Sustainability and Well-Being through Mutual Causality: One Approach to Teaching SDGs Development

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Why “Sustainability”?

A few years back, Musashino University made the decision to broadly teach sustainability to all students starting from the freshman level. Since I had previously done no formal research on the topic, in order to prepare properly, I spent the two months before the semester reading extensively about the meaning and practice of sustainability. This study I conducted changed my mind about the topic, in the sense that I came to think that the SDGs was perhaps the most important course I have ever taught in the university. In teaching about the SDGs, we are providing our students with information vital to their future survival, not just at the level of employment, but at the level of providing for and protecting themselves and their families in the difficult world that is to come.

There are endless ways to teach sustainability. To see a small sample of the variety of approaches, one only needs to look at the range of articles contained in the textbook on SDGs published recently by our university, *SDGs no kiso*. Among the seventeen SDGs, I considered category thirteen (climate action) to be the most important. This is not to diminish the relevance of the rest of the SDG categories, but if we human beings keep on going as we are--and continue to destabilize our environment--none of the other categories are going to really matter.

In carrying out my research in order to teach the SDGs, I focused primarily on four texts.

(1) Swilling: *The Age of Sustainability: Just Transitions in a Complex World*

The first is Mark Swilling’s 2020 book, *The Age of Sustainability.* Swilling is a professor at Stellenbosch University in South Africa. He is the program coordinator of the Sustainable Development Program at the School of Public Leadership, among a couple of dozen of other posts. His research has focused on “social transitions” in the broader field of sustainability studies and governance, maintaining a particular focus on urban sustainability. In addition to more than sixty academic articles and book chapters, he has published several books on sustainable transitions. (see https://www.markswilling.co.za/)

This book is a *tour de force* on the latest developments and challenges of physical, biological, social, economic, and cultural forces in the effort to move society in a sustainable

direction. As a South African, Swilling was able to engage with the outstanding efforts of African indigenous cultures (and from which he learned the concepts of *ukama* and *ubuntu*). Swilling is also a very deeply engaged activist, both in terms of protest and in trying to build new sustainable communities that can serve as models for the future.

The key phrase here is "just transitions." If the world's economic elites get together and create their own sustainable communities and make them exclusive so that *they can* survive, and leave the rest of us to struggle, that is not to be called "just" sustainability, but an exclusive and prejudiced sustainability. He provides several examples of such elitist initiatives. But he also provides several examples of newly developing "just" sustainable communities that have succeeded.

(2) Capra and Luisi: *The Systems View of Life: A Unifying Vision*

The Systems View of Life (almost 600 pages) presents a comprehensive overview of "systems thinking" and its relevance to various aspects of life, including science, ecology, economics, and philosophy. The book advocates for a shift in our understanding of the world, moving away from reductionist, mechanistic views, to a more holistic, systemic perspective. The book emphasizes the importance of systems thinking, which involves looking at the entities in the world as components of interconnected systems rather than as isolated units. It encourages us to understand the relationships and interactions between elements in a system. Capra and Luisi argue that everything in the natural world is interconnected. They explore the concept of interconnectedness in various domains, from biology to economics, illustrating how changes in one part of a system can have far-reaching consequences.

The book presents a paradigm shift in our thinking, advocating for a more holistic and interconnected perspective that is relevant to various types of disciplines. It encourages readers to see the world as a web of relationships and to consider the long-term sustainability of our actions and decisions.

(3) Macy: *Mutual Causality in Buddhism and General Systems Theory: The Dharma of Natural Systems*

This connection is suggested by Capra and Luisi (290), and is a central theme in Joanna Macy's 1991 book *Mutual Causality in Buddhism and General Systems Theory*. This book explores the connection between Buddhist philosophy, particularly the concept of *pratītya-samutpāda*, and the principles of general systems theory, the latter being a branch of science that examines the relationships and dynamics of complexities. The book explores how these two seemingly different worldviews can provide insights for understanding and addressing contemporary ecological and social issues. She writes:

> These two enterprises (mutual causality and systems theory) differ in method as well as purpose. Both claim to be empirical, basing their constructs on experiential evidence and relying on neither revelation nor a priori reasoning, but the kinds of data used are not the same. While general systems theory employs observations afforded by tangible scientific practices, Buddhist teachings draw from subjective experience and the intuitive insights which meditative practice can yield. Although the Buddha urged his followers to win these insights for themselves, to test them in the laboratories of their own consciousnesses, they represent data or observations that are not publicly testable because they can be known only introspectively. Respect for the intrinsic contrasts between these two bodies of thought is essential if we are to bring them together and examine their respective views of mutual causality. (Macy, 18-19)

Before we go any further, let us review some of the most important concepts that we find in these three books.

Ecology

The most important thing for us to understand about the environment is its deep, fundamental interconnectedness. This deep interconnectedness has been known for a long time, but it is not something that most people are sufficiently aware of most of the time. Ecology is bifurcated broadly into the pair of deep and shallow. *Shallow ecology* is a view of interconnectedness that is anthropocentric. It sees humans as above or outside of nature. Humans are the source of all value, while nature is recognized as having only instrumental value, or "use value."

Deep ecology does not separate humans (or anything else) from the natural environment. It sees the world not as a collection of isolated objects but as a network of phenomena that are fundamentally interconnected and interdependent.

> Deep ecology recognizes the intrinsic value of all living beings and views humans as just one particular strand in the web of life. Deep ecological awareness is spiritual awareness. When the human spirit is understood as the mode of consciousness in which the individual feels a sense of connectedness to the cosmos as a whole, it becomes clear that ecological awareness is spiritual. Hence, the emerging new vision of reality, based on deep ecological awareness, is the same as in spiritual traditions. (Capra and Luisi 12-13)

From this concept of ecology, the related concept of *ecosystems* was born, with an ecosystem being a geographic area where plants, animals, and other organisms, as well as

weather and landscapes, work together to form a bubble of life.

Ukama

From Mark Swilling, we learn the African, Shona-language equivalent of the "ecosystem," *ukama*. "*Ukama*" means relatedness—relatedness to the entire cosmos, the relatedness of everything. *Ukama* is not merely about relatedness between people, but also about relatedness between people and nature (including inanimate objects) and between people and ancestors. *Ukama* is also interpreted as "Relational Human" (deeper than *ubuntu*). "The quality of relationships we build and foster matters much. Without human interaction each of us will slowly lose our meaning to live and finally perish like a flower which dies before it blooms." (Swilling, 21)

Holism

Related to these concepts is the idea of holism. A system as a whole is more than the arithmetic sum of its parts, and the whole cannot be reduced to its parts or elements. In other words, it is a way of thinking that points out the fact that understanding the parts of a system piecemeal does not enable one to understand the behavior of the system as a whole. It is opposed to *reductionism*, which believes that one can understand the entire system by understanding only its parts or elements. Holism is an ecological view, emphasizing the organization or organism as a whole, and the relationship among its members. We should see the earth as a living, breathing being, which can be hurt or damaged, just like us.

General Systems Theory

All of these concepts are closely tied to the relatively modern concept of "systems theory" (general systems theory, formulated by Austrian biologist Ludwig von Bertalanffy [1901–1972]). This means that entities and phenomena must be viewed holistically as a series of elements that affect one another (i.e., as a system). The goal of systems theory is to identify and understand the principles applicable to all systems. The impact of each element in a system depends on the role played by other elements in the system, and order arises from interaction among these elements. (see Capra and Luisi, 85)

Emergence

Emergent thinking is an important related concept that arises from systems thinking. Emergence is the appearance of properties that are not simply the sum of the properties of the parts, but emerge as a whole (like the Buddhist *ātman*?). The complex organization of multiple local interactions constitutes a system that cannot be predicted from the behavior of individual elements. These emergent properties arise from specific patterns of organization—that is, from configurations of ordered relationships among the parts. This is the central insight of the systems view of life. In "systems thinking," the whole is more than the sum of its parts.

Complexity

Capra and Luisi also discuss the concept of "complexity in systems." They explain how complex systems often exhibit emergent properties, where the whole is more than the sum of its parts. This idea is crucial for understanding the behavior of systems. Complexity is the study of the collective behavior of a large number of basic interacting components in a system: The complex phenomena that emerge from the dynamic behavior of these interacting units are referred to as self-organizing. The fact that these phenomena emerge entirely from local interactions, without any reference to the global structure, indicates that complex systems have a form of coordination that is distributed rather than being localized in any center of operations.

Also, in a technical sense, self-organization occurs in systems that are "dissipative" and "nonlinear": that is to say, unpredictable ("non-trivial") structures and functions emerge in the productive zone that is at the so-called edge of chaos. This is "the constantly shifting battle zone between stagnation and anarchy, the one place where a complex system can be spontaneous, adaptive, alive" (Waldrop, 1993, p. 12). In many ways, thinking on complexity and emergence reverses the polarity of first-order cybernetics as an ontological exploration: rather than looking at the ways in which life has machine-like characteristics, complexity explores the ways in which a variety of complex structures − natural, societal, geographical – behave like organisms.

Mechanistic View

A key target for Capra and Luisi is the "mechanistic view." In their view, Descartes' uncompromising image of living organisms as mechanical systems established a clear conceptual framework for future research in biology, but he himself did not spend much time on physiological observations, leaving it to his followers to work out the details of the mechanistic view of life.

In Descartes' mechanistic conception of the world, all of nature works according to mechanical laws, and everything in the material world can be explained in terms of the arrangement and movements of its parts. This implies that one should be able to understand all aspects of complex structures – plants, animals, or the human body – by reducing them to their smallest constituent parts. This philosophical position is known as Cartesian *reductionism*.

The fallacy of the reductionist view lies in the fact that, while there is nothing wrong in saying that the structures of all living organisms are composed of smaller parts, and ultimately of molecules, this does not imply that their properties can be explained in terms

of molecules alone. (Capra 35)

General Systems Theory (GST) and Complexity Theory are related concepts that both deal with the study of systems, but they approach this subject from different angles. They share some commonalities, but they also have distinct characteristics.

Merging These Ideas

Macy writes:

> A major shift is occurring in our time from notions of linear, unidirectional causality to perceptions of dynamic interdependence where phenomena affect each other in a reciprocal or mutual fashion. A mutual causal paradigm emerges, and the conceptual tools for understanding it can be found in general systems theory, an interdisciplinary approach arising from Science. The systems view of causal process also reveals striking convergences with the Buddha's teaching of causality, called *paticca samuppāda,* or dependent coarising. These convergences are illuminating, although they arise between bodies of thought that are distant from each other in time, culture, data, and methods. (Macy 1)

Macy's counterpart to the mechanistic view introduced above, is what she calls the "Linear Unidirectional Causal Paradigm." As the words suggest, this refers to one-way flow of influence from the cause A to the effect B.

A —» B

> The direction of causal efficacy is from the producer to the produced, from the action of the agent or actor to its results in the acted-upon. This causal model implies that there is no new behavior in the effect ***B*** which cannot be traced back to its cause ***A***. Another way of putting this is that there is no less information in ***A*** than in ***B***. A corollary of this assumption, operative in scientific research, is that distinctive features in the effect ***B*** must correspond to similar features in the cause ***A***. Hence it is assumed that similar causes yield similar effects, and that different effects derive from different causes. (Macy 9)

She argues that this way of thinking that is further developed in Aristotle, Descartes, Upanishads, and Sāṃkhya.

The Reciprocal Hermeneutic of Buddhism and General Systems Theory

Much can be discovered about mutual causality and its implications when we use perspectives of both general systems theory and early Buddhist teachings. In no other bodies of

thought is such a view of causal process set forth so coherently and precisely. We can employ these two perspectives to illuminate the notion of mutual causality, each from a different angle, using different data. While their views of the nature of reality may often appear to converge and complement each other, they remain two different kinds of human enterprise.

Arising from the sciences as a cross-disciplinary tool, general systems theory represents a set of conceptualizations employed to increase understanding of natural events for purposes of explanation, prediction, and control. While these conceptualizations are increasingly appropriate to considerations of value and the human quest for meaning, the aim is hardly soteriological. The aim of the Buddha Dharma is to present a path of liberation. The world view it offers and the ethic it teaches provide a structure of transformation, whereby it is held that suffering can be transcended and consciousness opened to that which is of irreducible reality and value.

Mutual Causality was published in 1991. During this time, while engaging in Buddhist research, Macy also becomes deeply involved in environmental activism. Her efforts in this area result in the publication of the book together with a Chris Johnstone, *Active Hope.*

(4) Macy and Johnstone: *Active Hope*

In the book *Active Hope,* no mention is made of Buddhism, or Buddhist metaphysical principles, or General Systems Theory. The premise of the book is that all cultures live in stories--fictions that guide our faith and our actions. The authors tell three cultural stories that are competing narratives in our lives today: (1) "Business as Usual," (2) "The Great Unraveling," and (3) "The Great Turning."

The first, "Business as Usual," promises endless economic and technological success that will make our lives better. The argument doesn't question whether growth is actually good, but rather how to grow the economy so that everybody (or some people) can get ahead, meaning, consume more.

The second narrative, "The Great Unraveling," is the opposite: the critique of that story describes economic decline, resource depletion, climate change, economic injustice and mass extinction. Most of us participate in both of these stories all the time, as the first has structured the very environment we live in everyday, while the second is evident in the literal unraveling of earth and social/economic systems unfolding before our eyes.

The third story, "The Great Turning," moves us beyond the first two narratives, and it is here where we may find strength and sustenance in an alternative vision of life on earth. Macy and Johnstone identify three dimensions, and each of us, no doubt, will see our work in one of these. In the dimension of Holding Actions, we struggle to counter the unraveling of our social and ecological fabric seen locally in our anti-fracking, fair wages,

and clean-up campaigns. The second dimension is called “Life-Sustaining Systems and Practices” and speaks to the ways we are consciously reinventing our culture — through local food systems, cooperatives, financial reforms, simple living, feed-in tariff energy policies and so on. We can’t just be against everything--we have to offer alternatives of what people/societies can do instead.

They call the third dimension “Shifts in Consciousness.” How do we move beyond the individualistic, isolated view of humans, to a connected, compassionate community of all beings? This is both an ancient story, and a new one as the vectors of spirituality and science merge to give an alternative view of the universe and our place in it. Edmund Carpenter once said, “We don’t know who discovered water but we can be sure it wasn’t a fish.” Such is the power of stories and the reinforcing structures and spatial practices built into the environment. Yet, we, as an intelligent species, can see outside these stories and actually choose. “When we find a good story and fully give ourselves to it, that story can act through us, breathing new life into everything we do.” (Macy and Johnstone 33)

Now, in terms of teaching sustainability to undergraduates at Musashino University, the first three books introduced in this paper are far too difficult for our students to read effectively. Swilling’s book is a first rate, dense scholarly work, that requires a scholar outside of their field to have a dictionary open all the time. Capra and Luisi’s work is written at an easier level, but as a 600-page analysis of the history of scientific thought, it is far too difficult for our undergrads. Likewise for Macy’s book on mutual causality, which is written for scholars who have a solid grasp on Buddhist studies technical terminology. But if the the instructor reads these books, they may draw on them create a rich lecture. The fourth book is readily accessible to the reading level of our students and I have used it with success three times now.

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