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THE UNPLANNED ORGANIZATION: LEARNING FROM NATURE'S EMERGENT CREATIVITY

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In my work with large organizations, one of the questions we often ask is, "How would we work differently if we really understood that we are truly self-organizing?" The first thing we recognize is that, just like individuals, the organizations we create have a natural tendency to change, to develop. This is completely counter to the current mantra of organizational life: "People resist change. People fear change. People hate change." Instead, in a self-organizing world, we see change as a power, a presence, a capacity, that is available. It's part of the way the world works -- a spontaneous movement toward new forms of order, new patterns of creativity.

We live in a world that is self-organizing. Life is capable of creating patterns and structures and organization all the time, without conscious rational direction, planning, or control, all of the things that many of us have grown up loving. This realization is having a profound impact on our beliefs about the nature of processing interpersonal relations, in business organizations, as well as in nature itself. In this article, I will focus on some of the recent shifts in our understanding of the way things change.

Three images have changed my life -- one, a picture of a chemical reaction, another, a termite tower in Australia, and a third, an aspen grove in my new home state of Utah. Each image in its own way represents a profound shift in my understanding about the nature of change in organizations. I will explain their significance later, but first I want to discuss eight tenets of what I call "unplanned organization", inspired by these images.

We live in a world in which life wants to happen.

This is a simple, though profound, realization. You might not think it is such a remarkable notion, but we grew up in a culture influenced by Darwinian evolutionary theory which said life was an accident. Now, if life is an accident, that means there is nothing here to support us; so we do it all alone, and if we don't get it right, we get killed because the world is an inhospitable place. I believe this kind of thinking led to the heroic image of the great corporate leader who

would craft organizations and make things happen -- nothing would happen without this great impetus of human ingenuity and human control.

We used to believe that for the first seven-eighths of the planet's existence there was no life, that it showed up about 600 million years ago. Now scientists agree that life seems to have emerged almost instantaneously with the creation of the planet. This is a very important realization. For me, this means that I belong to a whole planetary community of life, and that I am supported in my own small efforts by a deep natural history spanning between four and five billion years -- life wants to happen as a community and we are all part of it.

Organizations are living systems, or at least the people in them are living systems.

I sometimes feel embarrassed to point this out because it seems so obvious. We're moving away from a terribly deadening image of who we are and how we should organize. The image of the world as a machine that came into our consciousness in the seventeenth century was a wonderful metaphor that then went out of control. Ultimately, we came to believe not only that the world is a machine but that people can best be understood as machines.

One of the interesting things I learned recently is that since about 1850 we have described our brains in terms of our current technology. So, in the middle of the nineteenth century brains were thought of as hydraulic pumps. Then they were thought of as telegraph systems, then as telephone switchboards, and now we're up to neural nets. But these are all technological machine metaphors for understanding ourselves.

When we say that organizations or people are living systems, we're saying that, unlike machines, people have intelligence. Again, this is not a profound thought, except we've strayed so far from it. People are capable of change, whereas machines have no capacity to change apart from their programs or designs devised by some smart engineers. Machines have no intelligence. They're created for specific tolerances. It is stultifying to think about life this way, and yet this way of thinking is so deeply embedded in our culture that it's going to take a while to think otherwise.

We live in a universe that is alive, creative, and experimenting all the time to discover what's possible.

This is my favorite realization. We see this at all levels of scale, whether we're looking at the smallest microbes or looking out into the galaxies. We live in a world which is constantly exploring what's possible, finding new combinations not struggling to survive, but playing, tinkering, to find what's possible.

People are intelligent. We're creative, we're adaptive, we seek order, we seek meaning in our lives. When we really start to understand this, when we really start to change our perception of who people are, then it changes how we think about organizing.

It is the natural tendency of life to organize -- to seek greater levels of complexity and diversity.

One of my own beliefs, inspired by different readings, is that everywhere you look you see that life is system-seeking. We are rediscovering our interconnectedness; there are no isolated individuals in the natural world. Life seeks to affiliate with other life, and as it does that it makes more possibilities available, it makes more diversity possible. I believe (and this is just my own

perspective right now) that the reason life seeks to organize is so that it can explore its diversity, so that it can explore its creative potential. It doesn't seek to organize to protect itself, to defend itself -- that seems to me a 300-year-old Western conceptual overlay.

I think life seeks systems because systems allow more diversity, they allow individuals to thrive, and they give each of us (when we're in a healthy functioning system) more freedom to experiment with what we want to be as long as we remain conscious of our connections to the whole of the system. To repeat: Life is self-organizing. It seeks to create patterns, structures, organization, without pre-planned directive leadership.

Life uses messes to get to well-ordered solutions.

Life is incredibly messy. We could even say it is unbelievably wasteful. But shift perspective and judgments, and what at first glance what may appear to be messy and inefficient may actually be life experimenting -- discovering what is possible. If you have ever tried to create an aquarium, you'll know how messy that can be. You keep trying to put in new life forms and hoping that the whole will suddenly take hold as a system. Then your fish die. But if you keep messing around, sooner or later the aquarium takes as a system, and sustains itself.

This is a recurring phenomenon in the re-creation of eco-systems. Scientists say it takes a lot of messes to finally discover what works. But underneath is the realization that all of those messes are tending toward the discovery of a form of organization that will work for multiple species. Life uses messes, but the direction is always toward organization; it's always toward order.

Life is intent on finding what works, not what's right.

I find this very liberating. This is where playfulness can enter into our own human relationships in a different way, because the task of the moment, of any moment, is to find something that works, but not be so ego-attached to it that we believe it is the only solution, the only right answer. How many relationships split up because of arguments about who is right? Yet when you look around, you see life tinkering, experimenting, playing, as if to say, "If it works, fine; and if it doesn't work, let's see if we can find a way that does work." For me it's a different sensibility, and it creates a much greater sense of playfulness in my own work.

Life creates more possibilities as it engages with opportunities.

A phrase I often hear used in business is that life -- or some project, or the market -- presents a "narrow window of opportunity". This is not true. Systems don't work that way. Every time we try to make something work, we are creating more possibilities within the system -- we open many different "windows of opportunity". If a particular opportunity is not fulfilled, there are always many others to engage with. Each path of opportunity leads to its own pattern of order. It may be unpredictable, but life is attracted to order. It is the nature of natural systems.

Life organizes around identity.

Out of all of this blooming, buzzing confusion of life, how do we decide to pay attention to certain things, or to make sense of certain things? We look for information that is meaningful to us in some way, given who we think we are.

Someone once asked me, "What's the 'self' that gets organized in 'self-organizing'?" These two words are equally important. Life organizes spontaneously and creatively, but it organizes

around a self. It is making self. For me, this feels like further evidence that consciousness is at work in everything because you can't organize around a self without being conscious that you are a self. So when we see self-organization, I believe what we're watching is consciousness forming itself into different identifiable beings.

Thus, we live in a world which is truly co-creative, in which you and I cannot exist in isolation. Richard Lewontin, a geneticist whose work I admire greatly, once said that "environment" is a strange concept because we talk about it as if it exists independently of us. We even talk of "saving the environment". He said that the environment is an organized set of relationships between individuals. We're constantly affecting one another, constantly being changed by the process of being in relationship with one another by our choices. For those of us who have tried to save the world, I think this is a humbling thought. There's nothing out there to save. There is a lot to be engaged with.

Beyond the Machine Image

This brings me to the three images that have changed my life. The first is a chemical process called the Belousov-Zhabotinsky (B-Z) reaction. We've known about its existence in Western culture, particularly in Russia, since the 1940s. It was so revolutionary to scientific thinking that its existence was denied for a long time.

This wonderful little chemical reaction is saying that the universe is not all "downhill". This is contrary to the Second Law of Thermodynamics, which says that the natural tendency of any system is to run down from a state of order to disorder, from energy to entropy. The Second Law says that with every change you give up useful energy, and you have no way of recouping it, so you fall into a state of entropy -- where all you can do is wait for death and disorder to overtake you. Someone recently defined the Second Law as "You can't win, and you can't get out of the game." That's a terrible burden on our Western way of thinking.

Yet what these surprising little chemicals showed is that there is a self-organizing capacity in matter. When confronted with turbulence and change, it's not all downhill. For example, in the B-Z reaction, red and white chemicals had blended in perfect equilibrium. The next discernible state for this system, given the traditions of Western science, was that it would disintegrate, or at best remain in disordered equilibrium. In fact, when scientists added chemicals, stirred it up, lit a flame under it, and poked a hot wire into it -- a lot of change if you're a chemical -- what happened was that the system separated out into its constituent chemical groups, red and white, and instead of falling apart and dissipating, the chemicals restructured themselves. Beyond dissipation, there was spontaneous reorganization -- self-organization.

This is quite startling because what these inert, (allegedly) unconscious chemicals created were intricate spirals. How do you explain this if these chemicals, which are supposedly dead, are not communicating, if they're not conscious in some way? Many scientists disagree with this attribution of consciousness, but they all agree that the B-Z reaction is a stunning image of the self-organizing capacity of our world.

What this says to me is that when confronted with change, you and I have a choice between two options, and we are not doomed to an inevitable course of action as the old belief system would have had us believe. The old myth was that we would disappear, that we would die, that

we would dissipate -- and that would be the end of it. But the new recognition of a self-organizing world tells us that we can use any period of chaos and dissipation to reorganize ourselves to a structure better suited to the environment.

The whole quest to understand the world of self-organizing is really a quest to realize that there is a deeper, more elemental force at work behind the structures we see. What cause is behind the patterns of organization we see in the world -- where organization occurs without directive leaders or planning? What deeper elemental force gives rise to it all? The answer, it appears, is that behind the organizing patterns we recognize as life is self-organizational spontaneous capacity to generate pattern and organization from within. And this, of course, is one way of defining consciousness.

According to Fritjof Capra, who is publishing a new book on self-organization, we've had four or five billion years of experience with this; this is how life discovered the possibility of creating more and more life. So there is this deep, elemental capacity for organizing in all of us. Knowing this, when we see resistance to change - and we certainly see a lot of that these days -- we can understand what's happening in a different way. It seems to me that resistance always reflects the need of each of us to understand who we are in the moment -- our identity. When we see a change being forced on us, we recognize it as threatening our sense of self. Resistance reflects our need to protect our sense of dignity and identity as presently defined. Resistance does not represent a fundamental tendency toward inertia, which is the old belief about human nature.

If you start to think about this for a while, and you're engaged in a change process or a change strategy, this alters the way you relate to change. If identity is a key issue, then it seems to me inescapable that we involve people from the start in whatever the change is going to be. Then they have the chance to reorganize their own sense of identity to fit the changed reality. You can't change people, but people change all the time. That's who we are.

Realizing that we live in a self-organizing world is to recognize that so much more is available for us as groups, as organizations, as communities. So much more is available to us in the form of a naturally occurring energy -- the self-organizing capacity we all have. We have to learn how to engage it, how to evoke it.

Termite Towers and Leaderless Groups

And so to life-changing image number two: a termite tower on the Australian savanna. The one I have a picture of is about 20 feet high, so if you think of the size of the termite, these are the tallest structures on Earth, relative to the size of their builders. A particularly interesting one is called a "magnetic tower" because the termites always build it on a north-south axis. The interior is a very complex structure. It has tunnels and arches. Their function is to move air into a darkened interior where it is cooler, because even though termites live in hot places they don't do well with heat. The nests are also designed to move moisture in so the termites can farm a form of fungi they require for digestion. These are very sophisticated structures.

Entomologists who study termites looked at these for years, and, recognizing a very complex structure, wondered, "Where's the leader? Where's the engineer? Where's the brains behind this operation?" The search for a leader was a long and futile quest. What is interesting is that

the leaderless phenomenon wasn't even pointed out until some women started critiquing the history of science, and came up with the stunning realization that there didn't have to be a leader.

Termite colonies are examples of a wonderful self-organizing process, and can be highly instructive about human endeavor as well. For instance, individual termites are capable only of digging dirt piles. They don't do anything sophisticated. This is true of most social insects. If you think of the hive as a brain, and the social relations as a mind, individual termites are like single neurons. Isolated, they barely have any significance. But as a coordinated group they perform like a hive-mind. Like neurons, they emit chemicals for communication. Termites emit scents that attract other termites. They are constantly aware of what's going on in their environment; they're very tuned in. They wander at will, bump up against one another, and then they respond.

I think this is an excellent maxim for organizational life. You wander at will, you bump up against one another, and you respond. But you're developing so much more consciousness of what's going on in your environment, and you're tuned to so much more information than we have allowed people in those "org. chart" disasters.

So after a certain number of termites collect, their behavior shifts, emerging into something with an entirely new capacity, and they start building their towers. A group of termites over here will start an arch, another group over there will notice it, and they'll start the other side of the arch. Spontaneously, it meets in the middle, and there was no engineer present.

Termites build towers only because the "self" they're organizing around is very clear to them. But the way in which they create elaborate complex structure is in the moment. Entomologist Edward O. Wilson compared it to dynamic programming in computers: You do something, you notice its effect, you do the next thing. This is a view of life beyond conventional strategic plans, planners, goals, objectives, and Myers-Briggs tests. Let me explain that last remark: Myers-Briggs is a system for assessment of psychological types. It's a way of understanding who you are, how you take in information, how you thrive. Like all such tests, it is focused on individuals -- when we're just out there digging dirt piles, so to speak.

But as far as I can tell, right now, none of our personality assessors or indicators let us know who or what we are capable of being when we are in community with one another. I believe it is a travesty to think we can understand ourselves or another human being independent of being in a relationship with them. And one of the wonderful things the termites show is that we live in a world that has emergent properties, which means that when a group is together it is capable of behaviors that simply are not knowable when you study the individuals. It doesn't matter how well, how deeply, or how long you study the individuals, you would never see the potential for the tower in the individual termite. I think this is true of human behavior as well. So why do we spend so much time trying to understand our self (little s), since that self changes -- whole new capacities come forward in us -- when we are together in our communities?

The reason I think this is so problematic for us is that you cannot plan; you can only watch once you're in the process of being together. You can only notice what's happening, and then tinker with it. Instead of creating dream teams, you just get into the process of organizing and see what emerges. That feels unplanned, it looks messy, it smacks us in the face; it goes

against all the ways we have been taught to be effective leaders, or effective individuals. In contemporary society, we've gone crazy with goal-setting and planning and thinking about our lives in a linear progression.

We would do well to learn from the termites. There is a lot of wisdom available in the study of emergent behavior. And it is available only because we live in a world which is self-organizing. We live in a world in which, when we come together, we can discover new possibilities. And we live in a world in which the discovery of new possibilities is, I believe, the reason for existing.

This says something about organizing activities that I want to stress. If you think of life as a network, then you don't have bottoms or tops. Emergent solutions can come from anywhere, but they are always very situational, always highly contextual, and therefore they're going to be quite variable, and always unplanned.

I also want to emphasize that emergent organizations are leader-full, not leaderless. Leaders emerge and recede as needed. Leadership is a series of behaviors rather than a role for heroes.

Aspen Trees and Hidden Connectedness

I recently learned from my son's fifth grade teacher that the largest known living organism on the planet lives in Utah, where we now live. My son got excited and thought it was Bigfoot, but it's not. It's a grove of aspen trees that cover thousands of acres. When we look at them, we think, "Oh, look at all the trees." When botanists looked underground they said, "Oh, look at this system, it's all one. This is one organism." You see, when aspen trees propagate, they don't send out seeds or cones, they send out runners, and a runner runs for the light (there's wonderful imagery in all of this), and we say, "Aha! There's another tree . . ." until we look underground, and we see that it is all one vast connection.

Before I was aware of the Utah aspens, I used to think that the Michigan mushroom, which covered 37 acres, was the largest organism. What was interesting about that was when mycologists looked at these mushrooms they couldn't figure out how they survived, because they didn't have all the "functionality" they needed to be healthy mushrooms. When they looked underground they found the answer -- it was just one large organism.

In a self-organizing world, one of the things that works on our behalf is not only that we have a natural tendency toward change, that we can constantly reorganize, or that we can structure ourselves without leaders (as long as we're well connected and informed and focused) but that, underneath it all, what we're doing is discovering our connections.

One of the great teachings in chaos theory is that a very slight twitch in a connective system will create convulsions elsewhere. I'm sure you've had a negative version of this experience in which you made an offhand comment to somebody, and later it blew up in your face. Whereas you may have presented your life's work, thinking it was the greatest gift to humankind, others just looked at it and said, "Well, that's very nice, dear."

Biologist Francisco Varela has said that you cannot direct a living system, you can only disturb

it. In a system, the most we can do, when we are trying to serve, is to contribute a little twitch, be a little disturbance. One of the great things about living systems is that not only can they not be leveraged, they cannot be directed. You cannot tell another human being or a human organization what to do and expect it to do it. Yet this is not a lesson we have learned. It has been in our faces all our lives -- especially if you're a parent of a teenager (actually it starts much younger, with two-year-olds) that we can't direct living things.

If we really start to sense the self-organizing capacity that is around us, we could realize that our efforts to foster change or to midwife change -- not to manage change -- have much support.

In my own work, I'm trying to feel more playful about it, and to take away some of the drama -- "If we don't get it right now, we're all going to perish." I believe that's a true statement, but it doesn't help me play with life the way I want to, the way in which I see life playing with us. I would like us just to be more experimental. We are not looking for the solutions, we're just seeing what works for this system, with a deep respect for its interconnections. When it doesn't work, we move on and try something else, and when it works, we feel very blessed.

This article was adapted from a talk by Margaret Wheatley, "The Heart of Organization", at IONS' fourth annual conference, "Open Heart, Open Mind" in San Diego, California, July 1995.



ABOUT MARGARET (MEG) WHEATLEY, Ed.D.

Margaret Wheatley writes, speaks, and teaches how we can accomplish our work, sustain our relationships, and willingly step forward to serve in this troubled time. She is co-founder and President emerita of The Berkana Institute, an organizational consultant since 1973, a global citizen since her youth, and a prolific writer. She has authored eight books. Her numerous articles may be downloaded free at her web site: margaretwheatley.com. For more biographical information, see margaretwheatley.com/bio