

Blessing the Black Dog: Exploring Creativity and Release within the Adaptive Cycle

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Deep in the heart of a far and distant mountain, Old Woman sits alone beside her ancient loom, sending her shuttle back and forth through the threads of the universe as she has since the beginning of time. Her pattern is exquisite, complex, the entire length and breadth shimmering and dancing with beauty. Now, after centuries, after eons, she nears the last rows. With porcupine quills softened between worn teeth, she begins to line the delicate edge, tucking threads around them one by one as she works.

At the back of the cave there is a fire, and on it a cauldron of spring water simmering. In the water are all the seeds of the future. Periodically, Old Woman must rise from her loom and stir the contents of this cauldron to prevent the seeds from burning, and so just before finishing the last, still-ragged rows of her masterpiece, she moves towards the back of the cave to tend to her eternal task. Slowly, hunched and bent, she shuffles to the fire, and while her back is turned, Black Dog skulks into the cave. Quietly, quickly, he trots over to the weaving and sniffs curiously at a loose thread. Taking it in his teeth, tugging, and then shaking his head wildly, he pulls and tears and unravels the pattern until it lies in a mess of tangled threads on the floor. As he slips away Old Woman slowly moves back towards her loom and bends to take her seat. She sees the empty heddles and the heap of threads before her - centuries of painstaking work, destroyed.

She leans over the tangled yarns to take stock of the damage, breathing slowly and steadily in the great quiet of the cave and chewing her porcupine needle thoughtfully. Moments pass. She breathes, and chews. And then suddenly, a new pattern - even more beautiful, more stunning than the last - enters her imagination. She nods, bends lower, and picks out a single thread from the heap. Old Woman kneels, settles, and begins to set her loom.

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The story of Old Woman and Black Dog belongs to the White Mountain Apache people who live in the area now known as Arizona, but its roots run deep and wide throughout the world. Connected to countless traditional myths within the rich loam of the human psyche, it illustrates the making and unmaking of reality by the dynamic forces of the universe. Like many others, it explains creation not as a singular event that occurred once in some distant past, but as a continual, sentient unfolding, an ebb and flow of change encompassing both formation and destruction. While reductionist scientific, economic, and social theories urge us to consider life in terms of mechanization and domination, these stories speak to our own phenomenological experience of a richly paradoxical existence that is at once consistent and unpredictable, straightforward and extraordinarily surprising.

Panarchy, a branch of systems theory linking the transformational processes of natural and social systems, draws out and develops connections between these dual qualities of persistence and change, exploring adaptive cycles as they unfold through time and space. In considering these adaptive cycles we begin to see that certain characteristics of self-organizing systems - such as path dependence, uncertainty, stability, and changeability - are expressed to a greater or lesser degree during particular phases of being. As calcified socio-economic and political systems reveal cracked foundations and new systems yearn to access energy and materials for their own experimental processes, we are now called to take a fresh look at the role of release in the cultivation of resilience, and the ability of our current worldview to embrace/facilitate creative shift. What is our relationship, in other words, to that old Black Dog slipping through the doorway?

Ecology and Adaptive Cycles

Within the rivers of life, the swinging gateway opens and novelty emerges spontaneously to revitalize the world.

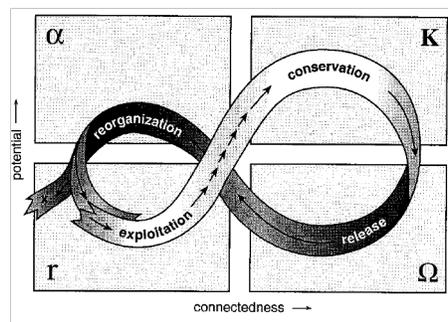
Whatever is most enduring is ultimately overtaken in the ceaseless transformation of things.

- Tao de Jing

By observing the natural world very closely, as our ancestors have always done, we gain insight into the way living systems unfold and change. In their collection of essays entitled *Panarchy: Understanding Transformations in Human and Natural Systems*, ecologists and social theorists C.S. Holling and Lance Gunderson summarize four key features of ecosystem structures and functions:

- 1) Change is neither continuous and gradual nor consistently chaotic; rather it is episodic, with periods of slow accumulation of biomass, physical structures, and nutrients, punctuated by sudden releases and reorganization of those biotic legacies.
- 2) Spatial attributes are neither uniform nor invariant over all scales; rather, productivity and textures are patchy and discontinuous at all scales, from the leaf to the landscape to the planet.
- 3) Ecosystems do not have a single equilibrium with homeostatic controls to remain near it (i.e. the 'climax ecosystem' state); rather, multiple equilibria commonly define different functional states.
- 4) Ecosystems organize themselves around shifting targets, and possess multiple futures that are uncertain and unpredictable¹ (Gunderson et al, 2002: 26).

These four features emphasize the importance of variation, diversity, and irregularity within ecosystems, and invite us to ask questions about the development and evolution of our own lives – how do we organize and adapt to changing circumstances? The model below is an attempt to map the adaptive cycles common to living systems, illustrating a journey through periods of growth (r), conservation (k), release (Ω), and reorganization (α). An exploration of the cycle brings clarity and depth to our understanding of systems theory, helping us to detect a rhythm of sorts in the mysterious pulsation of life.



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The growth, or exploitation, phase takes root in biotic legacies from a previous adaptive cycle – that which is left from the last era of release and reorganization – or in materials and information that enter from the outside.

Participants in the emerging system, be it ecological or socio-ecological, arrange themselves in new

¹ Gunderson and Holling note that 'resource management' strategies that apply fixed rules for achieving constant yields (ex. maximum sustainable yield of fish, timber, wildlife, etc.) that are independent of scale lead to increasing losses of resilience in the systems, leaving them vulnerable to sudden break down in the face of disturbances that could previously have been absorbed. Therefore management must remain flexible, adaptive, and constantly attuned to feedbacks from the system (ibid.). The total collapse and lack of recovery of the cod fishery on the east coast of Canada is a perfect example of the failure of rigidly defined 'maximum sustained yields.'

relationships and niches during this phase. Over the course of time, as these relationships mature and develop, the system slowly moves into the conservation phase. Connectedness and system stability increase while redundancies can be gradually reduced. Diversity may be marginalized to residual pockets while the majority of biomass and nutrients self-organize into a dominant configuration. We can picture here a very dense, mature forest, well adapted to a narrow range of circumstances. This 'front loop' of the adaptive cycle is familiar to us, illustrating as it does the conventional western view of 'progress' – a slow and methodical journey towards increasing efficiency and settlement. Connectedness is high, though changeability and flexibility likely diminished.

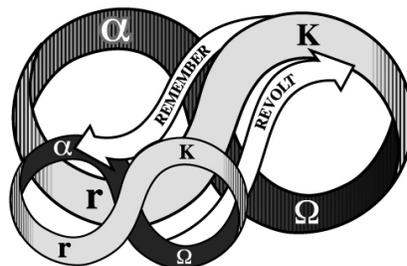
The system, however, will inevitably reach a kind of bifurcation point where its current state becomes too rigid to adapt to changing conditions. Ecologists note that "both external and internal conditions can influence a system and cause it to reach a critical threshold that results in systems reorganization" (Garmestani, 2009: 15). Entering the release phase, the system loses tight organization and temporarily faces a loss of potential and productivity: a forest fire or an outbreak of parasitic honey mushrooms may spread rapidly through the woods. Inevitably, these are times of great uncertainty - and yet as connectedness breaks apart, conditions for fostering novelty and experimentation simultaneously arise. At this point, with materials and energy suddenly available in abundance, self-reorganization begins in earnest and the ability to adapt and respond to changing conditions is at a peak.² In this reorganization phase the system also displays an especially high degree of path dependence: accidental or opportunistic events can set the direction of the system's development for the coming cycle. As new relationships are rapidly formed the system arrives once again at the beginning of the loop, moving into another growth phase where this novel configuration will be tested and refined.

The adaptive cycle is not always readily apparent, particularly during a long, slow conservation phase wherein relationships appear stable, predictable, and timeless. In the Carolinian forests of North America's Great Lakes basin region, for example, my sister and I grew up playing under a canopy of lofty, whispering maples that were the elders of our world. Those forests seemed to us eternal, and the maples a collective sentience of the land itself. When I grew older and starting studying ecology, I came back to the woods with new eyes for change. I noted the tiny beech saplings flourishing under the tall maples while the maple keys

² This is assuming, of course, that enough energy and materials are present to facilitate reorganization; clear-cut logging and overfishing are examples of system shocks that can lead to permanent collapse, robbing the system as they do of huge amounts of biomass. This is known as the 'poverty trap' in panarchy theory – a scenario in which a system cannot enter a new adaptive cycle without input from the outside environment.

sprouted but fared poorly, and was suddenly able to see the forest journeying through a regime shift from one stable state, or attractor basin, to another – a centuries-long cycle of inhaling maples, exhaling beech. Yet ultimately this too was an incomplete story of how matter and energy flowed through form in those beautiful acres of Ontario woods. While the Carolinian maple-beech forest *is* an example of an ecosystem with alternating stable states, the forest community is anything but predictable. Historic farming practices, wildfires, climate change, periodic insect outbreaks, my family’s selective harvesting of fire wood – a whole host of factors were continually nudging and shifting the system’s processes, challenging its resilience and occasionally leading to complete and creative reorganization. What I had taken as a fixed world - and then a steadily oscillating one - was in fact a dance of perpetual, complex transformations occurring across all scales of time and space. The forest was a collection of elegant, experimental, evolving relationships in a state of continual becoming.

These processes of the adaptive cycle take place at different scales in the system, and multi-scale influences are also always occurring. Longer, slower cycles hold memory and stability that can be passed down to shorter, more quickly changing cycles when preservation or restoration is appropriate. More rapid, responsive cycles, on the other hand, can feed revolution and change up the line. Thus while the whole panarchy is composed of many interconnected adaptive cycles, so too does each adaptive cycle contain the essence of the entire panarchy. These systems nested within systems - creating, challenging, and maintaining each other within a flowing unity – compose the holon of panarchy.



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The front and back loop of each cycle together form a system of balanced and complimentary opposites: in journeys through growth to conservation, a system embodies maximum production and accumulation; through release and reorganization, it celebrates maximum invention and rearrangement. Holling and Gunderson note that “the two objectives cannot be maximized simultaneously; they can occur only sequentially. And the success in achieving one tends to set the stage for its opposite. The adaptive cycle therefore embraces the opposites of growth and stability on one hand, change and variety on the other” (47).

The infinity symbol depicting the adaptive cycle is therefore appropriate, as processes of change have no clear beginning or end. Each loop is both creative and conserving, while the whole panarchy represents both coalescence and dissolution across time and space.

Contemplating these interconnected cycles of conservation and change, we see that “the notion of a system is no longer tied to a specific spatial or spatio-temporal structure nor to a changing structure of particular components nor to sets of internal relations. Rather, a system now appears as a set of coherent, evolving, interactive processes which temporarily manifest in globally stable structures” (Jantsch, 1980: 6). Ontologically, as Jean Boulton points out, the emphasis is no longer on being but rather on becoming (2011: lecture). This calls to mind the classic Taoist Yin-Yang symbol, which depicts wholeness emerging from the flowing interplay of opposite qualities. These opposites – hot and cold, high and low, dry and wet, bright and dark, masculine and feminine, activity and passivity, birth and death – are each defined by their counterpoint, and also contain that counterpoint within as a kind of essence or potential.



Thus tight organization always holds the seed of its own unraveling, while in the midst of collapse new organization begins to stir. Henri Bortoft eloquently describes this pull within life towards change as a kind of “potency to become otherwise” (2010: lecture). In acknowledging this flow and this potency, how might our response to an uncertain future shift?

Social (R)Evolution

They were well oriented to creation’s design and consequently became set in their ways. They began to feel that the familiar pattern of their lives should go on forever. It was time for change, for transformation.

The design of creation had completed an important phase. One of the signs of the needs for such change may be the development of a resistance to change.

– Chief Richard Atleo (Umeek), on the Nuu-chah-nulth community before Raven brought the light

Historian and systems theorist Thomas Homer-Dixon explains that the 'tectonic stresses' underlying our global economy are now multiplied by the rising connectivity and speed of our societies (2006: 45). The future of business-as-usual urbanity is being rapidly undermined by the very conditions it has given rise to - air and water pollution, degenerative diseases, social alienation, homelessness, and climate change – while, concurrently, conditions are arising for a potential regime shift into more habitable, creative, and ecologically integrated communities. We understand that “consciousness and change differentiate human and organizational life from biological life,” (Kaplan, 1996: 22), and yet in a time of unprecedented socio-ecological instability and change, the deep, intrinsic connections between all living systems are more apparent and noteworthy than ever. Indeed, it is precisely *because* human nature is characterized by openness and potentiality that reflection on our participation in natural processes of adaptation is so important.

Ecology teaches us that time flows unevenly within systems; while the transition from growth to conservation is often slow, steady, and methodical, descent through the back end of the loop, from release to reorganization, can be sudden and dramatic. When this dissolving and reconstitution occurs, the importance of so-called 'redundancies' within systems, as well as memory held in slower, long-term cycles, comes to the forefront. “In ecosystems, for example, seed banks in soil, biotic heritages, and distant pioneer species are all critical accumulations from the past that are available for present renewal” (Gunderson et al., 2002: 20). We can expand this concept of refugia to the cultural realm; elders in our communities - especially post-colonial indigenous communities - who have retained knowledge, skills, and spiritual traditions from previous eras form a crucial link between past and future. Ethnoecologists now refer to these precious wisdom keepers as 'cultural refugia' – those who hold seeds for regeneration of both culture and nature (Turner, 2005: 220). We see that retaining the connections and relationships secreted in often-overlooked aspects within and between living systems is essential to maintaining flexibility and integrity in times of shift, upheaval, and uncertainty.

The cultivation of meaningful connections with those around us during periods of stability, then, cannot be under- estimated:

While the accumulated capital is sequestered for the growing, maturing ecosystem, it also represents a gradual increase in potential for other kinds of ecosystems and futures. For an economic or social system, the accumulating potential could as well be from the skills, networks of human relationships, and mutual trust that are incrementally developed and tested during the progression from [growth] to [conservation]. (Holling et al., 2000: 35)

The Transition Town model is based in large part on nourishing this accumulation of potential that rests hidden within the cracks and folds of the current social and economic regime. By emphasizing re-skilling, community building, and cooperative dialogue, and by drawing on the wisdom and stories of local elders, Transition groups are weaving a complex, diverse, and adaptable network of well-equipped change-makers in preparation for our collective movement from conservation to release and reorganization.³ It is increasingly clear that our challenge now is to conserve the ability to adapt to change, “to respond in a flexible way to uncertainty and surprises... maintaining options in order to buffer disturbances and to create novelty” (Holling et al., 2000: 32). Thus even more important than learning specific skills is our fostering a *capacity to learn* – the creation of a vibrant learning community (Dohnt, R., personal correspondence).

City Repair is another example of a rapidly spreading community-based localization movement which sees neighbourhood residents facilitating ‘placemaking’ projects – transformations of lifeless intersections, alleys, and abandoned lots into beautiful places to gather, play, discuss, and share. These projects are created with natural and recycled building materials and all-volunteer labour, and engage permaculture principles to honor interconnections of human communities and the natural world. Their ultimate aim, architect Mark Lakeman explains, is to coax wholeness from fragmentation:

Where our pathways come together so are our lives supposed to converge, but within the grid, that opportunity is obscured. Then suddenly you come into a place where convergence is accommodated, and things start to happen. *We almost cannot calculate or even track what those things might be or become...* To create a sense of place that unites four divided corners together sends a message that the world is whole, and that calls to our nature and sends us away with a message that makes us feel like we belong in the world. (Lakeman, 2009: Peak Moment interview, emphasis added).

Echoing Lakeman, systems theorist Jean Boulton reminds us that we cannot underestimate the capacity of small changes to effect large, apparently stable systems (2011: lecture). Creating places of belonging, diversity, and dialogue introduces new information into the urban matrix, allowing us to learn with each other by raising the most difficult and essential questions at the end of an era of conservation: what is worth saving? And what are we ready to release?

³ In his 2011 Schumacher lecture, Alex Haxeltine pointed out that when we speak of resilience we must always ask *resilience of what?* It is important to remember that resilience is a descriptive rather than a normative word. For example, the industrial growth model is in fact remarkably resilient, capable as it is of adapting, inventing, co-opting, or incorporating an astonishing range of scenarios, and yet this is no longer desirable for the majority of the world’s living systems.

Becoming

Chief Richard Atleo of the Nuu-chah-nulth community on the west coast of Vancouver Island tells a story about the creation of biodiversity by the transformer Aint-tin-mit. At this time, all the animals of the world were people like you and I. When they heard that Aint-tin-mit was coming to change them into animals, they decided they weren't willing to let go of their familiar form, and so started to make weapons to defend themselves against him. When Aint-tin-mit came across Deer sharpening seashells, he admired them heartily and then good-naturedly clapped the shells on Deer's head – they became antlers and Deer bounded away in the form we recognize today. Aint-tin-mit then complimented Raccoon on his fine war club before fixing it on his backside and turning him into the creature we now know as Raccoon. Atleo explains that "when Aint-tin-mit came back to earth to create biodiversity, there was a natural resistance to the threat of change. Just as the means of resistance employed then (the weapons made by Raccoon and Deer) were used to facilitate change, so too will the contemporary tools of resistance (language and scholarship) become the very means of change and transformation within indigenous societies" (Atleo, 2004: 133). What aspects of our current society will persist and facilitate our coming transformation? Certainly there are many, like the still-good threads Old Woman uses to set her loom after every visitation by her oldest friend of all, Black Dog.

We now know that holding onto a rigid way of being essentially worsens the effects of release when it finally, inevitably, does come round. We need only look to Egypt and Libya, or to our own increasingly pathological industrial growth society, to see the fallout of establishments' attempts to crush creativity, diversity, and change for far too long. By instead awakening to the ebb and flow of adaptive cycles, we open ourselves more fully to sensing what it is that yearns to come into being through us – to the pattern that enters our mind's eye when we kneel over the tangled threads of that which has fallen apart. As Hardin Tibbs points out, the future does not yet exist, but we carry within us the seeds of its becoming. This becoming unfolds in both our action and our *letting go*, in both our connection to ancient wisdom and our capacity to clear the slate and transform - to open our collective imagination as wide as the changing sky above us.

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