began exploring how this perspective might be applied to human systems of organization – even individual lives or

personal relationships. We spent more than 15 years analyzing communities as well as our personal lives using the perspective of ecological functions. Marsha had direct experience of a holographic Universe. She reasoned that human communities are derivative holons of the whole Earth system of ecological networks – with the same propensities for organization. Even if applied metaphorically, it could lead to deeper awareness. While Marsha was developing her approach to natural mapping, Janine Benyus first introduced the idea of biomimicry.

*Biomimicry is an approach to innovation that seeks sustainable solutions to human challenges by emulating nature's time-tested patterns and strategies.*

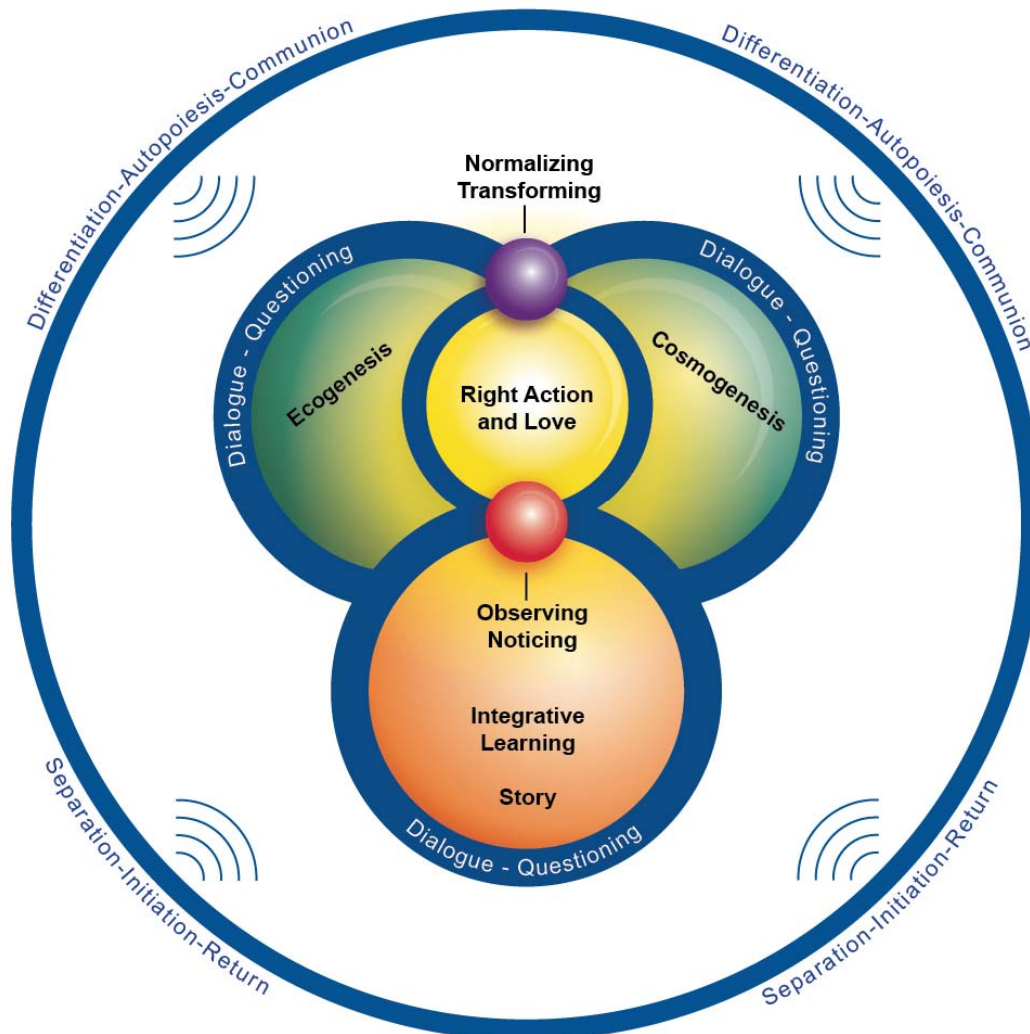
*(biomimicry.org)*

In 2014, Marsha's dementia progressed to a point where I could no longer care for her. This disorientation dilemma drove me into my personal creativity river to contextualize our collaborative work. It is from this vantage point that I began to explore that ongoing question.

This natural map-holon is a result of that exploration. It describes the relationships that compose Gaian education. We did not set out with this intention; it only revealed itself to me as I began to explore each of our 45-year histories of working with children and adults. In 1998, a student in our Integrative Learning M.Ed. told us that we had created "Montessori for adults." We looked at each other, recognizing it was not by design, but understandable because Montessori insights formed the core of who we were, and working with adults was not that much different than working with children.

A few of these insights grew out of a requirement to prepare a 10-year self-study for accreditation renewal of our M.Ed. programs.





I begin with the unity function; occupying that space is right-action and love. In our work with children and adults, we observe three emergent qualities:

**Cosmophilia** – the overwhelming awe one feels for the Universe, not merely its beauty but the incredible complex processes that manifest the unimaginable.

**Ecophilia** – the tendency to bond with the natural world and to notice/feel the presence of Earth systems that sustain life.

**Biophilia** – the instinctive love for the living world.

Right-action arises from the Buddhist notion of dharma. Along with right-livelihood and right-speech is the ethical contract we have that arises from our truth. Thomas Berry’s notion of great work and Maria Montessori’s idea cosmic task emanate through right-action and love.

The partnership function includes context-setting, ecogenesis, and cosmogenesis. As I alluded to earlier, the starting place for comprehending our place within the holarchies of cosmos and ecos is seeing-feeling our relationship to Gaia. Marsha used ecogenesis to describe a fundamentally new perspective based on a holistic-ecological view rather than on a hierarchical, mechanistic, or patriarchal model.

Brian Swimme and Thomas Berry tell us that during the last 100 years, we have moved from a sense of cosmos to cosmogenesis, the understanding that there is a continuous unfolding of relationship-communion throughout space and time, that everything that exists is a derivative of this process.

I left engineering 45 years ago to pursue a career in education. I remember thinking back then that the immense problems facing humanity could only be remedied through a new form of education – one that provided overarching contexts so that learners would come to know that everything is interconnected in a meticulous web of relationships – and that this knowledge would change the way we behave toward each other and toward the Earth. I was only partially right. Knowledge itself is not enough. There needs to be congruent, seamless processes that allow learners to live in those contexts and develop right-action.

Integrative learning and story hold the space of the matrix function in our natural map for Gaian education. I have already addressed the importance of story for establishing contexts as well as the use of exploratory questioning to assuage conditioning and unexamined assumptions. Some additional aspects of integrative learning include:

***CREATIVE EXPRESSION***

***NON-ADVERSARIAL RELATIONSHIPS***

***ACKNOWLEDGING INTUITION AND HEART WISDOM***

***FORMATION OF A DYNAMIC LEARNING COMMUNITY***

***RESEARCH BASED ON PERSONAL INTEREST***

During my preparation to become a teacher, I experienced a gross inequality between the methods used in teacher education and the approaches we were told to use with the children we taught. As addressed earlier, I was chosen to be one of those who would “train” Montessori teachers and then resigned in a search for the missing congruence. Marsha and I, as well as the TIES faculty, embrace this congruence in working with adult learners.

I have placed dialogue and questioning as the feedback loop that interpenetrates the other functions. Dialogue is a process that begins with a willingness to be tentative about what you know, and its focus is on “what is” rather than on ideas and opinions. It allows issues to unfold with affection and mutual support as well as respect. Hence, dialogue supports a non-adversarial learning environment. Its purpose is to pursue shared meaning.

Exploratory questions are open-ended and replace expository inquiries that require arguments and justification. In exploratory writing, the student takes the reader on a journey, sharing what has been learned through study and experience. Exploratory questions usually begin with “How might...?” or “In what ways might...?” or “What possibilities are there for...? These kinds of

questions also propagate deep reflection and expose assumptions that might assist in the unconditioning process.

Observing and noticing hold the stability function. These are quiet, internal – even spiritual – processes that help center oneself in order to sustain one’s vision. They are imbued with the intelligence of love and allow for perceiving the “what is” without influence of past or future and without judgment or interpretation. Emergent “truth” may lead to right-action.

In Aikido, there is the idea of one-point. This is the emanating place for your statement of intention. It is a place without thought, yet all knowledge-wisdom resides there. It is a place of balance and seeing. Gaia’s one-point is the soil.

This natural map illustrates the relationships in education for Gaian renewal: To Educate Eco-sapiens. The stability point (Gaia’s one-point) for the rising education is observing and noticing. Here is a peek into the future, which is now.

Differentiation, autopoiesis, and communion hold the place of the energy function. These tendencies, born in the birth of cosmic unfolding, continue to precipitate dynamic balance throughout time and space for ongoing manifestation within the holons of creation. I have added to this outside circle separation, initiation, and return as processes that are imbedded in the human psyche for personal as well as species transformation.

The last function – the growth point – in our ecological Gaian metaphor for education is held by normalizing and transforming. For years I had objections to the Montessori use of the word normalization. I thought it old fashioned and not descriptive. Within a very short recent time period, three experiences changed my perspective.

#### Normalization through education

First, I read copies of letters gifted to me by Binda Goldsbrough. Mario and Maria Montessori sent these letters to her just before they fled to India because of the impending Nazi invasion of Holland. The Montessoris tell her that in case they meet harm’s way, they wanted Binda and her colleagues – the spiritual heirs of Montessori’s ideas – to make sure no one forgets the period of normalization because that will lead the child to become a conscious master of all its faculties.

#### Normalizing the body

Then I had an experience with a massage therapist who practiced tui-na – in my neck. When I could talk again, I asked him what he was doing. He told me he was normalizing the tissue. I inquired as to what he meant by that term, and he explained that it means returning the tissue to its normal state.

#### Normalizing psychological health

I came across it one more time in dialogue with a colleague. She used the term normalizing to refer to helping clients restore their psychological and emotional health.

If normalizing means creating an atmosphere that enables one to return to a normal state, does that infer that it might lead to an unconditioned state of unfolding consciousness? What might that look like in education? The term was used by Maria Montessori to describe a state of focused attention wherein certain human attributes emerge that provide heightened awareness of self and self in relationship with other. Might normalizing be an ongoing process, one that occurs over a lifetime, not just in childhood?

To respond to that question, I explored excerpts from our graduate student's papers and other reflections in seminars. In their writing, I observed the emergence of passion, social awareness, inner freedom, internal coherence, altruistic behavior, and the corollary qualities of empathy and humility. My conclusion is that the normalizing process applies to all ages and is key to transforming self and self-in-relationship to Gaia.

In addition to normalizing qualities, we see transformative process. This is the creative power in an educational experience that empowers individuals to find deeper meaning in their lives in order to contribute to the greater good.

Taking this natural map of Gaian education as a whole, I come away with the understanding that the Institute for Educational Studies (TIES) is a Montessori graduate school. It follows the underlying vision for a university as described by Maria Montessori during the late 1930s. It is Montessori for adults in both content and process and is applicable, not just to Montessori teachers, but also across most disciplines.

In conclusion...

I believe people have a deep calling beyond individual and family. It is where their gifts and the world's needs intersect.

As I have said throughout this presentation this is what Thomas Berry called our Great Work and Maria Montessori, our Cosmic Task. From a spiritual perspective, it is our inner journey.

Whatever the name, it is the invisible evolutionary thread-connection or cord of causation that carries us forward from ancestral generations to the here and now and beyond into our collective futures.

*To know your soul's work,  
you have to go deep within.*

*Hope and courage must accompany you on your journey.*

*To embrace your great work,  
you have to always create.*

*This creation of yours is something which  
you ultimately become.*

*Finally you come to realize that  
your creation is nothing other than  
your self-revelation.*

*(Spiritual teacher Sri Chinmoy)*

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To connect with Philip Snow Gang, please visit: [philipsnowgang.net](http://philipsnowgang.net) or [ties-edu.org](http://ties-edu.org).

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