

Mingruifu Lin

## Emergence and Deep Ecology

I was in Canmore. Over the busy main street, there stood houses of logs among a supple layer of conifers, and beyond all these traffic lights and sidewalks and road signs stood majestic sunset mountains. This scene did not intrigue me at the time, but the juxtaposition of such landscapes one over the other will later reveal surprising beauty.

Shifting in spacetime, I was now beside Lake Contemplation. It's one of those lesser-known lakes, with very few visitors compared to Lake Louise or Moraine. The water was littered with giant stones that fell from the surrounding peaks. Sometimes, a fellow tourist would scream at the sight of a pebble that started rolling down the mountainside and splashed into the lake. Water bubbles, assuming their perfect spherical shape, would merge and annihilate each other in the aftermath like particles of matter and antimatter. Nature loves symmetry. How marvelous to think that it is precisely the three dimensions of space which induce this peculiar duality of matter!

I stared into the water. In the reflection, I admired the leaving zenith. Meanwhile, my sister had started escalating a tall boulder, her hat hardly being able to hold onto her head in the wind. In one hand, she held a flower, its petals slowly starting to disperse under her grasp. I looked up at the sine wave of bird cries and noticed the blue sky teeming with clouds. Symmetry is universal: everywhere I looked, I saw a reflection or two, or a thousand more back and forth. Once seen, they cannot be unseen.

For fun, I picked up a rock and threw it as high as I could, and it made a parabolic motion before landing in the middle of concentric ripples. Some creatures resembling tadpoles burst forth from the point of impact, before coming to a peaceful rest. I wondered how they managed to survive in this lake that was so saturated with remains of fallen branches and leaves. The sun also beamed down, as if it was ready to evaporate the entire lake. At that moment, in an access of empathy, it seemed as if within each of these organisms resided a pond, so unique as to never run dry. And I saw myself within. In my imagination, those bodies of water splashed and spilled about one other. Over time, they had evolved to become a colossal gem, where a gaze, no matter how powerful, would have simply and inevitably been lost in the complexity.

Long ago, Newton acquainted us with the concept of action-reaction, that one cannot act unless being acted upon correspondingly. This web of forces that permeates the world is indeed perceived at every scale, from the gargantuan whales trailing through blue ocean water to the microscopic pulling and twitching of our muscles. In the far distance of these endless differential equations, our muscles eventually affect these whales, but these are not the business of Deep Ecology, the latter very much preferring to admire the simpler idea of interrelatedness. As Haigh quotes Bertalanffy, “there is only one system”.

As I watched my sister climb each boulder with a frenetic fervor, I noticed the pines growing along the bank, made jagged by the dead tree trunks. Just like how ferns make leaves of leaves of leaves, the coast retains its detail and roughness no matter the magnification. Likewise, the tadpole-like fishes in Lake Contemplation reproduce into similar selves, which in turn reproduce into more similar selves. When, as such, a part of you gazes back, we call

it a *fractal*. It is the symmetry that the huge sees in the minuscule, it is a beauty only within another beauty. Surprisingly, the pines bore an opposite concept, and that's what caught my attention, more so that it was right beside the jagged bank. Metal blocks can fuse into bigger blocks and salt can amass into larger crystals, but life is vastly different.

Our family spent a long time along the shore of this unknown lake, nestled between the Rockies. Maybe it was because of its great contrast with the general majesty of the area, offering a strange place of respite and contemplation. After a while, when my little sister finally surmounted every boulder peak in existence, we left, reluctant but serene. Later, as I watched Canmore shrink on the horizon, my eyes went back to the Rockies. Although these gigantic monuments arose from the chaos of tectonics and the turbulence of magmatic convection, they pale in comparison to the intricacy of life. Life gains its spectacular value through *emergence*. Just like how Conway's cells must cooperate to become self-sustaining colonies, a single neuron can never gain the properties of a brain, and a single brain can never gain the complexity of society; the microscopic, the macroscopic, and everything in-between are all inequivalent and unpredictably linked. We have come up with procedural terrain generation, but one has yet to elucidate the entire human body, let alone understand the way these conscious actors evolve gregariously. It is precisely this asymmetry of the whole and the part that makes life special.

Deep Ecology is the realization that ecosystems are in a perpetual and complicated Nash equilibrium, which does not always favor every organism. In *Planet of Weeds*, David Quammen argues that weed-like species, perhaps humans included, will be the only survivors of climate change. In that future, weeds are happy creatures dwelling in the

outcome of mass extinctions. The importance is not that of any species in particular, but that of life in general, to leave seeds behind us in hopes of fruitful restoration. To humbly recede and put our trust in Nature is the essence of Gaia theory. As Haigh points out, “life creates a better environment for life itself”. Said differently, humanity must bow down to the myriad causes and effects brought by emergence. In a way, the shrinking village is a symbol of Gaia theory. It reminds us that our praised inventions are but a clumsy crutch. From time to time, let us set aside our feeble desire for control to give Nature a chance to exert its formidable intellect upon itself. Our brains are mere neurons in the grand scheme of things.