

Organizations of the future are based on ecological principles

A new type of organization emerges

In 'Reinventing Organisations' Frederic Laloux describes a new type of organization. These new organizations work differently and as a result of that are more flexible. Some of the secrets of their concept is self-organization and holding an evolutionary perspective. Laloux talks about "*Organisations as living systems*". I very much appreciate his book!

Another type of organization that seems to emerge at the same time is the pop-up company. Pop-ups (stores, hotels e.g.) occupy temporarily empty spaces (like an empty building) and use social media to reach out to their consumers. They do as nature would do: cleverly making use of what is already available. They grow big when possible yet they can shrink again if necessary. Agile and flexible.



Pop-up store in The Netherlands

A new order

I consider 'organisations as living systems' and 'pop-ups' as the evolutionary step towards a more ecological order. An 'order' away from hierarchical organizations that are not agile enough to meet today's dynamics. Being agile is what is needed in our diverse society today. A society that is on the one hand more local (local food, energy cooperation) and on the other hand more global (web shops, big data). This new order or generation of organizations seems to be an ecological order where competition makes place for co-creation and where clever organizations act agile. This requires new types of leadership and a new role for governmental bodies. A new government that also takes up the role of facilitating instead of just being the guardian of rules and legislation.

To enhance the transition towards this new order it can be really helpful to turn to nature for more organizational ideas and models. We only have to go outside and get inspired by practical and beautiful examples!

Inspiration from ecosystems

Ecosystems are complex and dynamic systems that are changing constantly in response to their changing environment. An ecosystem moves towards an equilibrium without the intent of reaching an equilibrium (a 'dynamic equilibrium'). The whole purpose is to sustain and survive and that means

moving along with the rhythm of our planet (day-night, low and high tide, summer and winter). It also means taking the planetary boundaries into account (limited resources) and using what is available.

Animals basically focus on three major issues in their lives: food, safety and reproduction. This requires respecting relations (with food, with allies, with each other) and will take place in a certain setting. The setting (context) contains biotic and a-biotic factors which can vary over time and space. Consider e.g. humidity, temperature, PH, food competitors, individuals of same species. This may sound easy but it's not. Ecosystems are complex systems in terms of interactions. You can imagine that the same type of complexity exists in organisations or human communities.

What are successful patterns in natural ecosystems? Can we build on these patterns for building successful human organizations? The good news is that we can indeed find patterns of interactions in ecosystems that are useful to design of our new ecological society. Clever interactions and enhanced relationships are only a few of these rich lessons.

On my trip through the Namibian desert this year it struck me that there are so many strategies in nature to cope the very dry circumstances of that desert. There is the Namibian beetle that stands on his head in order to capture some morning fog. His body of hydrophilic and hydrophobic bumps and hole is designed to do the job. An ancient plant with only two fluffy leaves (Welwitschia) has a root as a trunk root that goes 1,5 meter deep. It's only mature after 20 years. The plant survives by adjusting to the circumstances including adjusting to the pace of life to the cycles of the desert.



An odd plant maybe (Welwitschia) but perfectly fit for the circumstances it lives in.

Dealing with limited resources, like water or alternatively money, personnel or other resources is a challenge to a lot of our communities. We tend to focus on complement the shortage. Nature tends to adjust to the given circumstances in very creative ways! And in most cases this adjusting in nature requires less energy.

We need to rethink some of our strategies but learning from nature doesn't mean we have to copy animal behaviour. Let's make this clear; we are not bees in a beehive but what could be interesting is to consider the way bees make collective decisions.

Biomimicry

The word Biomimicry comes from the Greek word *bios* (life) and the Latin word *mimesis* (emulate). Biomimicry is emulating nature's time-tested patterns and strategies. It is an approach to innovation that seeks sustainable solutions to human challenges by looking at 3.8 billion years of research and development in nature.

Biomimicry 3.8 revealed six principle strategies for life. These are called the '*life's principles*' and they form the basis of every design in nature. They can be used for our design challenges too. Physical and also organizational design. Applying these principles doesn't give you the cheapest design but it will ensure you that it is a successful and sustainable design.

The most important lessons for organizations

Nature does not have jobs for change managers. Nevertheless, adapting to changing conditions is part of what nature does all the time. I think that this ability of being in sync with the environment is one of the most fascinating qualities of the natural world. According to the experts in the field of 'Biomimicry for social innovation' there are three domains from ecology that are most relevant for organizations:

- *context* (the characteristics of the environment you operate in)
- *relationships* (the nature of interactions within the organization and with the outside world)
- *change* (and responding to the changes around you)

In other words, nature can be a source of inspiration for our dealing with the changing business- or social context. Nature can be an inspiration source for building new types of relationships and let's turn to nature to find inspiration on how to build in resilience and flexibility into the systems that we create. This will make it much easier to go with the social, political and economic flow. Below are some examples in those three domains.

Context: Monitoring your business environment

In fall, deciduous trees in most area's shed their leaves. It is getting colder and that means that taking up water is more difficult. A lot of leave surface then form a real risk for dehydration. But how do trees know that it is fall or that fall is coming? Is that capacity in their genes?

Trees monitor their environment for factors that are important for their survival. They monitor two factors that are the most trustworthy: length of the day (hours of light) and temperature. If temperature drop to a critical threshold and once simultaneously hours of light over the day shorten, they start shedding their leaves. The interaction of stimulus and response between environmental

factors and tree is called a *feedback loop*. All plants and animals are continuously using feedback loops because it's of life's importance to monitor changes in the context they live in and how they respond to that. Lower temperature will make mammals and birds put up their fur or feathers and create an air filled layer for isolation around their body.

What about using feedback loops in businesses? Would it not be important to be aware of changes in client behaviour? Or to know how clients respond to new products on the market? From experience we know that personnel that is being informed about the yearly revenue of the company as well as the satisfaction of the clients perform better than personnel that is only informed about satisfaction of the client. Just asking the question what the most important feedback loops for your organization are will increase your awareness. In our turbulent economic and social environment it might be of great value to take this ecological perspective.

Relationships: Cooperation above competition

Although all nature documentaries make us believe differently, more than 90% of nature's relationships are focussed on cooperation (mutualism) and only less than 10% of the relationships focus on competition. And in the case of competition relations are more about avoidance of competition than about actually being involved in a competitive relationship. From a forest around the corner nearby to the African Savanna, nature focusses on establishing collaboration. This focus saves a lot of energy and helps you to survive. It is fascinating how two species with very different interests over their evolution have found each other. Of course: what one species is lacking, the other species will have. Shelter in return for safety. Food in return of health. Biologists call this mutualism. Here are some examples.

Fungi in a forest soil take care of communication between the roots of different trees. Even over long distances. The fungi are connected to the roots of trees which they provide with water and minerals. In return they get nutrients (sugars) from the trees. Bumblebees enjoy the nectar of flowers in return for pollinating and both species are well adapted to adequately do the job. The flowers are cleverly designed to drop some of their pollen onto the bumblebee. The pollen will stick to the bumblebee's hairy body and legs. Other flowers count on a visit from a pollen carrying insect and are able to take some pollen of their body and legs. Their lives and success depend on each other. There are so many examples!



A bumblebee pollinates a flower in exchange of nectar. A nice example of co-creation.

A nice example of cooperation based on nature's principles is that of a mushroom farm and a restaurant chain. Coffee dregs is an ideal substrate to grow mushrooms and in return of the restaurant's coffee residue mushrooms are delivered to the restaurant. Also, the collaboration between a major Dutch forest organization (delivering nature gadgets) and a retail chain (excess to a big target group) is a nice example of mutualism.

Change: always 'ready to move...'

A landslide or a fire in a forest looks devastating, but visiting this spot after some years might surprise you. The clearance is gone as if it was never there. The forest ecosystem has started growing herbs, shrubs and even trees all over. Nature has the ability to recover in a magnificent way!

Change is the most constant factor in nature and taking change into account is probably one of nature's most important values. But how to establish that? By always take care of having your stockpile available. Stock in terms of (bio)diversity for example. Because more different species means more food sources or more ways to distribute seeds. If one of these relations fail you might not be in trouble. . Does your organization think that way? Do you think of diversity as the foundation of you being resilient?

Another way to ensure flexibility in design is to focus on optimization instead of maximizations. 'Living life to the max' is not nature's way of doing things. Growing as big as you can or having maximum offspring will make you weak and vulnerable.

Nature is being effective but is not being as efficient as possible! That is just not the way to survive the unpredictable.

And isn't this the main lesson for our organizations?

Specialized companies who were used to focus on profit maximizations have sometimes found out the hard way. In a changing environment you need to secure flexibility by offering different products or services. Being successful on the long run is not about short term profits but it's all about long term success.



New organizations (business and non-profit organizations) are based and values and teams take time to discuss them.

Let's reinvent!

Nature as inspiration for the design of organizations is in my perspective an approach that fits today's challenges. Biomimicry can help to make the transition towards a more ecological, natural way of collaborate, do business and look after our common goods. [Biomimicry 3.8](#), the thought leaders in

the field of applying nature's genius to our human challenges, have developed the Biomimicry Thinking methods. This provides tools like the 'Biomimicry Design Lens'. You can use this tool to find answers for concrete design questions. Also answers for designing an organisation, for leadership issues and team diversity. Basically it's about asking the question: How does nature..... ? Together with a specialist in biology or biomimicry you will do the research that enhances your performance. I have designed an approach for an integrated overall picture of your organisation through an ecological lens. The three mentioned domains (relations, context and change) will be addressed. You can start where you want to start, it could either be your team or the context of your organizations. I have successfully used this approach (*Nature-Wise*)

Nature is our field of expertise but applying nature to organizational questions and team building was totally new for us. With Biomimicry Bowine Wijffels has helped us to get more insight on where we can improve collaboration and communication in our team and to overcome our personal differences. The films made it even funny to do. If nature can do it, we certainly can do it too. Thank you, we have made a huge step forward!

*Liesbeth Bronkhorst – Stad & Natuur
(Almere, The Netherlands).*



Do you have any questions or do you want to know more about some parts of the mentioned methods, feel free to contact me!

Bowine Wijffels – Cailin Partners

www.nature-wise.nl ([English page](#))

Member of the international network '[Biomimicry for Social Innovation](#)'

Associate BiomimicryNL (www.biomimicrynl.org)

b.wijffels@cailin.nl

bowine@biomimicrynl.org

+31(0)6 51204682

