LEAD LIKE A LEAF

JOEL GLANZBERG

"Cells rely heavily on the code of DNA for development, but they also need a sense of place to do their work. Indeed, the code is utterly worthless without the cell's ability to determine its place in the overall organism, a feat that is accomplished by the elegant strategy of paying attention to one's neighbors. As [Matt] Ridley writes, 'the great beauty of embryo development, the bit that human beings find so hard to grasp, is that it is a totally decentralized process." (from Emergence by Steven Johnson)

ife is by nature creative. Unlike mechanical systems, this is how she di-solves her problems. She moves to new levels or worlds where the problems are no longer problems. This is at the core of leadership in living systems. There is no farseeing operator driving. Every member plays its unique role in moving the whole forward.

are all structured before they run. Like my son's body—all of our bodies for that matter—all living structures are built by doing what they have been created to do. His body was made by metabolizing nutrients, water and oxygen and moving around, just as it is today. The river was not dug and then filled with water. The river running made

Anyone who has ever played a team sport or in a band knows how this works. There is a unifying vision of what you are trying to do, where you are trying to go, and a clear sense of each player's essential roles within it. We carefully watch one another, looking for opportunities to set up or back up or capitalize upon our con-spiritors. We take our clues from one another, from our context in the working and playing of the whole, and from our own inner compass. It is not co-operation like the parts of a machine. The best bands and teams are driven by internal tensions and dynamics that drive each player beyond his or her known abilities to create something far greater than the sum of the parts.

Holding my baby son one night as he slept, I thought about how I would make his body. Having built things all my life, this seemed simple. I would begin by framing him up, joining his bones together using his muscles, tendons and ligaments. Then I'd run his arteries and veins, his nervous system, install all of his organs, sheath him is skin, fill him with blood, a bit of food and water and start him up, maybe with a spark from jumper cables. Of course he was made nothing like this, but this Frankensteinian thought experiment revealed my own mind's mechanicalness and the difference between how we think about and make things and how the living world creates.

Everything we make is conceived and constructed before it begins to carry out the processes for which it was designed. Our cars, homes, businesses, schools, programs



the river. The branching scaffold of the tree was not built before it carried water and nutrients up into the sky and sugars back down into the roots. The tree built its body by adding layer after layer of carbon taken from the sky through photosynthesizing, from the moment it put out leaves into the air and roots into the earth.

Manufacturing may need an overseer. Growing does not. To see, think about and work well with this living creation we are blessed to be members of, it is essential that we think not like an engineer and lead like a lieutenant, but think like a mountain and lead like a leaf.

Aldo Leopold, the father of restoration ecology and the National Wilderness System, worked as a cowboy in New



Spiral plant tendril on baby's hand

Mexico and Arizona as a young man. He tells a story of riding with a friend one day when they saw a large animal swimming across a stream. At first they mistook her for a deer until, climbing up the other bank, they saw a she-wolf being eagerly greeted by her yearling pups.

Being hunters, they had been taught the simple equation that "fewer predators would mean more game, and no predators would mean a hunter's paradise. So pulling their rifles from their scabbards they shot all of the wolves.

Arriving on the other side Leopold saw something in the dying wolf's eyes that changed his life—a "wild green fire" that taught him that every mountain lives in mortal terror of its deer herd and how to "Think Like a Mountain." Without the wolves chasing and eating the deer, the mountain would be eaten to the nub, the soils washed away, the rivers flooded and then parched by drought. All would starve, including the deer and the hunters.

We are so confounded by thinking about the living world in the terms of force, mass and velocity that even our prayers are confused. If the lion lies down with the lamb, it will not mean peace but the end of us all. Unless the lion plays his role, the sheep, like the untended deer, will starve us all.

Our ecological problems are not caused by humans being bad or not belonging, but because we are confused about our role and how we fit within the living of the whole. We are so accustomed to machines and the mechanical world of Newtonian Physics that we can barely think about how to address the problems of a living world. We try to fix them as we would our old truck: We identify the bad part that is to blame for the problem and *repair*, *replace*, or *remove* it. This is our general

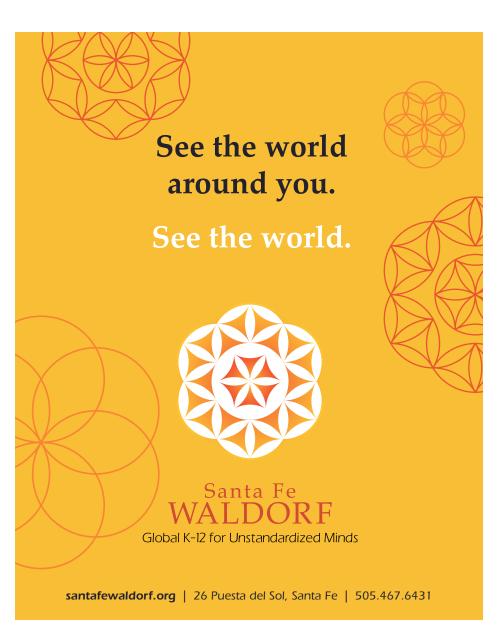
approach to everything from medicine to foreign policy and justice. We try to get tumors, dictators and other "bad guys" to reform or we replace them or simply take them out. We are continually surprised when new tumors, symptoms, or bad guys promptly arise to take their place. Changing the manifestation of living systems without shifting the underlying causal patterns will always be an uphill battle and often takes us in the wrong direction, like super-gluing the cracks in a hatching eggshell.

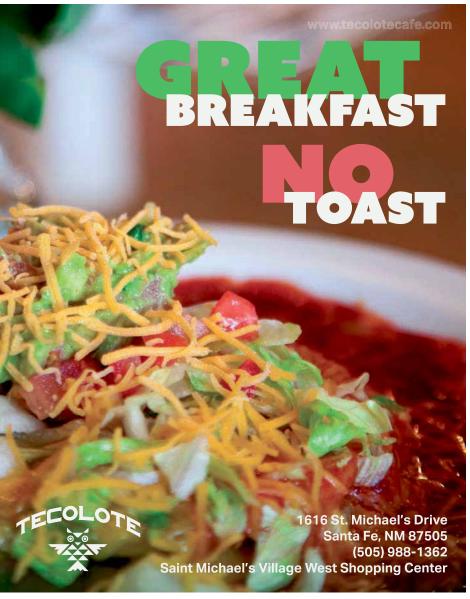
If the lion lies down with the lamb, it will not mean peace but the end of us all.

Our failures within this living world are always failures of imagination.

Life is by nature creative. She never goes back but only forward. Repair or restoration may work for antique chairs but not ecosystems, eggs or countries. They will never be what they once were, any more than you will ever be a teenager or Humpty Dumpty will be put together again.

Living systems, whether organisms or organizations, ecosystems or economic systems, resolve their problems not by "fixing" them but by outgrowing them. The maturing chick running out of food and space in her egg does not add on or send for take-out. She does not fix her cracking shell but uses this breakdown to break through and emerge into another world, one of air and light where her parents feed her. When the chick and her siblings outgrow the nest and their parents' ability to feed them, they fledge and fly into the wider world where they can feed themselves and migrate to CONTINUED ON PAGE 16





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more favorable climes as the seasons change.

The failure of the shell is no disaster. It marks the successful transit of a stage, a step, a layer.

In her remarkable book *Tending the Wild*, ethnobotanist Kat Anderson shows

how Native people of California provided for their food, fiber, shelter and energy in ways that increased the species diversity and productivity of their homelands. Unlike the story we are familiar with where humans destroy the land to live, they co-evolved richer and more complex ecosystems. It turns out this was true all over the planet and that this is

the role of human beings in living systems. Our tendency to disturb living systems is our gift, not our curse. We simply have not been focusing on it or using it well.

Throughout the world, humans have used ecological disturbance to evolve ecosystems. We have used fire, flooding, cutting, digging, gathering. The key is when, where and how much. Indigenous peoples in what is now known as the Northeastern U.S. used periodic burning to clear the forest floor of sticks and brush, encourage the straight young shoots that could be used for basket and arrows, take out the ticks and other insects, as well as kill the thin-barked beech and maple trees while encouraging the growth of nut trees like chestnut, oak, hickory, butternut and pecan. This fed not only them but also the deer, bear and turkey. The ash buffered the acidic pH of the soils as well as of the waters, helping the vast beds of shellfish in the bays to easily build their shells.

The same thing happens in the ecosystems of our minds. Disturbance opens cracks that allow sunlight into the forest floor where new worlds can emerge. Think of the Copernican Revolution, how seeing that the Earth was not the center of the universe led to the Renaissance, and the ending of the iron-fisted rule of the Roman Catholic Church and feudalism. This is why these forces fought so hard to patch these cracks that let the light in—they were the openings to a new world where they were not in charge.

Living systems regenerate themselves by transforming. A caterpillar does not get surgery to repair damaged skin or regain his youthful figure but pupates. His structure literally dissolves and a new one grows from imaginal cells to emerge as an unrecognizable creature. It is just like the way a plant moves from growing leaves to colorful flowers, moving from one stage of life to another not trying to reprise earlier highlights.



Rock formation near Moab, Utah

The genius of our ancestors was in seeing the potential in problems. Instead of ultrapasteurizing, packaging and refrigerating milk to prevent it from going bad they helped it transform into creamy Camembert. Spoiling grain became bread and beer. Frozen corn crops became chicos. The worst cut of the hog became bacon. Freezing water, where rolling into it would mean death led to the kayak, where the paddler could roll out as fast as he or she rolled in.

All of our inventions, other than machines, solved problems by seeing them as opportunities for transformation, as doorways to new worlds.

Climate change could be the best thing that has ever happened to us—if we can see it as an opportunity for transformation. We know that if we solve this symptom of our worldview without changing that worldview we will simply create another world-killing symptom. May this be the fire, the wild green fire that transforms our worldview, the crack that opens for us to emerge into another world where we humans can see and know how to lead and live as essential members of this living community.

Joel Glanzberg is an applied naturalist working to help people relearn how to see with nature's mind. Glanzberg is well known for his decades of work in Permaculture,



tracking, and Regenerative Design and Development. He lives in Pojoaque, N.M. with his wife and three children. Visit patternmind.com or regenesisgroup.com