

Leadership Inspired by Nature

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Why do we need Leadership Inspired by Nature?

If you are reading this, you probably intuit the answer to this question. As you know and have probably spoken and written about yourself, the earth is all that we have to work with. All of us – humans and the rest of the organisms in nature – have to learn to survive and thrive within the constraints of the earth or we will go extinct. It's really that simple.

All of the other species in nature, with small brains or even no brains at all, have created an immeasurable diversity of successful solutions and strategies and systems that are incredibly efficient and elegant and that have survived for almost 4 billion years.

Humans on the other hand -- with our very large brains and capacity for advanced thinking, our machines and factories, our computers and communication systems, our plans and programs -- have come up with some incredibly sophisticated inventions and business models and economic systems and governments and other organizations, but we are proving ourselves to be unsustainable.

For example, you have likely heard of peak oil, but I'm shocked by how many people have not. I'm even more shocked that the great majority of our leaders *have no plans at all* to deal with peak oil and the associated radical price spikes or extended flow stoppages and mass disruptions to our economy. Keep in mind that our food systems are completely dependent on oil, too, so disruptions to our oil supplies mean disruptions to our food supplies. And, of course, peak oil isn't the only resource limit that we are approaching (look up peak phosphorus). What is even more distressing is that our conventional leadership models and organizational structures are unable to handle radical, volatile, and unpredictable change.

In addition to volatility and disturbances caused by resource limitations, there are positive, yet equally radical, transformations created by rapidly emerging technologies. Mobile phones, laptops, digital cameras, the web, email, Google, Facebook, YouTube, Twitter, Flickr... you know the list. These technologies have given people -- "the people" -- incredible capacity for power that has only just begun to be released. We are seeing transformational shifts from corporate to consumer, from broadcast to broadband, from networks to networked. Again, conventional leadership models are largely incapable of responding to these sorts of transformations and the impacts (positive and negative)

that they have on our society, on our communities, and on the people and organizations that they lead.

That is because conventional leadership was borne from an older time when resources appeared to be abundant, when we were less concerned about human rights, when technology was simpler, and when communication was controllable. Conventional Leaders strive to make their organizations:

- Independent
- Competitive
- Controlled
- Stable
- Protected
- Maximizing
- Focused on ROI

Seeking to achieve these characteristics have served leaders well for centuries, but we now know that they have done a great disservice to the environment and to human rights. They have also done a disservice to you and me-- the workforce. The demoralizing, de-humanizing, soul-sucking culture of conventional business is so painfully familiar that we find great solace in shows like *The Office* and cartoons like *Dilbert*. No one deserves this kind of work life! Not you and not the people in the organizations that you lead. We have been led to believe that our leaders have created great Pillars of Industry, but in reality they have created castles made of sand.

The decade in which we are now living (2010-2020) has been dubbed the Decade of Fear, the Decade of Volatility, the Decade of Transparency, the Decade of Creative Destruction, and the Decade of Transformation. Whatever it is called, the message is clear: change is happening, it is volatile, it will be transformative, and conventional leadership models are unfit to handle it, unfit to lead into an era of sustainability.

What we need now, and into an era of sustainability, is what we are calling **Leadership Inspired by Nature**.

You know that nature is sustainable; nature *defines* sustainability. If we want to drive sustainability, be sustainable, lead ourselves into an era of sustainability, we must re-align ourselves with nature, re-join the positive virtuous cycles of nature. We must let go of the ways of the past that are no longer fit for purpose, let go of conventional assumptions, let go of conventional business and leadership models, and become Leaders Inspired by Nature.

Natural Leaders recognize, embrace, and leverage resource limitations, emerging technologies, rapid change and volatility. Natural Leaders are driven by ecological thinking, learn from successful leadership models in nature, are grounded in Nature's Principles, and even use tools that, too, can be learned from nature.

Ecological Thinking for Radical Transformation

We've already noted that radical change – both good and bad – has happened, is happening, and will continue to happen on numerous fronts into the foreseeable future. In addition to resource limitations and rapidly emerging disruptive technologies, we are experiencing climate change, political upheavals, and economic instability – all of which are causing radical change. We cannot deal with all these radical changes by making numerous incremental changes to conventional approaches. It is just not enough—not near enough.

To deal with the radical changes we are facing, and with the radical changes that we need in order to achieve an era of sustainability, we need nothing less than radical transformation. Unfortunately, most leaders do not get this and conventional leadership models simple do not allow it.

Most of us know that somehow we are supposed to be applying systems thinking to everything that we do. But no matter how bright you are, most people have a really hard time getting our heads around systems, especially when what we are really supposed to be thinking about are *dynamic* systems and *systems of systems*. It seems far too complex and mathematical to be practical.

The conventional approach –the approach taken by conventional leaders– is to pretend that our systems are limited, static or steady-state, and controllable. This actually used to be fairly effective, when communication technologies were limited, when things happened more slowly and predictably, and when many resources appeared to be abundant.

A typical example is the supply chain. An example supply chain might flow from the source of raw materials through manufacturing, transportation, sales, and finally to the consumer. (Actually, there are more links on the disposal end that we should be included but are usually ignored.) In a linear one-way supply chain, the only interaction the consumer has with the systems is chain is with the last link in the chain.

If you apply systems thinking, that supply chain would turn into a dynamic value-creating network, where all participants are interconnected and can communicate and exchange information freely. This system allows the sharing of ideas, co-creativity, adaptability, resilience, and the radically creative thinking that we need in an era of sustainability. We are beginning to see this in the form of open sourcing and where companies are appealing directly to consumers for new ideas and solutions.

So how do we get our heads around systems thinking? Luckily, help can be found in your own backyard. Nature is composed of systems - dynamic systems, and systems of systems, at every scale in time and space. That is what ecosystems are made of and how they work. If you observe and understand how and why ecosystems work in nature, then you can apply what you learn to your organizations to create sustainable, dynamic, resilient, adaptable systems.

This is easier than you think because you, as an organism, and we, as a species, are part of nature. We have evolved to live as active participants in numerous complex dynamic networks of ecosystems in nature. Ecological thinking is hardwired into our DNA. You already “get it” – you simply need to remember.

Leadership Models in Nature

Our language around leadership is usually associated with the military and sports, but it is also full of references to nature – although sometimes those references aren’t quite correct or complete. For example we’ve all heard or used expressions like “pecking order”, “dog eat dog”, “leader of the pack”, or “king of the jungle”. This sort of language implies that nature is dominated by a top-down leadership style based on competition, constantly striving to increase your ranking within the group – at the expense of others – and always fighting for the lead position. But if you think about it, fighting is expensive and generates losers in the group as well as winners. Successful species simply cannot afford to waste limited energy and resources constantly fighting.

Top-down leadership models certainly do exist in nature, but there are a range of other models out there, too. Let’s take a look at some different models of leadership that can be found in nature. The four that we will consider here are hierarchies, heterarchies, swarms, and ‘roots and shoots’.

Hierarchies

Hierarchies are the top-down model of leadership that most of us are familiar with and what most of our organizations follow. In hierarchies, there is always one dominant leader that everyone is supposed to follow. There is also a top-down leadership structure within the rest of the group. In hierarchies in nature, leadership is constantly tested and reinforced to be sure that the most appropriate or fit member is leading and that the others follow that leader.

In wolf packs, for example, there is constant interaction among the members of the pack that helps maintain the optimal leadership sequence at all times for the benefit of the group. If the current leader becomes unfit for purpose, it will be rapidly revealed and he will be replaced by a more appropriate leader. However, what appears to be violent behavior within the pack is often theatrical – teeth that are bared but don’t bite, submissive positions are assumed - not forced.

When does hierarchical leadership work in nature?

It works when groups must act decisively and rapidly as a coordinated group in situations where not all members can have full and timely access to information, and when sticking to a pre-set plan is not possible. Imagine wolves hunting in a pack.

However, even in groups, like wolf packs, that appear to operate as hierarchies, don’t function that way all the time. When top-down leadership is not needed, members of the pack adopt other leadership models that are more appropriate for the given conditions or situation.

When does hierarchical leadership work best in humans systems? The three classic examples are the military, emergency response, and sports teams. In each case, action has to be taken rapidly and decisively, in response to rapidly changing and unpredictable conditions, where not all members have full or timely access to information, yet all need to act as a coordinated group.

Top-down hierarchies with a powerful leader may also have the capacity to create change rapidly throughout an organization.

Why aren't hierarchies appropriate in all situations? Hierarchies do not leverage or optimize the full capacity, the richness, and the uniqueness of each and every individual in the organization. Hierarchies control flows of information and resources and thus inhibit cross-pollination and slow responsiveness, particularly at the local level. Hierarchies tend stifle new ideas, creativity, and innovative thinking that could emerge from a diversity of individuals interacting within the organization.

Heterarchies

We've all seen geese or other birds flying in the V formation. This is an example of heterarchy. Clearly there is one leader – the goose out front – but the geese take turns being the leader. In a heterarchy, there is always one leader, but no one individual is capable of effectively leading all the time, so different members of the group take turns being the leader, so that an appropriate individual is leading at all times under the given circumstances.

In the V-formation, the one out front is doing more work than the others and will eventually need someone with more strength to take over so that he or she can rest. Also, during long migrations, no one goose knows the whole journey and the lead goose has to know the way. The idea is that, at any given time, the goose in the lead position has the needed knowledge and strength, and no one goose has all the needed knowledge and strength to lead all the time.

Note, that heterarchies are not about fairness or equality or giving everyone a chance. With geese, for example, only a subset of the flock takes turns being the leader-- some geese are never the leader.

When are heterarchies applicable in our organizations? Heterarchies work well when different leadership skills are needed at different times within a project, or at different places within an organization. For example, you may work on a project composed of several very different stages --such as conceptualization, ideation, design, implementation, marketing, etc. -- and it is likely that no one person has sufficient breadth and depth of skills to optimally lead every stage, yet among your team you are likely have individuals that are ideal to lead each stage. Some people may be suited to lead more than one stage and others may not be suited to lead any of the stages.

Note that you can have heterarchies within hierarchies. In project example, one person might be leading or overseeing the whole project while allowing different individuals to lead individual steps.

Swarms

Swarms and flocks and schools are examples of organizations in nature that have no leader at all. (In a beehive, the Queen bee lays all the eggs, but does have a leadership role.) In this organizational structure, the group is full of feedback loops which allow each individual, and the group as a whole, to be agile and responsive, seamlessly functioning as a collective whole. Some of these groups work so well together that they are called “super organisms”, meaning the collective intelligence of the swarm or hive makes it function as if it is a single organism.

To make this work, each individual is highly aware of its surroundings, constantly sensing and then sending, receiving, and responding appropriately to information gathered and shared with the group. This leaderless structure works when everyone has the same very clear goals and when everyone always follows a few simple rules (often in the form of ‘if this, then that’).

Swarms work well in human systems when there is a strong, clear, common goal; when all individuals have to or are naturally inclined to follow all non-negotiable rules. A good example is traffic. Since we all agree follow the same set of the rules at all times, large numbers of people we are able to operate very large machines at relatively high speeds within feet or even inches of one another and generally assume that we will get to where we want to go safely – all with no leader.

They also work when it doesn’t matter *how* something gets from A to B, as long as we trust that it *will* get from A to B when and where and with the characteristics needed. In our project example, with the hierarchy and the heterarchy, individuals or sub-groups can be sent off without a leader to complete specific project tasks on their own in any way that suits them best.

Conversely, swarms don’t work when these conditions are not present, for example in traffic, the military, emergency response and sports teams examples. Swarms tend to fall apart, too, when individuals in the group *think* they all have a common goal and are all following the same set of rules, but that isn’t actually the case. Swarms also tend to fall apart beyond a critical size – beehives, for example, break apart when the physical and/or organizational structure becomes too big to act as a cohesive whole.

Swarms structures are also good for constantly learning about and responding to changes in the environment. They can allow for free flow of communication, information and resources, and thus also allow for faster learning and responsivity. They can allow for creative innovative thinking by individuals and groups, optimizing the uniqueness of

individuals within the framework of the group. Swarms are also nice because they don't have to support the infrastructure required by a leader, thus saving resources.

As with heterarchies, you can have swarms operating within a hierarchical project or organizational structure.

Roots and Shoots

The Roots and Shoots model is one that you don't normally think of as leadership, but is quite relevant to leaders in sustainability. To understand how this model works, let's look at some examples from nature.

We've all seen lichen growing in seemingly inhospitable places where nothing else has yet to be able to grow, such as on bare rocks. Here, the lichen represents the leader of an entire ecosystem, apparently creating something out of nothing, and creating conditions that will allow other life to follow.

Lichen can do this through a complete synergy (a mutualistic symbiosis) between algae and fungi. The algae are able to convert energy from the sun into food for itself and the fungi. The fungi protect the algae from dehydration and capture mineral nutrients. Together they make it possible for both to live where neither could survive alone. Note that each of these organisms can live independently, where conditions are favorable. Lichen must compete with higher plant species for sunlight so only survive where bigger plants cannot.

Complete dependent synergies might be the answer in situations where it is impossible to survive as an independent, and where with the synergy the partners can, together, thrive where nothing else can. This model may not (or no longer) work where conditions become favorable (perhaps because of your initial work) for other more established ideas, projects, or businesses.

As sustainability leaders, sometimes you have to work between a metaphorical "rock and a hard place", in conditions that are not hospitable to sustainable ideas, where you have to create something out of nothing, create conditions that allow the era of sustainability to follow and flourish. Emulating the synergy of lichen may help you when you are out there leading your cause, leading sustainability efforts where none yet exist.

Like the lichen, seeds can also be leaders, leading the life of the new plant, perhaps leading the establishment of its species – or even plant life in general – in a new location. In most cases, the seed will stay dormant for as long as necessary, and is equipped with 'sensors' that signal it to spout only when and where conditions are hospitable. From the seed emerge the first shoots and roots – the leaders of that particular plant.

How is the seed able to do this? It uses a combination of strategies. It has a protective shell that only opens when conditions are right for germination, and carries sufficient

food within itself so as to survive until the roots and shoots can establish and start bringing in resources from the outside world.

The seed, roots, and shoots model requires a 'parent' to generate the seed and to launch it into new territory. The seed must be self-protecting and know when it is time to open up and become active. This seed must be also equipped with sufficient resources to self-sustain until the new roots and shoots can emerge and begin bringing in new resources. There must, too, be roots AND shoots –not one or the other.

As sustainable leaders you have, embedded in your hearts and minds, the seeds of how things could be. Your ideas about sustainability need to sprout and take root – sometimes where no similar ideas exist and where there is initially no support.

As with the other leadership models, you can have roots and shoots working within or in conjunction with other leadership models and structures. Some swarms and hierarchies, for example, will send out one or a few explorers to seek out new territories or food sources.

Nature's Principles

In this discussion of Natural Leadership and Leadership models in Nature, you've been reading some of the same words over and over again. That is because Leadership Inspired by Nature is grounded in what we call Nature's Principles.

If any of you are familiar with Biomimicry for Design, you may have learned about Life's Principles. BCI has adapted Life's Principles to be more applicable to leadership and organizations and we renamed them Nature's Principles to be in keeping with our 'Inspired by Nature' foundation. There are just six Nature's Principles and, like Nature itself, are all interdependent and interconnected.

- **Resilience** is the ability to recover from a disturbance. A business inspired by nature leverages disturbance as an opportunity, rather than trying to protect against change.
- **Optimizing** is in contrast to the conventional minimizing or maximizing, and includes it means fitting form to function.
- **Adaptive** means constantly sensing and responding to the world around you, being flexible and continually moving towards positive outcomes.
- **Systems-based** is what we described as ecological thinking, and includes integrating synergies into everything you do.
- **Values-based** is about knowing what is truly important to you as a human, as part of nature, and as part of your business, and always acting in accordance with those values.
- **Life Supporting** means working as an active and beneficial part of the cycles of nature.

A Leader Inspired by Nature is grounded in these principles and applies them to everything he or she does and throughout the organization. Interestingly, by following and practicing Nature's Principles you will also help unleash the radical creative thinking that is needed to lead us into the era of sustainability.

What does a leader grounded in Nature's Principles look like as compared to the conventional leader? A Leader Inspired by Nature seeks synergies rather than independence; fosters collaboration rather than strictly competition; leverages collective intelligence rather than forcing top-down decisions; learns to be open source rather than closes source; optimizes across the many and across the system rather than maximizes for the few; seeks return on engagement rather than return on investment; thinks and works in dynamic systems rather than in static linear chains; creates organizations that fit form to function rather than expecting people to function within a rigid pre-set form; considers the very long term while addressing the very short term; favors emergence over sticking to pre-set plans; seeks to be effective, not just efficient.

Our old conventional leadership and business models are no longer working. As leaders in a sustainable era, Leaders Inspired by Nature, you will need to foster radical new thinking, creativity and co-creativity and cross-pollination, responsivity and adaptability, and a sense of greater purpose and humanity and joy in work.

In order to achieve the era of sustainability, we need leaders to create a radical new vision – an incredibly beautiful and compelling vision -- of what 'sustainability' means to us. We need leaders that are grounded in Nature's Principles and that strive to re-integrate our organizations into the positive virtuous cycles of nature. We need leaders that foster radically different ways of interacting, communicating, collaborating, and co-creating. We need leaders that create conditions that allow all of us to fully deploy our creativity, where we are tolerant and empathetic and respectful of each other and the rest of nature. And we can learn how to do all of this from nature, using our own human nature to apply ecological thinking to achieve radical transformation into an era of sustainability. This is what **Leadership Inspired by Nature** is all about.