COMPLEXITY, EMERGENCE AND CO-EVOLUTION: NOTES FROM THE FIELD

ABSTRACT

A retrospective review on how a few great thinkers of the 20th Century have shaped my life and my work and who may be our best hope for surviving the 21st century.

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Complexity, Emergence, and Co-Evolution: Notes from the Field

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There is Nothing More Powerful Than an Idea Whose Time Has Come
—Victor Hugo

I love theory. I love playing with big ideas in everyday ways, trying them on like young children playing dress-up. When I taught preschoolers who were multiply-handicapped and congenitally deaf, I relied on the seminal thinking of two cognitive psychologists, Jean Piaget and Lev Vygotsky. I needed something to ground me as I searched for ways to create a learning and nurturing environment for my little charges. I was emboldened to use puppets and life-sized dolls to get to the bottom of the latest tantrum, thus avoiding power issues that may exist between a first-year teacher and a headstrong six-year-old student who had been abused by the adults in her life. Later, I fell in love with Reuven Feuerstein and his work in cognitive theory and mediated learning. He insisted that a child's ability to understand perspective and point-of-view, and their ability to recognize patterns within patterns, was as important as mastery of linking verbs. He explained how adults needed to "mediate" the educational experience to create a culture of learning within the classroom. I presented at a conference on mediated learning in 1988 and met Feuerstein. I have a picture of the two of us that has been on my desk for decades.

Then, in 1989, I read *Uncommon Wisdom[1]* by Fritjof Capra, and my world changed. I knew I wanted to do something with the big ideas he discussed. The school where I had been working was engaged in a civil war over teaching methodology as it related to the use of American Sign Language (ASL) and signed English. Teachers were pitted against one another based on teaching methods; the environment became toxic and negatively impacted both staff and students.

I was miserable. I sensed there was something deeper going on than a mere disagreement on methodology, but I had neither the experience nor the language to describe what was happening. Experts in organizational culture and change process were emerging in the business world, but a state school for deaf children was not a market niche for that kind of expertise. Then I read Capra. He illuminated the underlying dynamics of the school's culture. The conversation about using ASL or Signed English as the primary instructional language was not simply a question of methodology, it exposed cultural attitudes about power and privilege, domination and oppression. His book pointed to new paradigms emerging in the world across a myriad of disciplines, including education. He suggested that there were ways to find answers to these questions if one only had the tools. As much as I loved teaching, I decided to leave the classroom.

It took about five years of gradual and risky career shifts, but by the mid-nineties, I was working with organizational change and group facilitation. I was continually being introduced to the seminal thinkers involved with organizational culture and systems thinking. I will discuss a couple of my favorites in this essay.

The stakes are higher now than they were when I was a young teacher. The world has shifted. I am alarmed at where we find ourselves as a human family facing an existential crisis on a planetary scale. This crisis has been a long time coming and was foretold by many of the great

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[1] Capra, Fritjof, *Uncommon Wisdom: Conversations with Remarkable People*. Bantam Books. 1988

thinkers of the last century. This essay is a look back at what I have read on the subject to remember some of the ideas that captured my attention decades ago in order to see the relevance they hold for this time. It is also a field journal that explores a few compelling ideas and theories of the 21st century. I invite you to take this journey with me.

We Had Hoped…

In the middle of the road of my life I awoke in a dark wood where the true way was wholly lost.
—Dante, Commedia

We live in dark times. This must be said without drama or hyperbole. We must be clear-eyed about where we find ourselves, individually and collectively. Our families, local communities, and institutions are in crisis. Evidence of this includes recent climate events including fires, floods, and draughts; migration and immigration at a scale we have never experienced; routine mass shootings; the proliferation of corrupt governments; a global assault on liberal democracies; and the insurgence of white supremacy and neo-nazism. Social media has redefined the way we communicate and get our information about current events.The prevalence of misinformation, the assault on truth, conflation of opinion with facts, false equivalencies, and gaslighting disorient and distort like a carnival of mirrors. In just the few weeks it has taken to write this essay, the world has been thrown into a global pandemic of historic proportion. This swirling of uncertainty and chaos is creating an existential crisis that is global in its scope. These phenomena insist that we sit up and pay attention. We cannot become numb to what is happening around us, nor can we afford to be paralyzed or escape by distraction and denial.

I came of age in the fifties and sixties. I grew up in a poor working class, barely blue-collar family. We lived in a rural Midwest farming community where most of my social life centered around the evangelical church youth group. College life was a foreign country to me, but those years expanded my view of the world and gave me passage to new landscapes and new ideas.

I came of age in the fifties and sixties. I grew up in a poor working class, barely blue-collar family. We lived in a rural Midwest farming community where most of my social life centered around the evangelical church youth group. College life was a foreign country to me, but those years expanded my view of the world and gave me passage to new landscapes and new ideas. As the end of the twentieth century approached, my progressive friends and I had hoped the new millennia would bring sweeping changes of enlightenment and a greater sense of harmony and interdependence. The world had survived the evil of Hitler's Germany and the horrors of WWII. By mid-century, Albert Einstein introduced the concept of relativity, Carl Jung gave us the language of archetypes and the collective unconscious. Margaret Mead was studying indigenous cultures and bringing new understandings of family and community. William and Gregory Bateson transformed classical theories of biology and genetics and physicists like Niels Bohr and David Bohm pushed against the mechanistic world views that had prevailed since the

Enlightenment. Theologians such as Merton and Teilhard de Chardin integrated science and religion, bringing fresh theological perspectives to Christianity. Grassroots movements resisting oppression and social inequality were happening around the globe. The Cold War ended, and the Berlin Wall crumbled. The threat of the Soviet Union vanished. Despite signs of regression in our politics and our policies, the turn of century seemed bright with promise and hope.

The promising ideas of the past century are as relevant today as they were seventy-five years ago. They are revolutionary in their scope and inspired a new generation of thought leaders who continue to build on the original ideas and offer insight into the issues facing us in the twenty-first century. Some great thinkers of the twentieth century anticipated the "great turning"[2] of the millennia. As we moved closer to the end of the last century, there was an anticipation in the air that an era was passing, and that we were entering into a time of upheaval and massive change. I remember having conversations with friends about how we hoped the next century would be a time of collective transformation. I wrote an essay at the time about the death of Princess Diana, drawing on the writings of Carl Jung and Joseph Campbell, writing about how Princess Di rebelled against the norms that held her captive to outdated fairy tales of princes and princesses. I hung out with what my husband teasingly described as "fringe dwellers," and we talked about our hopes for an emerging new consciousness that would change the landscape of the next millennium. We were excited to be living at the turn of a century.

Looking back, I can see that we were given hints about how to move forward, nudges from the disciplines of ecology, biology, quantum theory, anthropology, and natural systems. From where I stand now, it seems that our work is to embody the ideas whose time has come. We must learn to see the patterns that unify and connect ideas across disciplines; we must pay attention to the natural order of the universe and get out of our own way. We cannot depend on simple solutions to complex issues. If the pandemic is teaching us anything, it is that the complexity of this issue defies platitudes and simplistic solutions. We can no longer be blind to the interdependence and interrelatedness that exists across the issues that we are confronting, and we must engage with one another across our diverse cultures, ideologies, disciplines, theologies, and world-views in search of common solutions to our common problems. This moment is not hopeless, but there is no time to waste.

Silos and Mono-Cropping

There is a dark invisible workmanship—that reconciles discordant elements—and makes them move in one society.
—William Wordsworth

It is interesting to note that the theses of the most brilliant minds of the mid-twentieth century were often isolated to their respective fields of study. Universities had neatly designed departments to keep disciplines distinct and separate. Discoveries in natural science, the

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[2] Macy, Joanna. is a writer, teacher, and activist who coined the phrase "the Great Turning" as the third major revolution of human existence after the agricultural and industrial revolutions

humanities, and social sciences resonated across disciplines and were rich with cross-pollinating possibilities, and by the late-twentieth century a few scholars began to 'connect the dots' and see the integral nature that existed across the disparate disciplines and fields of study.

In 1992, Margaret Wheatley, a business and management consultant, wrote *Leadership and the New Science: Learning about Organization from an Orderly Universe.*[3] In the introduction of her book she referenced Fritjof Capra's book, *The Turning Point: Science, Society, and the Rising Culture*[4]. She explained that Capra introduced her to the field of quantum physics and inspired her to connect the wisdom of the quantum world to the social sciences and organizational development. She credits Capra's work for helping her to find a "new way of seeing" and introduced her to a world "where order and change, autonomy and control were not the great opposites that we had thought them to be."[5] I didn't know of anyone else who had read his work, much less apply it in the ways she had. I felt a kinship with her, even though I only knew her through her writing and acclaim as author and consultant.

Capra was a student of Gregory Bateson, the renowned biologist, anthropologist and husband of cultural anthropologist, Margaret Mead. Capra was greatly influenced by Bateson's work, and sought his advice as he worked on *Turning Point.* Gregory Bateson broke the rules of the academy and insisted that the "monocropping" of disciplines and fields of studies precluded a holistic understanding of social systems[6]. Capra, inspired and informed by Bateson, translated arcane and abstract scholarship of quantum physics, evolution, biology and anthropology into understandable concepts. He used everyday language and helped a lay public imagine a holistic and ecological perspective to addressing the intractable issues facing our world. Meg Wheatley built on his work and applied systems theory and complexity theory into the worlds of business and business consulting.

Systems theory became the new paradigm in the latter half of the twentieth century. New disciplines and fields of study emerged in the areas of organizational culture, organizational development and servant leadership. Business consultants, process facilitators, and train-the-trainer workshops were in high demand. Ideas such as empowerment, trust, team building, and core values replaced accountability, control, and centralized management. These new tools and processes were promising responses to the turbulence and uncertainty our institutions were facing. Standing at the dawn of the new millennia, most of us could never have imagined where we would find ourselves today.

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[3] Wheatley, Margaret. *Leadership and the New Science*. Berrett-Koehler Publishers. San Francisco, 1992

[4] Capra, Fritjof. *The Turning Point: Science, Society And the Rising Culture*. Simon and Shuster, 1982

[5] Ibid, page 2

[6] Bateson, Nora. *Small Arcs of Larger Circles: Framing Through Other Patterns*. Triarchy Press, 2016. Nora explores the teachings of her grandfather and father while expanding on their scholarship with her own. She employed the word mono-cropping as a way to talk about the silos of disciplines, fields of study, etc.

Two Loop Theory: A New Map for A New Millennium

If what a tree or branch does is lost on you
then you are surely lost. Stand still,
the forest knows where you are. Let it find you.
—David Wagoner

In August of 2011, I attended a week-long course offered by the Cape Cod Institute. Meg Wheatley was presenting a course on the twentieth anniversary of the publication of her book, *Leadership and the New Science.* By this time, Meg Wheatley was a world-renowned expert, author, and consultant. I was eager to hear how she was continuing to develop the ideas of organizational change from the lens of quantum physics and the natural world.

The workshop took place in Nauset Regional High School in North Eastham, Massachusetts. The school is just a few yards inland from the beach, accessible only by a narrow, tree-lined, hydrangea-adorned road paved with sand and pine needles. On the first morning— and every morning afterward—participants were treated to fresh fruit, scones, bagels, and yogurt in the school lunchroom before our sessions began in the classroom; coffee, water, and juices plentiful. There was an open-air feel to the lunchroom because two of the four walls were floor to ceiling glass, allowing the beauty of Cape Cod August mornings to wash across the room. The sessions ended at midday, so afternoons were free for whale watching in Province Town, shopping in Wellfleet, or enjoying the sundry other offerings of the Cape.

The participants of the workshop were from around the country, with a sprinkling of folks from the United Kingdom and Canada. There were about thirty of us, various ages, with a preponderance of cargo shorts, Teva sandals, and slogan quipped tee-shirts. Even though we were strangers, there was a sense of being connected to our *people* as we meandered into the room with our coffee, tote bags, and backpacks. We settled into the chairs; desks arranged in four semi-circle tiers because we were in the music room. Meg was already in the front with her curly red hair cropped close to her face. She wore a long flowing skirt, brightly colored cotton blouse, and dangling earrings.

Once we were settled, we were greeted by a staff person of the Institute and graciously given instructions about the building, enticing offerings for how to spend our afternoons, and a special invitation for an evening concert by Greg Greenway, a local vocal artist and friend of Meg's. She then introduced Meg, and all eyes turned to her.

"Good morning friends," Meg began. "I know you are here to hear me talk about the new edition of my book, *Leadership and the New Science,* but I have decided that I am not going to write that book, because I don't believe a lot about what I said in it."

She had our attention.

She went on to explain that she believed that organizational development and change management consultants had enthusiastically gobbled up the compelling insights and revelations coming to them from the quantum world and simplistically attempted to translate those concepts for the business world. She worried that there was a naivete in the early-nineties in the field of organizational development, that consultants and experts were overconfident in how to apply concepts of a self-organizing universe to the way we managed our organization. Self-organizing teams, horizonal governance structures, self-managed and self-regulated departments became the *flavor of the month* for workshops and change management processes. She believed that the organizational experts acted as though once an organization had mastered self-organizing teams, flattened the organizational pyramid, created communication processes that were more organic and free-flowing, created shared values that would serve as *strange attractors*[7] , then the organization would thrive when facing turbulence and uncertainty. *She counted herself as one of those experts, and most of us could see our own complicity in what she was describing*. The experts explained that it was important to see our organizations as living systems and move away from a mechanistic world view. This new way of seeing the world would save us from ourselves.

Wheatley suggested that perhaps, in our enthusiasm, we couldn't see that we were still using old mental maps of a fragmented universe as we attempted to be holistic in our practices. She believed that despite our newfound understanding, most of us, as consultants, facilitators and leaders, continued to break into parts the integral wholeness of the quantum world. This tendency to reduce everything into a usable product was not done with mal-intent or with a self-serving motivation. It most likely came out of an inherited world view of fragmentation and isolation. She shared her own sadness and regret that the first decade of the new millennium didn't work out as she or others had imagined, despite our best intentions and clever processes. She felt it was important to name this, even to a publisher who had given her an advance on a book she was now refusing to write. She needed to write a different book. *That* is what she wanted to talk to us about. Our curiosity was piqued. In those twenty years, 9/11 had happened, our country was embroiled in a protracted war in the middle east, and our first Black president had been elected, which initiated a backlash that swept the Tea Party into power two years later. The nation was recovering financially from a near-collapse, and Congress had just passed the Affordable Care Act, which was being hijacked by a powerful minority caucus before the ink was dry. Maybe it was time for a different book.

On the first day of the course, she drew a simple arc, and began talking about emerged systems and how human and social systems are very much alive and behave like living things in the natural world. It wasn't that she had abandoned everything that she had learned from quantum physics and chaos theory, but she had a new map for organizing her thinking. We spent three days exploring this *arc* as a symbol for the life cycle of social systems. We discussed how systems experience a time of birth, growth and maturity, and then a natural decline. The room

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[7] A concept from chaos theory that explains how a system, seemingly in chaos, maintains order within disorder and is contained within a boundary over time. See Jantz, Erich. The Self Organizing Universe. Oxford, Pergamon Press, 1980.

echoed with "oohs" and "ahhhs" as the participants identified with her examples of the decline and decay in the systems in which we worked and lived our lives. Our point of reference for the first couple of days was just this:

Emerged Systems

On the third day, she explained that in times of decay and decline, there will be a few *way finders* who step out of the organization and begin to wonder about another way of thinking, seeing and doing things. She said that often these *way finders* were not well-received in the organization, often finding themselves standing on the periphery of their workplaces or communities. She explained that it was very important for these people to find one another and find ways to connect and share their ideas. It was also important for leadership to recognize these individuals as change agents within the system. It is often necessary for leaders to protect the way finders from others and, at times, from themselves. In their truth telling, they could be their own worst enemies. We discussed the need for *hospice* workers to ease the pain and loss that was occurring in the declining systems. She stated that once a system has *emerged*, there is no tinkering with the individual parts to make it more whole or renewed. Her flipchart image then became this:

Emerged Systems

Way finders

Meg referenced the writing of Thomas Merton and suggested that he was an example of a 'way finder'. Merton was a Trappist monk, mystic, peace activist, and prolific author. He was deeply troubled by the human suffering caused by war and violence. He wrote extensively about spirituality and living a contemplative life in the modern world. He suggests there have always been prophets during times of societal change and transformation. He poetically described those who stand outside the dominant norms in the following lines:

I stand among you as one who
offers a small message of hope. . .
there are always people who dare
to seek on the margin of society,
who are not dependent on social acceptance,
not dependent on social routine,
and prefer a kind of free-floating
existence under a state of risk.

She referenced *Walk Out Walk On: A Learning Journey Into Communities Daring to Live the Future Now,* that she had co-authored with Deborah Frieze.[8] It was in this collaborative work with her colleague that her thinking evolved into what she was now sharing with us. She gave examples of innovative ideas relative to community renewal and innovative approaches to addressing complex and systemic issues such as that of urban blight and urban decay. She talked about NGOs coming together to create micro-loans for women in developing countries striving to build a life out of the poverty and helplessness that surrounded them. She named real people from across the globe who were examples of way finders, who were participating in creating new systems out of the emerged, decaying systems of the past. On the very last day, she completed the graphic with this addition:

Emerged Systems
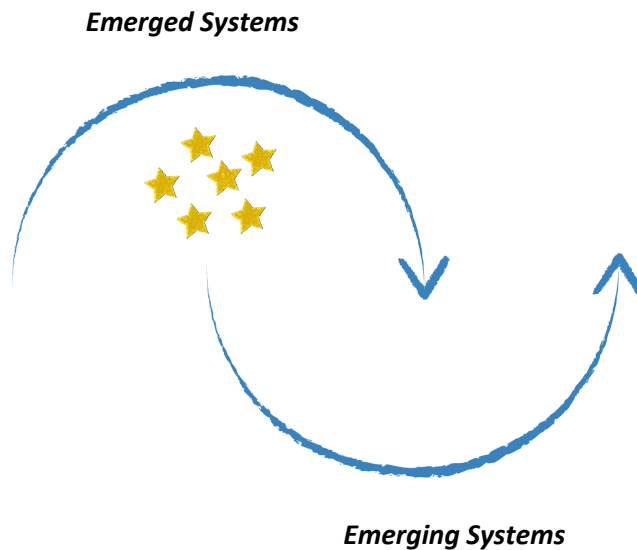
Emerging Systems

In this emerging arc, the work becomes one of "midwifing" the new way. Some of the way finders become trailblazers and prophets of the new. These emerging systems were not fully formed or robust enough to replace the declining systems, so we were entering into a time of living in both worlds. To live in this gap, we must enter a time of experimentation, uncertainty, and unpredictability. For now, the dominant systems are those which are in a state of decline,

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[8] Wheatley, Margaret, Frieze, Deborah. *Walk Out Walk On: A Learning Journey Into Communities Daring to Live the Future Now.* Berrett-Kohler, 2011

for various reasons. Alternatives to the dominant systems will emerge when enough synergy is created from the connections formed by those seeking another way.

As the way finders begin to form fluid networks and dynamic relationships, they do so in response to local needs, but with a global mindset and perspective. Networks and communities of practice may evolve out of the local initiatives if people connect and create ways to communicate with one another. Echoing Merton, she insisted that we shouldn't worry about whether our work would make a difference, now or over time. Our focus must not be a prescribed outcome; our role is to be faithful to what is needed in the moment, wherever we find ourselves.

Two Theories: One Big Idea

Learn how to see. Realize that everything connects to everything else.
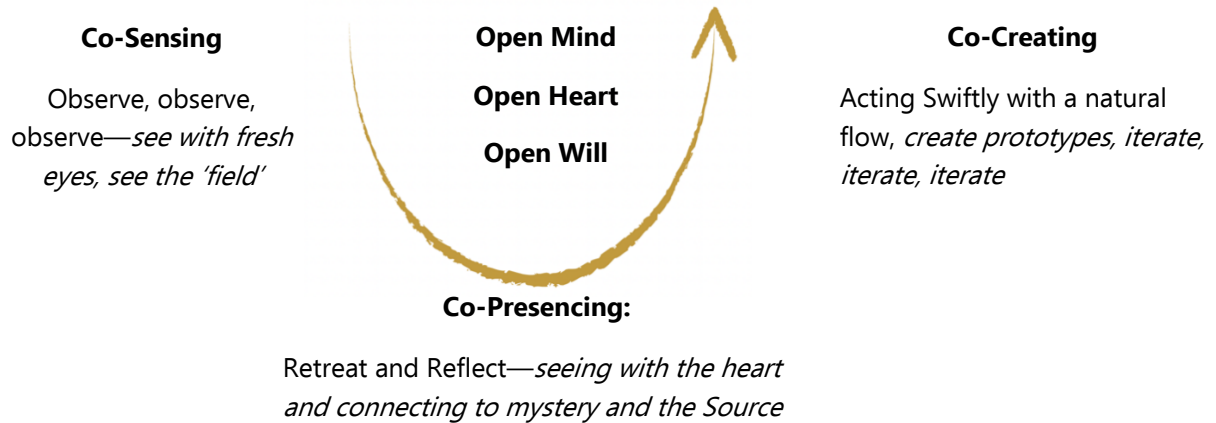*—Leonardo da Vinci*

Between the time Wheatley wrote *Leadership and the New Science* and developed her two-loop model on emerged and emerging systems, a group of renowned authors, researchers and practitioners were collaborating at MIT. They, too, were exploring concepts of large systems change, chaos theory, and the functions of systems in these rapidly changing and complex times. One result of this collaboration was the publication of *Theory U: Leading from a Future as it Emerges* by Otto Scharmer.[9] The book was a culmination of years of research in which Scharmer interviewed over 150 eminent thinkers from diverse perspectives to synthesize scholarship across multiple disciplines. He, too, was influenced by Fritjof Capra, as well as leaders in the field of evolutionary consciousness, cognitive sciences, dialogue and spirituality.

Looking in the rearview mirror, we can see that Wheatley's evolution of thinking from what she wrote in *Leadership and the New Science* and subsequent two-loop model was occurring at about the same time period that the MIT crowd were thinking about possible integrative theories to address the complexity we were experiencing in our communities and workplaces. Both were influenced by a diverse field of scholars and scholarship and were responding to the "brave new world"[10] of the twenty-first century.

Scharmer used the image of a "U" to hold the multiple dimensions of his theory. It is paradoxically simple and profoundly complex. The model is multi-dimensional in its depth and scope, but the basic idea is quite intuitive to grasp. In its most basic form, it looks like this:

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[9] Otto Scharmer holds a Ph.D.in economics and management from Witten-Herdecke University, Germany. He is a Senior Lecturer at MIT Sloan School of Management and a visiting professor at Center for Innovation and Knowledge Research, Helsinki School of Economics, and founding chair of Presencing Institute.

[10] Wheatley, Margaret J. *So Far From Home: Lost and Found in our Brave New World*. Berrett-Koehler Publishers, Inc. San Francisco, 2012 (this was the book Wheatley wrote INSTEAD of the 20th edition of Leadership and the New Science)

Co-Sensing	Open Mind	Co-Creating
Observe, observe, observe—*see with fresh eyes, see the 'field'*	**Open Heart**	Acting Swiftly with a natural flow, *create prototypes, iterate, iterate, iterate*
	Open Will	

Co-Presencing:

Retreat and Reflect—*seeing with the heart and connecting to mystery and the Source*

His theory is grounded in action-research from working with global companies, international institutions, and cross-sector change initiatives on four continents. Central to the model is the idea that everything is done in a collaborative and engaging way with all stakeholders.

Theory U has been a central aspect of my consulting practice since 2007. It has been a valuable frame for holding complex projects involving diverse stakeholders from across a system. In 2009, I began working with four different religious congregations who had decided to merge into one single community. These religious congregations are organizations of vowed Catholic sisters. The congregations are identified by their "charisms" originating from their respective founders. For example, the Dominican order was founded by St. Dominic in the thirteenth century. He instructed his followers "to teach, to preach, and to pray." As such, the Order of Preachers are considered to embody a charism of preaching and teaching of wide interpretation and expression. The Franciscans were founded by St. Francis—also in the thirteenth century—and the Franciscan charism focuses on simplicity, poverty, and care of all creation. Present day congregations usually function with an elected leadership team and a body of vowed women who have joined that religious order with a commitment to living in community and being faithful to their order's constitution and governance structures. The elected leaders provide spiritual leadership for the congregation, manage the day-to-day operations and the administrative aspects of a system that can vary in size from a few dozen sisters to more than a thousand. In most, if not all congregations, decisions impacting the entire congregation are made by consensus in assembled gatherings of the entire group. A unique aspect of religious congregations is that when the entire assembled body of the sisters gather for decision making, the "chapter body" is the highest governing body of the institute. Their collective authority surpasses the authority of the elected leadership teams. The elected leaders are then accountable for implementing the decisions that are made by the assembly and must be guided by the values of collegiality, subsidiarity and mutuality with their members. It is a model of governance that embodies servant leadership and shared authority.

Imagine working with four different leadership teams who are responsible for the well-being of their respective congregations having conversations about merging those entities. Even

though the four different congregations were from the same original European foundress, each had created their own unique and autonomous communities that reflected the spirit of a common beginning. The four groups who asked me to work as their consultant for this project represented over fifteen hundred women of *various opinions and support* about merging their four distinct congregations into one unit. I thought that Theory U might be a useful framework for this project. (An interesting point: the interview process limited the applicant pool to consultants who were familiar with Scharmer's work. If you don't already know this, religious Catholic women are some of the most brilliant, sophisticated, process-savvy women in the world).

I worked with the four leadership teams using Theory U as a frame. I explained that Scharmer understood co-observing, co-presencing and co-creating as three distinct movements or phases of the project. The processes involved a communal experience in every step of the way, thus the prefix for each of the three movements. We would work our way down the U by co-observing data, context, values, assumptions, and everything that needed to be made explicit and explored as a part of the merger process. Examples would be to invite conversations with each group about their common life together, like how they structured themselves for governance and how sisters were expected to manage local community budgets. It was important to talk about pre-conceived biases and assumptions the groups may have about members of the other groups, including assumptions about identities, location of their mother houses, and governance of the ministries that each had founded.

The theory also names the emotional landscape of a change process. Scharmer identifies three "voices" that can impede a group's ability to have an open mind, open heart, and open will. Those voices are identified as the *voice of judgment*, the *voice of cynicism,* and the *voice of fear*. These voices can be present in any major change effort. We created experiences that invited members and various groups to notice when judgment, cynicism, and fear was operative. Once identified, they can be dismantled. It's when these tendencies remain in the shadows or become the undercurrent of a process that they can become deadly. A merger of this magnitude is as much a civil merger as it is a canonical one. The project was massive.

The theory helped the leadership teams and their four congregations understand and engage in the processes, conversations and decisions that needed to be made. Together, we practiced listening empathically to the other, learning to see with "fresh eyes," taking deep dives into tough issues and working out complex decisions that involved competing goods and diverse perspectives.

Scharmer's language of being at "the bottom of the U" (co-presencing) was consistent with their culture of engaging in discernment about any decisions that had to be made. His theory includes a spiritual dimension, so it felt familiar to the sisters. We talked about the necessity of being playful and engaging in times of experimentation as decisions were made and understanding that when "going up the U," risk-taking and mistakes would be a part of the process. They tinkered with different iterations of integrating their four distinct operational systems; they created an interim governance structure to get them through the first four-year

cycle, and they agreed to "hold lightly" their early decisions, trusting that early decisions could be thought as "iterative" and modified with new information as the new entity grew into its own.

The process took over four years, and by the time they had merged into one entity, nearly every sister across the four former groups knew the language of Theory U. It wasn't an abstraction or "flavor of the month" jargon. The final decision of becoming a combined congregation resided in the fifteen-hundred sisters. They came together in collective assembly to make the final commitment. By that time, Theory U was a familiar frame of reference and "container" for their work. It continued to be a reference for the early decisions of the newly formed community. The cycle of co-*observing, co-presencing, and co-creating* had allowed the community to create an emergent community through democratic and inclusive processes.

Let's return to that Monday in August when I described sitting in the music room of Nauset Regional High School for a moment. When Meg Wheatley announced that she didn't believe much of what she had written in the nineties, I felt uneasy because I quoted her all the time and had incorporated a lot of her thinking in my own practice. In 2011, I was using Theory U as my primary framework for organizations involved in significant change processes, but I still loved the idea of *fractals, strange attractors,* and a *self-organizing universe*. How could she not still believe in those things?

The two-loop theory provided a larger frame of reference and made it explicit that systems have a natural life cycle of growth and decline, and that if a system was in a stage of decline or decay, our work wasn't to put it on life support.

On that Friday, when she drew the second "loop" and talked about emergence, living with uncertainty and unpredictability, it was if she had given me a missing puzzle piece. Theory U was a framework that could "hold" a project of an organization wanting to undergo a transformative change initiative. The two-loop theory provided a larger frame of reference and made it explicit that systems have a natural life cycle of growth and decline, and that if a system was in a stage of decline or decay, our work wasn't to put it on life support. Her model was more explicit in the ecological aspect of systems as living, breathing organisms that have a natural life cycle of rising, peaking, and ultimate decline. She insisted that It was not possible to undo, reverse engineer, or fix what is broken in our systems, because they are not machines. Our existing institutions have emerged out of complex interdependencies and relationships of multiple dimensions and entities. The two-loop model wasn't a repudiation of what she had previously written, she just stripped down the complexity into a simple evolutionary framework of how living systems evolve over time. She viewed the two loops as a new *map* to help us see the complexity of living systems and to understand how to support creating *new approaches* in response to what is no longer working. She wasn't denying the exquisite knowledge that quantum physics had given the world; she just refused to simplify the concepts into quick fixes for a dying system.

Her explanation gave me new language to talk about what Scharmer described as "leading from the future as it emerges." *Her emerging loop was another way to describe Scharmer's "going up the U" when he says to "act quickly" and to "let come" what one is sensing is trying to*

emerge. What she was adding to his work was the role of the way finders and the degree to which this time of emergence was a time of great uncertainty, unpredictability, and risk-taking. It was as if she was spreading icing on an already moist, rich, delicious, chocolate cake. I left that classroom more confident than ever in not only what she had written in the nineties, but also what Scharmer was saying in the early two-thousands and now, what she was elaborating on. I was ready to try this new language on with some of my existing clients, shaky as I was in trying to get my head around all that she had said that week.

Two-Dimensional Models in a Multi-Dimensional World

We shall not cease from exploration, and the end of all our exploring will be to arrive where we started and know the place for the first time.
—T.S. Eliot

If we were to do a *deep dive* into the immense well of scholarship that influenced both Wheatley and Scharmer's models, it would be correct to say they drew from *system sciences*. Systems theory is not singular, but rich in a diverse tapestry of understanding coming from studies in evolution, quantum physics, biology, cognitive theory, depth psychology, and other disciplines. Conceptual models attempt to illustrate complex ideas in clear and concise ways. They are approximations and simplifications of arcane theories. The trick is to be able to honor the simplicity of a model without sacrificing the depth and complexity of the ideas it is trying to hold. And there are times when rational logic and the limitation of our conceptual frameworks fail us. That is why we need artists and poets so that we can see beyond the poverty of our explanations and flowcharts.

After twenty years of working with Scharmer and Wheatley's theses, I more fully understand the depth of their thinking and the influence of the broad spectrum of systems thinking in their work. I am beginning to grasp the implication of what it means to say that our families, communities, and institutions exist as living systems. Their models and thinking have been a staple of my practice for over two decades, but it is as if I am seeing them for the first time. What has captured my fancy over these past several months is the idea of making Bateson's work more evident in Wheatley's two-loop model of the life cycle of living systems.

A Batesonian Amplification of the Two Loop Life Cycle of Living Systems

The Eye Altering, Alters All
—Wm Blake

As previously mentioned, Wheatley was greatly influenced by Fritjof Capra, and Capra's work was significantly influenced by Gregory Bateson. Wheatley's two-loop framework of the life cycle of living systems is a useful synthesis and application of concepts inherent to the system sciences, unfortunately the depth of her thinking may have been lost in translation or not fully understood by some of us applying her ideas in our work. For example, she used the terminology

of *emerged* and *emerging* systems to describe the non-reductionistic relationship of the parts within a living system. She described emergence as the result of actions that happened at a local level connecting localities across boundaries so that systems emerged from the interdependencies and interplay of multiple actions and actors. From the very beginning, she emphasized the importance of trans-local efforts. She stressed that what emerges cannot be predicted or anticipated based on component parts and that what has already emerged cannot be "reverse engineered" to fix a broken or malfunctioning part. *The whole is not necessarily "better" than the parts, it is different. And once emerged, the whole contains qualities that could not have been predicted or foretold.*

However, I am finding that in applying her concepts within organizations, consultants— myself included—the emphasis of trans-local actions has been overlooked. The implication of this is that the importance of innovation, experimentation, and connecting people across traditional boundaries and localities has been lost.

Wheatley didn't say too much about evolution, but it is an integral component of self-organizing systems. Evolution is integral to understanding the dynamics of living systems, and to put a finer point on it, co-evolution is the more accurate term. In his book *The Web of Life*, Capra elaborates on the distinction between adaptation, natural selection and evolution. He states:

"Throughout the living world evolution cannot be limited to adaptation
of organisms to their environment because the environment itself is shaped by
a network of living systems capable of adaptation and creativity. So, which adapts to
which? Each to the other—they *coevolve.*"[11]

This past summer I was working on a project with a colleague who was excited about a new book she had just discovered at a conference sponsored by the Fetzer Institute. She said that the author was describing things that she had heard me say over the past several months and if I hadn't already read it, I needed to. The title of the book was *Small Arcs of Larger Circles by Nora Bateson,* Gregory Bateson's daughter![12] This book is a compilation of essays and poetry that continues to develop the thinking of her father and her grandfather. She integrates their legacy with her own insights concerning an ecological and evolutionary perspective of our world. Reading her essays was like discovering an abandoned room of the house I've lived in for thirty years. The concepts she talked about were familiar, but I had not fully lived into their relevance or significance. Her words poetically illuminated the arcane ideas of her father and grandfather while reinforcing contemporary ideas concerning complex systems and living in an era of uncertainty.

Simultaneously, over the summer, I had witnessed a couple of different applications of Wheatley's two-loop framework and was uncomfortable with how things were being presented or explained. Friends and close colleagues would more honestly describe my response to these

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[11] Capra, Fritjof, *The Web of Life: A New Scientific Understanding of Living Systems.* Anchor Publishing. 1996

[12] Bateson, Nora. *Small Arcs of Larger Circles: Framing Through Patterns*. Triarchy Press. 2016

experiences as annoyance and agitation. I decided it was time to take a new look at Wheatley's work and amplify some of the concepts inherent but not always explicit when applying her work. Truthfully, it was more like being prodded than deciding. I contacted Martha McGinnis—a colleague who is a graphic artist—to work with me in creating images that would help illustrate the evolutionary aspect of emerging systems. I have drawn heavily on Nora Bateson's work in making these connections.

In an attempt to make a bit clearer some of the underlying principles inherent in Wheatley's model, inspired by Nora Bateson's clarity concerning the role of evolution in our everyday existence, and in an effort to show the integration of quantum physics as integral to self-organization of social systems, I brazenly suggest the following modification to Wheatley's two loop framework.
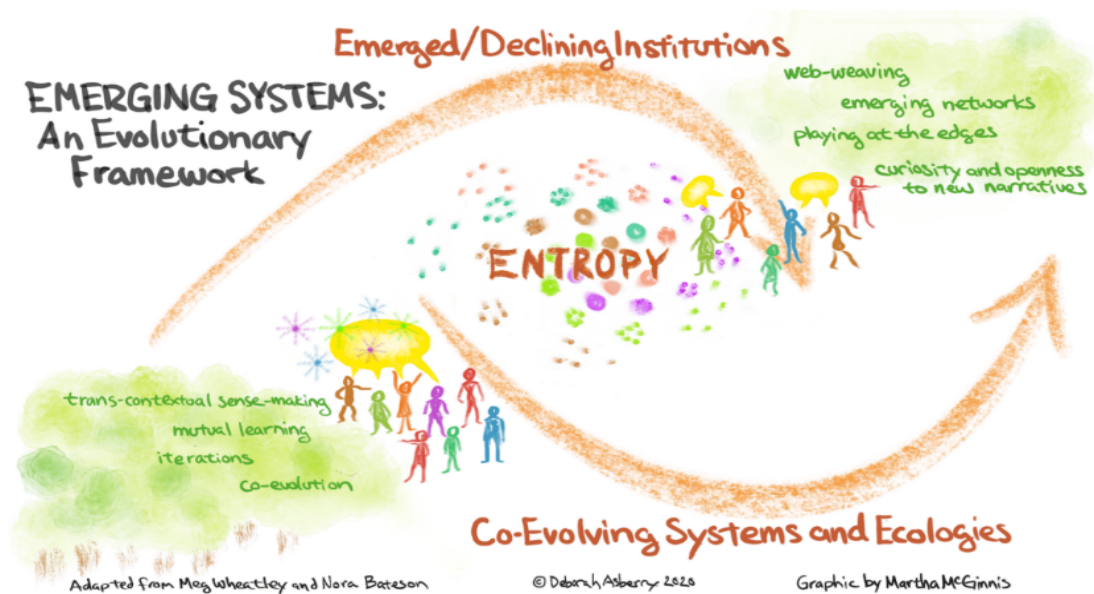
Emerged Institutions Instead of Emerged Systems

Emerged/Declining Institutions

You might notice that when Wheatley first illustrated her two-loop map she wrote the words "*emerged systems*" on the top loop. What happened in my mind, and consequently, what was tacitly translated to my clients, was to talk about declining systems in the abstract and far removed from their own organization or experience of living and working systems. When thinking and talking about a system declining, it seemed bigger than life and beyond anything that any one of us might be able to handle. Our conversation became more theoretical and academic than practical. At times, we became a little self-congratulatory about how clever we were; meanwhile,

nothing really changed. Our conversations were compelling, but the work of acting on what we were learning still felt "out there" somewhere, not *here* and now, where we live our lives. Social institutions are systems, but they are systems within a system within a system. It is difficult to wrap our brains around such a meta concept. A simple, but terrifying reframe is to think about it as declining *institutions* instead of declining *systems.* It's more manageable and more real. It implies a conversation about *my* institution declining.

Letting Go Even When It Hurts: A Case Study

As previously mentioned, many of my clients are congregations of women religious. For the most part, these groups are intimately familiar with Wheatley's two-loop framework and understand the relevance of her ideas to the issues they are facing within their respective congregations. A significant issue concerns diminishing numbers within their membership due to the aging of the sisters and the fact that few young women are joining them. Consequently, an on-going conversation within these groups concerns the *future of religious life.* With just a few exceptions, the conversation about the future of religious life as it exists worldwide across an eco-system of hundreds of congregations is most often being explored within the *container* of their congregation. There are unique and particular issues that need to be attended to at a congregational level, and the congregation exists within a larger eco-system of religious life, but those futures are not synonymous. *The future of a congregation is not the same as the evolution of the future of religious life.* It is an issue of *scale*.

What seems to be happening in many of the individual congregations is a tacit assumption--often aided and abetted by consultants like myself--that the way to *support the ongoing evolution of religious life is to ensure the preservation of their existing congregation.* That is self-preservation, not evolution.

Currently, there are over four-hundred religious institutes or congregations in the United States. These religious orders have been around for over one hundred and fifty years; many of them founded by European sisters coming to America to respond to the needs of immigrant Catholic families. These congregations have rich histories, and over the past hundred and fifty years, they have founded universities, hospital systems, academies, and social service agencies across the United States. There is a natural desire and instinctive tendency to preserve the *congregations' charisms* so that the rich tradition and spirit of the founding order will continue into the next century. What seems to be happening in many of the individual congregations is a tacit assumption--often aided and abetted by consultants like myself--that the way to *support the ongoing evolution of religious life is to ensure the preservation of their existing congregation.* That is self-preservation, not evolution. This is never explicitly stated, but we act as if an existing *congregation* can figure out how it might evolve over the next few decades, then they will have de facto contributed to the *emergence of the next iteration of religious life*. Lots of energy is being spent on propping up the current container of how particular groups are living their religious life. The problem with this kind of thinking is that it is reductionistic and mechanistic and ignores the complexity of the broader context. There is a false equivalency

between the preservation of a part to the evolution of a broader whole. *We need to distinguish between keeping an existing congregational structure viable from the work of participating in an evolutionary progression of the life form currently known as religious life.*

We, consultants mostly, justify this myopic view by saying that there is important work to do. There is a tacit suggestion *that the demographics are a problem to be fixed, so if* the congregation becomes more contemplative, more international, more intergenerational, more intercultural, more inclusive, move technologically savvy, more global in their vocational work (you get the idea), then the next iteration of religious life will emerge. All this work is done in order to support the *future of religious life*, but what is really happening is that a lot of time, energy and money is being expended to preserve the status quo.

Current projections suggest that over three-hundred of the approximately four-hundred religious congregations will come to completion over the next few decades.[13] *Our institutions are going away*. There is freedom in admitting that. There are things we must do within the declining institutions to ease the suffering and support the coming to completion, but it is *not our work to put our institutions on life support*. Hope is found in making the distinction between what is dying and what isn't. The *institutions* of a democracy may crumble, the ideal of democratic societies lives on. Existing *congregations* of religious orders may cease to exist, the ideal of living a life committed to the principles upon which they were founded continues. *Missions and charisms evolve to meet the needs of an evolving world.* If we can work trans-institutionally in response to the broader environment, perhaps new systems will evolve out of our efforts.

Seeing the Way Finders

Wheatley has a lot to say about what happens during this time of decline and decay. In her original graphics in 2011, she talked about way finders as being individuals who were willing to work for something different from the status quo, and she depicted them as yellow stars. We revised her original depiction and drew the way finders as people. I think of the individuals as being *some of the people* that I know and love. They are those who admit the truth, look around and say, "there is work to be done during this time of loss." They are wide-eyed optimists; clearly seeing what is crumbling around them and willing to work for something better. They are like heat-seeking missiles, searching for others who are daring enough to suggest there are alternative narratives to the dominant worldview. These courageous individuals are unwilling to exist in silos or echo chambers and encourage others to go beyond the known and familiar. These

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[13] The Center for Applied Research in the Apostolate, Georgetown University, 2019 projections

folks need to *find* one another. They need opportunities to convene in order to think and talk together. An aspect of their work is to frame compelling life-giving questions and invite others to join them in their inquiry. They need the ability to find *play at the edges* of what is known and comfortable. Notice that it doesn't say to *work* at the edges. *Play* involves a tolerance for spontaneity, creativity, and even perhaps starting out without an intended purpose or outcome.

My sons are eight years apart. When my youngest was still gurgling in his playpen, happy to find his toes to suck on, my oldest was concerned that his little brother wasn't working hard enough and not spending his time wisely. (Being the first born, Ryan may have suffered a bit from being overly responsible and an overachieving third grader in Catholic school). We were getting ready to head out the door one morning for school, daycare, and work. After watching his baby brother happily reaching for the colorful objects strung across the handle of his infant seat, Ryan asked me--in total dismay--why I allowed Drew to spend his time playing all day? How could that be okay? I suggested that as a newly arrived human on this planet, Drew needed to discover all that this world was about, and his play was an important way for him to learn about the world. "Ooohh, I see," Ryan sighed in relief. "His play *is* his work," he said as he ran back to join Drew in his play; confident it was a good use of both their time.

Simply put and as shown in the graphic, in order to work toward an evolution beyond what currently exists, there must be constellations of groups coming together across diverse boundaries, experiences, and world views to think and talk together. Additionally, these constellations of courageous people need to be able to connect with one another in fluid and dynamic constellations, where information and energy is freely exchanged. This is true whether one is working on improving liberal democracies, seeking to find ways to address food insecurities in urban areas, or working as in the climate change movement.

Not Your Grandfather's Entropy

"Toto, we're not in Kansas anymore."
—Dorothy

Wheatley's two-loop framework had three basic components: the *emerged loop, the emerging loop, and way finders*. What she was silent about was the *gap* between the two loops. We all know what happens in a vacuum, and so it is with a popular theory that gains traction across multiple organizations and consulting practices. We filled in the void.

In her 2014 Keynote Address to the Leadership Conference of Women Religious, Nancy Schreck, OSF, referred to the time and place of religious life as *middle space* when she said,

"This shifting within religious life and in world events has taken us to what I call a middle space. We find ourselves in this place of both creativity and disorientation. Much of what was, is gone, and what is coming is not yet clear."[14]

The idea of a *middle space* proved to be a meaningful analogy to the congregational leaders listening that day, and the term was often connected to the two-loop framework. She went on to say in her address that others refer to this in-between time as "Holy Saturday," the time between Christ's crucifixion and the resurrection. This image connotes a time of waiting and vigils. As the years went on, other references to the gap included *liminal space* and *interim time.* We were all trying to make sense of what it was we were supposed to do in this *in-between* space.

An unintended consequence of using these analogies is that it encouraged an anticipatory stance of waiting to see what would *emerge* in the mysterious unfolding of an uncertain future. The conversations focused on being spiritual leaders during this time of waiting and anticipation. There was an emphasis on contemplative practices and dialogue, staying connected with one another, living with uncertainty, and being a compassionate presence in the world. All of this seemed important, but I was becoming increasingly aware that despite my best efforts and my clients' deepest longing to be active participants in an uncertain and mysterious future, nothing was really changing. We knew the words. We had the models, yet it felt like we were marking time while watching a steady decline in the existing structures and way of life.

Meanwhile, leaders of congregations continued to attend funerals, sell properties, figure out how to create a continuum of care for aging sisters and reorganize governance structures in light of a significant shift in demographics. Portfolios were drawing more heavily from investments as fewer sisters were employed in remunerated positions. Younger sisters grew weary of only hearing about how to care for most members who were above the age of seventy-five and wondered when the conversations would focus on innovative and creative ways of living vowed life in the twenty-first century.

It wasn't until this summer as I was reading Nora Bateson's *Small Arcs of Larger Circles* that I came to realize the importance of entropy as it relates to the gap of the two loops. She quoted her father when he said, "the new comes out of the random." She elaborated:

"Mutual learning happens in the entropy; we need the confusion to release the new. This dance exists everywhere in nature. It is in the swarm of confusion that becomes the grace of the way things come together."[15]

The word *entropy* jumped off the page at me. The second law of thermodynamics: a system's tendency to move from *order* to *disorder*, is a *state of being,* not a *time or a place*. It is the natural occurrence of disequilibrium and disorder in which the new is born. Our work is not

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[14] Schreck, Nancy, OSF. *However Long the Night: Holy Mystery Revealed in our Midst*. LCWR 2014 Keynote Address

[15] Bateson, Nora. *Small Arcs of Larger Circles: Framing Through Patterns*. Triarchy Press. p. 48

to wait on something to be born, our work is to cooperate in this state of confusion and random occurrences to facilitate the new.

My excitement soon dissipated as it slowly dawned on me that the second law of thermo-dynamics is most often attributed to classic *Newtonian physics* which describes mechanical events relative to laws of motion and gravity, and is usually associated with the dualism of a Cartesian worldview. *In Classic physics, entropy meant death*. Entropy is not considered to be a strategy for innovation. Bureaucracies, organizational charts, and procedures are written to avoid this natural state of entropy, but we are talking about *self-organizing, open systems*. What does entropy *do* in open systems? I searched through the appendices of the books piled and scattered around my office for any mention of entropy within living systems, and they all pointed to Ilya Prigogine's[16] explanation of dissipative structures. In one way or another, dissipative structures were explained as the basis of all living systems, including human beings. Capra summarizes Prigogine's explanation of entropy in living systems this way:

> *In the living world order, and disorder are always created simultaneously. According to Prigogine, dissipative structures are islands of order in a sea of disorder, maintaining and even increasing their order at the expense of greater disorder in the environment…. In the new science of complexity, which takes its inspiration from the web of life, we learn that non equilibrium is the source of order. Throughout the living world chaos is transformed into order.[17]*

Wheatley put it this way:

> *Open systems have the possibility of continuously importing free energy from the environment and exporting entropy. They don't sit quietly by as their energy dissipates. They don't seek equilibrium. Quite the opposite. To stay viable, open systems maintain a state of non-equilibrium, keeping the system off balance so that it can change and grow. They participate in an active exchange with their world, using what is there for renewal. Every organism in nature, including us, behaves this way[18].*
> *Entropy in a closed system is different from entropy in an open, living system.* Ilya Prigogine helped the world to understand that the path between disorder and order can best be explained as "order out of chaos" or

If there were a 'secret sauce' that makes Wheatley's model come alive when applied to the state of our social systems, it is the role that entropy plays during the time of collapse and disintegration. It is a natural state in living systems of disequilibrium and disorder that is full of possibilities

[16] Brief explanation of who he is a most quoted works

[17] Capra, Fritjof, *A New Understanding of Living Systems: The Web of Life*. Anchor Books. 1997 pgs..190-191

[18] Wheatley, Margaret. *Leadership and the New Science*. Berrett-Koehler Publisher, Inc. 1992 pg. 78

"order through fluctuation."[19] We can find solace in the state of entropy where disorder, dissipation, disequilibrium, and fluctuations disturb the status quo. We can trust that in this state of disorder, in concert with others around us and the environment that enfolds us, there is the possibility of self-organizing in new, more complex and more adaptive ways that what we have always known.

If there were a 'secret sauce' that makes Wheatley's model come alive when applied to the state of our social systems, it is the role that entropy plays during the time of collapse and disintegration. It is a natural state in living systems of disequilibrium and disorder that is full of possibilities. This is the necessary context for self-organizing that yields new order. An archetypal form most often seen in self-organizing, dissipative structures is that of a spiral. Galaxies, hurricanes, tornadoes, the funnel that forms as water swirls into the bathtub drain, the shape created when pouring cream into your coffee, chemicals subjected to changing conditions causing disturbances all form into spirals. Spirals are one of nature's basic forms of design and found in art since the beginning of humankind. It seemed important to denote the state of entropy with spiraling colors and shapes swirling in the gap between the two loops. It is within the swirl of chaos that new life emerges.

In the spring of 2019, I consulted with a group of women religious leaders from multiple congregations and several different countries who were exploring the concept of leadership in a diaspora moment.[20] We were using the two-loop framework as our theoretical model, and explored how the gap between what was dying and what was trying to be born was an experience of *diaspora*. This was a group of younger leaders who were exploring ideas about the kinds of leadership needed at times of uncertainty and complexity, and the breakdown of existing systems and institutions. Most of these sisters are clearly aware that their institutions are dying, and yet they are passionate about living a vowed life. They are interested in discovering the qualities necessary for being leaders in a system experiencing acute disturbances and disequilibrium. What does it look like for a people to be a diasporic people? Or, as Nora Bateson asks, "what is the ecology leadership in complex systems?"[21] How are they being called to participate individually and as a collective, as members of declining congregations and way finders, during a diasporic moment? A diaspora journey is a journey of instability and unpredictability. It is a journey toward a new homeland, a new existence in response to disturbances, fluctuations and disorder. This group continues to invite its members into deep dive experiences related to these ideas. They trust that from the storm of confusion the new way forward will dawn.

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[19] Prigogine, Ilya, and Isabelle Stengers. *Order Out of Chaos: Man's New Dialogue With Nature.* Bantum Books. 1984

[20] Leaders in A Diaspora Moment, Leadership Collaborative Biennial Gathering, Chicago, 2019. www.thelc.global

[21] Bateson, 2016 p.83

Pay Attention to the White Noise and Fluctuations

Tell a wise person, or keep silent, because the mass man will mock it right away.
—Goethe

Prigogine explains the role of fluctuations and white noise that occurs when an organism is in a state of disequilibrium and instability. His explanation helps us understand what happens in living systems when the flow of new energy and matter causes a disruption from equilibrium and sends it spinning. In living systems, disruptions and disequilibrium provide the opportunity for transforming into new structures and greater complexity. This transformation is the result of *fluctuations that are amplified by positive feedback loops.* This amplification of an unexpected fluctuation of energy or matter is disorienting at first, and pushes a system beyond its normal way of existing, but it is the catalyst for evolution.

Let's explore a few social examples. In the beginning stages of a social movement, there is unease and disquiet within the body politic. The civil rights movement did not begin with Rosa Parks' refusal to move to the back of the bus, but that incident helped bring to public awareness a movement that was simmering just beneath the surface. Neither *The Feminine Mystique* nor *Of Woman Born*[22] started the women's movement, but these books helped to propel what was already stirring within the social system. The

In living systems, disruptions and disequilibrium provide the opportunity for transforming into new structures and greater complexity.

Stonewall riots helped to solidify the LGBTQ community into a movement for equal rights, but the energy was already in the broader social system. These examples of fluctuations of energy into the system of our social fabric disrupted the status quo and their disruptive energy was amplified leading to iterative, evolutionary steps of greater complexity. Over time, our society has made strides of greater complexity concerning human rights and social justice.

And just now, in these last few days of bringing this document to completion, there is another example of social disruption and fluctuation. George Floyd's murder did not start the Black Lives Matter movement, but this particular tragedy, captured on video, ignited a global response. Similar fluctuations occurred in response to the myriad other unjust deaths of people of color, but *this* one was amplified to such an extent that the system reverberated into a state of national disorder, disequilibrium and chaos. These early days of summer offer up a compelling example of emergence. The civil protests, social rebellions, and violence associated with this one tragic, horrific murder could *not have been predicted or anticipated*. The economic crisis and global pandemic are interconnected, but they cannot be parsed into individual aspects to be studied in isolation of George Floyd's death. The spontaneous eruption defies a simple explanation and has captured the attention of the world. Will this latest fluctuation lead to

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[22] Betty Friedan, *The Feminine Mystique*, (W.W. Norton & Company, 1963. Adrienne Rich*, Of Woman Born: Motherhood as Experience and as Institution*, (W. W. Norton & Company, 1976.)

greater complexity within our social institutions, or will it dissipate and leave us drowning in the stagnant waters of the status quo? Are we 'open' enough, as a people, a nation, a world to transform this state of dissolution and disequilibrium into a new evolutionary leap of a greater consciousness that embodies interdependencies, acknowledges our interconnectedness, and embraces diversity as essential to our survival as a species? Or will the counter forces of regression impede, distort, or squelch the new energy emerging from this most recent disruptive and cataclysmic event. Time will tell.

Co-Evolving Systems and Ecologies

"It really boils down to this: that all life is interrelated. We are all caught in an inescapable network of mutuality, tied into a single garment of destiny. Whatever affects one directly, affects all indirectly. We are made to live together because of the interrelated structure of reality."
—Martin Luther King, Jr[23]

What if we think about the bottom loop as *co-evolving systems and ecologies* instead of emerging systems? How might that re-frame of Wheatley's original model influence our thinking and our actions? As I have already suggested, *emerging* denotes an anticipation that something will happen at a future time. The etymology of the word gives a different meaning. The word *emergence* comes from the Latin word *emergere*, meaning to arise out of, to come up from. The medieval Latin root was *emergentia,* denoting an unforeseen occurrence, the same root for the word *emergency.* [24]Emergence is a sudden, unforeseen occurrence and not a long-anticipated event that we can work to make happen. As previously noted, the civil unrest in response to the death of George Floyd is the most recent example of emergent phenomenon.

Wheatley emphasized in her lectures and workshops that emergence is *an unpredicted, an unforeseen phenomenon,* that springs up from the confluence of many diverse and interdependent components that operate in a self-organizing, organic way. Her explanations are consistent with the root meaning of the word. Capra uses the same language when describing the characteristics of self-organization when he says it involves a "spontaneous emergence of new structures and new forms of behavior in open systems far from equilibrium."[25] An example of how systems emerge in an unpredicted way would be the internet. The advent of the *world wide web* emerged from the interdependence and synergies related to the multiple and distinct developments in computer hardware and software, the sophisticated application of mathematical algorithms intersecting with advances in artificial intelligence, and the engineering and technological advances that allowed computers to go from the size of entire rooms to

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[23] Christmas Eve Sermon, 1967. Ebenezer Baptist Church

[24] Lexico.com

[25] Capra,1996 pg. 85

something that fit into the back pockets of our skinny jeans. Before we had the internet, there were no groups who sat around and wondered how electric typewriters, transistor radios, and telephones would emerge into handheld devices that would be able to function as a word processor, search engine, telephone, and global positioning system. We couldn't have even asked the questions because we didn't have the vocabulary to know what to ask. We did wonder if we would be able to see the faces of the people we were talking to on our telephones, and if it were possible to build smaller computers, but we were limited in what we could ask based on what we already knew and had language to describe. Similarly, we can't yet imagine what will come up from the random interchanges and confluence of energy, information, knowledge, and information spiraling around us now, in this time of disequilibrium and disorder.

The advent and spread of COVID19 is a horrifying example of an emergent phenomenon. The coronavirus family has been around for at least ten thousand years.[26] It is speculated that the virus responsible for the COVID19 pandemic, SARS-CoV-2, *evolved* because of a viral jump between bats and humans, although that has yet to be proven. Virulent new strains of virus frequently occur because of a trans-species crossover—the epidemics of bird flu and swine flu are recent examples. Development of pandemic-level viral strains occur when a single cell becomes infected with *two distinct viruses*. In our current pandemic, we don't know if the original host cell was a bat or a human. Regardless, when that one cell became simultaneously infected with *two distinct but related coronaviruses*, a novel, chimeric SARS-CoV-2 virus resulted. When the new virus entered the human system, it proved to be fatal because the human body had no acquired immunity to this brand-new iteration of coronavirus. The pandemic *emerged* because the virus *evolved* in the way that it did. An example of co-evolution processes between virus and humans is an example of a natural immunity we may have as a human family to existing viruses. (An important distinction to understand is that COVID19 is the disease created because of humans being infected with the newly-evolved SARS-CoV-2 virus.)[27]

In her chapter *Parts & Whole, Hope and Horror*[28]Nora Bateson does a compelling analysis of how the machine metaphor continues to influence almost every aspect of our global society and, in part, is contributing to the rise in nationalism and the degradation of our ecological systems. She begins the chapter describing her visit to the Library of Congress in 2013 where she found letters between her father and Margaret Mead from the 1930s that detailed their concern for the rise of fascism in Nazi Germany and the rise

What if we have the vaccine to protect us from our most petty and self-destructive selves but we have not figured out a way to 'apply' it?

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[26] Wertheim, Joel O et all. "A case for the ancient origin of coronaviruses." Journal of virology vol. 87, 12 (2013): 7039-45, doi: 10, 1128/JVI.03273-12

[27] I am grateful to my youngest son, Drew, a biochemist studying at Purdue, University, for explaining the biological aspects of SARS-CoV-2 and COVID-19

[28] Bateson, Nora 2016 ppg. 151-167

of eugenics in the scientific world. These letters and subsequent conversations with scientists and thought leaders from around the world provided the genesis for what is now known as systems theory. Their guiding inquiry was "to find a way to study life in its wholeness as a kind of vaccination against fragmentation"[29]. The mechanistic, fragmentation of thinking that contributed to the rise of fascism in the twentieth century continues to exist in the neo-Nazi white supremist movements that exist today. She laments that with all the advances in systems theory that has occurred over the past several decades, a mechanistic worldview continues to find agency in our thinking, our politics and our public policies, often in subtle and imperceptible ways. For her, hope is found in the degree to which we will be able to understand that divisions are arbitrary and that living systems exist within multiple contexts. She reminds us that living systems are *learning systems* and stresses the inherent role of context in evolutionary processes.

Let's pause a moment to let this sink in. At the turn of the last century, Bateson and his colleagues were looking for a theoretical vaccine against a worldview of fragmentation. In 2020, we are desperately searching for a biological vaccine for a novel virus that has brought the world to its knees. *Is there a connection here? What might these two disparate circumstances, separated by a century, be telling us?* How might our fragmented way of thinking and seeing the world influence how our systems evolve if that is the context in which we exist?

It was this chapter that ultimately convinced me to posit a different vocabulary for the two-loop model and to use *co-evolving systems and ecologies* on the bottom loop instead of *emerging*. Emerging is a correct word, but co-evolving takes the concept even deeper. Influenced by the writings of three generations of Bateson, I am emboldened to posit that evolution happens in a context and is a process of *mutual learning* and *mutual sense making*. Further, as Lovelock explains in Gaia Theory, the universe unfolds in a single co-evolutionary process[30], so our bottom loop must honor a *co-evolutionary perspective*.

Nora Bateson offers very practical methods and processes for those of working in organizations seeking solutions to the existential issues facing us in the twenty-first century. She insists that we need opportunities to gather in conversations that promote mutual learning within a trans-contextual environment and that our primary work is to engage in *sense-making* relative to the patterns, paradoxes, and complexities that exist in our world. A part of our work must be to notice our tendency to break complex living systems into disparate and analyzable parts. Borrowing from Scharmer's work, I also include here that co-evolving social systems will be seeded by those willing to create prototypes and engage in iterative experimentation processes. Bateson doesn't offer simplistic models or explanations that ensure that our species will survive. She concludes the chapter with this bit of hope:

> *There is no way to fix all that is broken now. Broken families, broken countries, broken cultures, failing eco-systems, volatile economies, lost identity: from the smallest scale to the most global, human interaction is clumsy and destructive. But to see the distortions of our world as a consequence of the way systems have learned to interact is a new entry*

[29] Ibid pg. 154
[30] Capra, 1996, p.227

point. Perhaps this entry point holds both history and possibility within the ever-shifting process of learning.[31]

What if we have the vaccine to protect us from our most petty and self-destructive selves, but we have not figured out how to 'apply' it?

Trans-Contextual Sense Making: Some Examples

For a practical example for how a group is working in a trans-contextual way and creating processes for sense-making and mutual learning, let us return to my example of religious congregations. There is a collective desire trans-congregationally to seek ways in which to support an evolutionary unfolding of what has been known to date as *religious life*. A systemic approach to supporting the evolution of this modern-day life form, from a living systems framework, would be to work not only *across congregations, but also across denominations and traditions with others who embody similar values and beliefs*. I was involved in such a conversation this spring. The diverse contexts spanned across generations, denominations, lifestyles, and sexual orientations. Some were religious sisters, others were not. We found that that it wasn't helpful to use the words of what is already known and understood. We struggled to find the words that contained the fullness of what we were trying to explore. We soon realized that the term 'religious life' was too narrow of a frame for the exploration. We wondered if we were talking about the future of religious life within an institutional context or were we exploring new life forms of a committed life that build on the prophetic and mystical traditions of early Christians and those of other faith traditions? We asked ourselves what was *the difference that made a difference* in what is currently known as religious life and what we sense is emerging across denominations and institutions. The experience was energizing and compelling, even though it occurred 'virtually' because of the quarantine on travel and social gatherings. We suspect this gathering will lead to other similar conversations rich with trans-contextual textures of ideas, gender identities, experiences, and cultures.

From the perspective of co-evolution, what if the operating assumption was that in the broader eco-system of committed and faith-filled people, there are many who feel called to live in a committed relationship with others, dedicated to spiritual truths and practices, connected by common values and beliefs, and in service to living in harmony with the created universe? Where are these people and how can they become connected in conversation and exploration? How might this assumption guide our actions and our conversations across this broad eco-system? Instead of holding on to the current structures, what if we work toward co-creating new

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[31] Ibid pg. 166

systems that would support such life forms? What might *emerge* if we engaged in this type of work and asked these kinds of questions? How might religious life *evolve* within this broader context? It will be exciting to see.

Another example on a much smaller scale, involves my volunteer work with League of Women Voters of Indiana, the oldest legacy organization of the women's suffrage movement. The League of Women Voters is celebrating their centennial celebration of the passage and ratification of the 19th Amendment that secured women the right to vote. In Indiana, we have been working on the issue of partisan gerrymandering and the strangle-hold it has on our democracy and the erosion of the right to *one person one vote* that is guaranteed in the Constitution of the United States. For several years, I also worked with Common Cause of Indiana; our two organizations worked tirelessly to impact legislation in the state of Indiana that would reform this broken system of legislators choosing their voters. In 2016, my colleagues and I realized that we were fighting a losing battle; there were too few of us and too many lobbyists and politicians working against us. We began to invite other social and civic service agencies with diverse missions to join us. We developed mutual goals that would support a collective effort of redistricting reform and simultaneously support the other agencies' missions of common-sense gun laws, environmental issues, civil liberties, mass transit, energy regulatory issues, women's health— progressive issues involving progressive organizations across a

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When we are at our best, we engage in mutual learning across issues, across agencies, across locals. When we lose our way and fall back into our tendency of mono-cropping, we value our own organization over our partners' and question their commitment or investment to our common cause.

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broad continuum. Our coalition is fluid. We learn from one another; we engage in self-organizing processes across the state that respects local capacities and issues. When we are at our best, we engage in mutual learning across issues, across agencies, across locals. When we lose our way and fall back into our tendency of mono-cropping, we value our own organization over our partners' and question their commitment or investment to our common cause. We fall back into our individual silos and engage in judgment about others who are not prioritizing the way we think time and resources should be prioritized. We get it right more than we don't. We have not created a new organization; but we have developed an eco-system of diverse agencies and created networks of relationships across the state to support our efforts. We have yet to impact a legislative result, but we have significantly raised awareness and are creating a movement of concerned Hoosiers.

Considering the current circumstances, collectively, we have turned our attention to protecting the upcoming general elections. Despite our disparate missions, we are working to form a broad movement across the state demanding transparency in the elections and ensuring that citizens can vote by mail if the pandemic persists. Our current democratic institutions are on the declining arc of the two-loop model. Our founding democratic institutions have deep cracks. The past three years have revealed vulnerabilities and weaknesses that we had ignored as a nation of free people. The country most likely will enter a sustained time of disequilibrium and

instability. We are off-balance. There are those standing at the edges playing with new ideas about how to live out this grand experiment of self-governance in these times. There is a lot of white noise and fluctuations. Will we evolve into a greater understanding of the competing values of self-determination and common good? Is it possible to live more fully as a pluralistic society that embodies the value of *e pluribus unum*? Or will we devolve into pseudo-populism and a monolithic dystopia that values a singular race and oppresses all opposing viewpoints? Again, only time will tell.

Loving the World: Our Saving Hope

The most telling and profound way of describing the evolution of the universe would undoubtedly be to trace the evolution of love.
—Teilhard de Chardin

It is impossible to talk about the evolution of social systems without considering human evolution as well. It is, after all, the human species that lives and works in our social constructs, so there is an evolutionary aspect involving our human family that intersects with the evolution of our social systems. As we imagine our social systems evolving into new forms and greater complexity, we must understand that it is only possible if there is a corresponding evolution of the human mind. A central thesis of Gregory Bateson's work was that a "mindfulness" exists that connects across the entire created universe; a cosmic phenomenon of "mind" that includes the human species but is not limited to us. According to his theory of living systems,

> "mind is not a thing but a process—the very process of life. In other words, the organizing activity of living systems, at all levels of life, is mental activity. The interactions of a living organism—plant, animal, or human—with its environment are cognitive, or mental interactions. Thus life and cognition become inseparably connected. Mind—or more accurately, mental processes—is immanent in matter at all levels of life. "[32]

Batson developed his theory of mind in the 1960s, and his work in this area influenced the later development of a systems theory approach to mental illness and addictions. In his view, "mental processes are a necessary and inevitable consequence of a certain complexity that begins long before organisms develop brains and higher nervous systems." He also emphasized that "mind is a manifest not only in individual organisms, but in ***social systems and eco-systems***." (emphasis mine)[33]

At about the same time that Bateson was developing his concept of mind, others were exploring the evolutionary processes of human consciousness and human spirituality. Teilhard de Chardin, an eminent scientist and Jesuit priest, was interested in the intersection of science,

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[32] Capra, Fritjof, *Web of Life* (1996)
 p. 172
[33] ibid p. 173

mysticism and theology. He believed there was a natural coherence of thought across these seemingly disparate fields. He was most fascinated with what he saw as an evolutionary understanding of the Divine.   He believed that the universe and everything in it is constantly moving toward a point of perfection (complexity) defined by unity and love. It doesn't take a huge leap of imagination to see the congruence between what he was describing as both a scientist and theologian and what Bateson was describing from the disciplines of biology and genetics. And to just sweeten the pot, swirling around during the very same time, Thomas Merton, the Trappist monk we discussed earlier, made a journal entry in March of 1958 about an experience he had standing at the corner of 4th and Walnut in Louisville, Kentucky as he did errands for the monastery. He wrote:

> In the center of the shopping district, I was suddenly overwhelmed
> with the realization that I loved all those people, that they were
> mine and I theirs, that we could not be alien to one another even
> though we were total strangers. It was like waking from a dream
> of separateness…. This sense of liberation from an illusory difference
> was such a relief and such a joy to me that I almost laughed out loud….
> I have this immense joy of being human (sic), a member of the race in which
> God became incarnate. As if the sorrows and stupidities of the human condition
> could overwhelm me, now I realize what we all are. And if only everybody
> could realize this! But it cannot be explained. There is no way of telling
> people that they are all walking around shining like the sun."[34]

Merton went on to describe the experience and referenced the term *le point vierge* in which he said he could not translate but described it as a point of

> "nothingness at the center of our being—untouched by sin and by illusion,
> a point of pure truth, a point or spark which belongs entirely to God…
> This little point of nothingness and of *absolute poverty* is the pure
> glory of God in us. It is like a pure diamond, blazing with the invisible
> light of heaven. It is in everybody, and if we could see it we would
> see these billion points coming together in the face and blaze
> of a sun that would make all the darkness and cruelty
> of life vanish completely.[35]

I believe we are poised on the edge of a great abyss as a species. Our collective survival depends on our willingness to evolve into a greater form of unity and complexity that erases all illusions of separateness. We are wired to do this. We exist as a self-organizing living system that has the capacity to make this evolutionary leap. There is enough evidence in the entire beautiful spectrum of systems sciences to suggest that it is possible to evolve into a new collective mind

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[34] Merton, Thomas, *Conjectures of a Guilty Bystander*, Doubleday, 1966 p. 156-58
[35] Ibid

that sees the wholeness, the unity, the interconnectedness, and interrelatedness of all of creation—no exceptions.

There are some among us who are leading the way. Ordinary people who insist that it is possible to create new systems, to leave the dying to the dead so that a new form can emerge. Some of you reading these words are the very people who *dare to seek on the margin of society, who are not dependent on social acceptance, not dependent on social routine, and prefer a kind of free-floating existence under a state of risk.* Others of us know people like you and are drawn to you.

I think of people like David Hogg and Emma Gonzalez, who faced the horrors of a mass shooting in their high school on Valentine's Day in 2018 and who responded by joining the movement for gun legislation reform. I think of Malala Yousafzai, who defied the Taliban in Pakistan and insisted that girls should be allowed to get an education. In 2012, as a fourteen-year-old, she was riding home from school when her school bus was stopped by a gang of Taliban soldiers. A Talib boarded the bus, asked for her by name, and shot her. Despite this act of terror, she became a fierce advocate for the education of women, becoming the youngest person to be a Nobel laureate. And then there is young Greta Thunberg, who tolerates harassment like having human excrement being placed in her family's mail box, constant death threats on social media, and being mocked by the President of the United States, who has ignited a global movement responding to the existential threat of climate change.

Among women religious, I think of the young women I have met who have joined religious orders believing that what is now known as religious life will evolve into a newer life form relevant for the twenty-first century. And I think of the young women running for office in my community and in my state in response to what they see happening in our democracy—women who never imagined themselves running for office until the 2016 election.

If you are one of these people, encourage the rest of us to join you. If you don't see yourself as one of them, think again. You wouldn't have made it to the end of this field journal if you weren't. We need to find one another. We need to make connections and work across our varied experiences, boundaries, and cultures. We must listen to one another. We must learn to ask real questions and let the questions work themselves in us. We need to pay attention and *learn how to learn together*. We can do this. We must do this. Our survival depends on it, and we don't have much more time to make this collective leap into Love.

Love is our next evolutionary leap. Holding each other close, let's take that leap together.

About the Author

Debbie is a consultant, facilitator, educator, activist and writer. Her activism and volunteer work focuses on democracy reform and voter rights. She lives in Indianapolis with her husband of forty-seven years. She has two adult sons who keep her young and provided emergency tech support as needed. When not working and weather permitting, she can often be found sitting on her front porch.