COMPLEXITY·FIT

Cultivating Complexity Fitness

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”We need to go beyond an intellectual understanding of complexity, to an embodied, lived complexity.” - Edgar Morin

Every day we are faced with many different decisions. Sometimes, these are pretty easy, for example what you would like to have for dinner tonight. Other times, they can be more complicated and we need to consult with an expert to help us sort through the options. For example creating a healthy eating plan, choosing a second hand car to buy or deciding on the best school to send your children to. In all of these examples we either had all the information we needed to make the decision, or we knew what we didn't know but also where to find out. We can think about these as technical problems. And a key here is that they can be solved. In fact human beings are pretty good at problem-solving and decision-making when they are dealing with a finite number of variables that are connected in predictable and familiar ways.

Nowadays though, more often than not we are faced with situations where there are too many variables to keep track of, most of them are dynamic and some are hidden. In short, we don't know what we don't know. In these conditions, we need to make mundane and well as high-stakes decisions without having the information we need. Often we also have no idea where to find answers, and sometimes it might feel like you don't even know what the right question is to ask.

At work, some of these may look like … “how do we retain our customers in a market that has become extremely commoditised?” Or, “how do we maintain wellbeing AND high productivity at the same time?” Or “how do we create a product or solve a problem for end users who don't know what they want?” Or, “how do we change a toxic work culture or disengaged workforce?”

All of these examples involve dealing with unknown or even unknowable unknowns. These kinds of adaptive challenges usually involve many variables that are dynamically tangled together – connected in ways we don't understand and can't fully map. To be able to deal with these effectively, people are being called upon to bring their creativity, imagination and tenacity to bear on these challenges. As machines become more “intelligent”, most of the routine and predictable work can be taken over by algorithms. When it comes to complexity though, no machine can beat human sense-making, but only if we are complexity fit.

Developing contextual intelligence: what is complexity and how is it different from complicatedness?

“Decision-makers commonly mistake complex systems for simply complicated ones and look for solutions without realizing that ‘learning to dance’ with a complex system is definitely different from ‘solving’ the problems arising from it”. – Roberto Poli

Why is it important to know the difference between complex and complicated? As long as we believe that we are dealing with complicated, predictable systems and technical problems, we will assume that we can control outcomes; find permanent solutions to problems and waste a lot of time and resources looking for the right “answers”. This can be frustrating and also lead to unnecessary conflict and delays.

“For every complex problem, there is a simple solution that is elegant, easy to understand and wrong” – H. L. Mencken

So what is complexity? We can start by looking at the meaning of the root word. Plex means woven or braided together, I like the word tangled. Complexity arises from interconnectivity and rich interaction. We tend to believe that complexity is just a higher order of complicatedness or difficulty. The reality is that we are actually dealing with completely different kinds of systems and therefore very different kinds of challenges. Complex

and complicated systems are as different from each other as a zoo is from a jungle. The skills you need to navigate, manage and survive in a jungles, is quite different from those you need in a zoo.

Roberto Poli articulates the difference between complicated and complex as follows: Complicated problems originate from causes that can be individually distinguished; they can be addressed piece by piece; for each input to the system there is a proportionate output; the relevant systems can be controlled and the problems they present admit permanent solutions.

On the other hand, complex problems and systems result from networks of multiple interacting causes that cannot be individually distinguished; must be addressed as entire systems, that is they cannot be addressed in a piecemeal way; they are such that small inputs may result in disproportionate effects; the problems they present cannot be solved once and for ever, but require to be systematically managed and typically any intervention merges into new problems as a result of the interventions dealing with them; and the relevant systems cannot be controlled – the best one can do is to influence them, or learn to "dance with them" as Donella Meadows rightly said.

From A Note on the Difference Between Complicated and Complex Social Systems, Roberto Poli, 2013

Thankfully, complexity is not completely unfamiliar to us. The family you grew up in, the traffic you navigate, the garden you nurture, ecosystems like a game reserve or national park where you go on safari … these are all examples of complex systems … and you already know how to navigate them successfully. The challenge is that we have come to believe that we can create ordered, structured and predictable situations in systems such as work environments that simply do not abide by the same rules. In a way, what you need to do is get

back in touch with the innate human skills you've had since childhood and re-learn how to bring these into your work context.

Let's go deeper into what complexity is, why it matters and what complexity fitness means by looking at some of the differences between a zoo and a natural ecosystem like a jungle or forest.

Categories & ordered connections vs messy tangles

Modern day zoos are very sophisticated spaces where scientists work hard to simulate ecosystems. However, in order to make these systems manageable and controllable, they are highly ordered, closed systems. Usually there are different sections for different kinds of animals… so you have the primate section where the monkeys and baboons live, the predator section, the reptile section and so on. Or there might be enclosures simulating certain environments like a forest or savanna enclosure. Creating separation between categories and limiting the interdepencies are helpful because they make things easier to manage, regulate and navigate. We see these same categories in our organisations with functional silos. The problem is that our markets and customers don't care about our categories, they are jungle dwellers.

In an eco-system like a jungle, forest or the African bushveld, animals and plants don't live according to our categories. Ecosystems are richly entangled "webs of life". There are all kinds of co-evolutionary relationships between animals and plants, and animals and other animals. Think of symbiotes (mutually beneficial relationships) or predator/prey relationships or the fascinating trail of nutrients that overlap and mingle from soil, to plant to animal and back again. It is the rich variety and interdependence that makes an ecosystem "fit" or resilient. Zoos might be safer for some animals and easier to navigate and manage because of the way they are structured, but they aren't very resilient. Any zoo managing team will point out that recreating ecosystems to maintain and support animal health is immensely challenging. Complexity is inherently messy, filled with variety, interdepence and surprise. Complex adaptive systems are resilient because of this messiness and redundancies. For our organisations to become more resilient, we need to broaden our thinking beyond categories, linear interactions and alignment, to that of embracing diversity and messy coherence.

Predictable or knowable vs emergent

Some zoos have been around for a long time, like the Tiergarten Schönbrunn in Vienna, the oldest zoo in the world, that was built in 1752 and is still in operation today. Zoos are ordered and efficient environments that play a key role in the conservation of rare animal species. Order is created by constraints that are put in place and maintained. For example, enclosure boundaries or cage designs keep species from mingling; climate control systems maintain optimal conditions for animals from different habitats; food quality is controlled as are feeding cadences. Specialist veterinarians and zoologists care for the animals, and breeding programs are highly specialised to ensure gene pools are maintained. Opening and closing times; pathways to follow and clear rules create a mostly predictable and controllable environment for visitors. All of these constraints create a complicated, ordered system that makes it possible to more easily diagnose and solve problems. It also means that solutions and approaches from one zoo can be transferred and or adapted using either good or in some cases best practices from one to another.

A zoo context is largely knowable and equal to the sum of its parts. You can create a map of the entire zoo. Experts can understand the needs of each of the animals and make sure they are well cared for. In a zoo, things are mostly predictable, for management, animals and visitors alike.

An ecosystem on the other hand is an open system that is not equal to the sum of its parts. Ecosystems have emergent properties, we cannot understand them simply by studying the "parts", and if we try to reduce it to its parts, we will destroy it. In a conservation area like the Kruger National Park or Yellowstone, there are no fences between species. Animals are at the mercy of the elements and natural processes like predator-prey dynamics. Conservationists and ecologists do manage these environments, but their approaches are very different.

Human systems also have emergent properties. Consider two banks, located only two city blocks away from each other. They employ people with more or less similar skills and demographics and offer similar products to similar customers … but when you ask employees about their experience working there, you will hear very different stories. This is because culture is an emergent property of a complex social system … you can't understand it or explain it by looking at the parts that make up the system. The same is true for teams. Every team is unique, every company is unique, every family is unique and every city is unique. In essence every social system is unique. So we can never assume that we know what is going on, and we also need to understand that one-size does not fit all. A method, approach or solution what works in one company, may not work in another. A person who underperformed in one team may outperform in another. We need to honor each unique context, be a keen observer, approach it with curiosity, and be open to learning and adapting as needed.

Linear cause & effect vs non-linear ripple effects

In an ordered and controlled environment like a zoo, we can generally predict the outcome of our actions. Complicated systems have linear cause and effect relationships, input and output are directly related. Changes also tend to have contained impact, so if I improve the layout of the lion enclosure, it does not make any difference to the primate enclosure on the other side of the zoo.

Not so in the jungle. In the wild, very small changes can have disproportionate effects. Also, these effects are not localised or easily contained. In this world, because things are tangled together in ways we cannot fully understand if we make a small change in one part of the system, we could trigger unexpected changes in a completely different part of the system. These unintended consequences can be negative and cause system-wide ripples that can be hard to contain. Or they can be positive, but not necessarily easy to replicate.

While many of the contexts we find ourselves in are complex and therefore non-linear, most of our tools and methods, and if we are honest, our ways of thinking are still linear. For example, most change management methods assume that change will progress in a linear, predictable sequence, while we all know change is messy. Agile methods emerged because linear project management methods were not appropriate for fast-changing environments. However most of those are also still linear. We need new ways of thinking and new tools to be effective in a non-linear world. There are many more differences between these contexts, and for those of you who are interested to dive more deeply into them there are links at the end of this document.

The most important difference between these two contexts, between the jungle and the zoo, is what it asks of us. Zoos are relatively easy to navigate, when we visit a zoo, we typically know what to expect and what is expected of us. We may experience some stress, but in general this is a place where we feel comfortable. To be in the messy and unpredictable context of a jungle, where risk or opportunity can emerge at any moment, asks a lot more from us. We can never afford to become complacent, we need to be present and cultivate situational awareness and an understanding that at any moment the context may shift, and a solution that worked yesterday may not work today. This also means that we need to embrace rather than resist impermanence, and accept change and adaptation as "normal" or at the very least expected. Change and flow means life, stagnation on the other hand brings death.

We need inner capacity to be fit for this context. To be constantly mindful and present to what is happening in and around us can be exhausting and having to learn, unlearn and relearn continuously whilst sitting in the

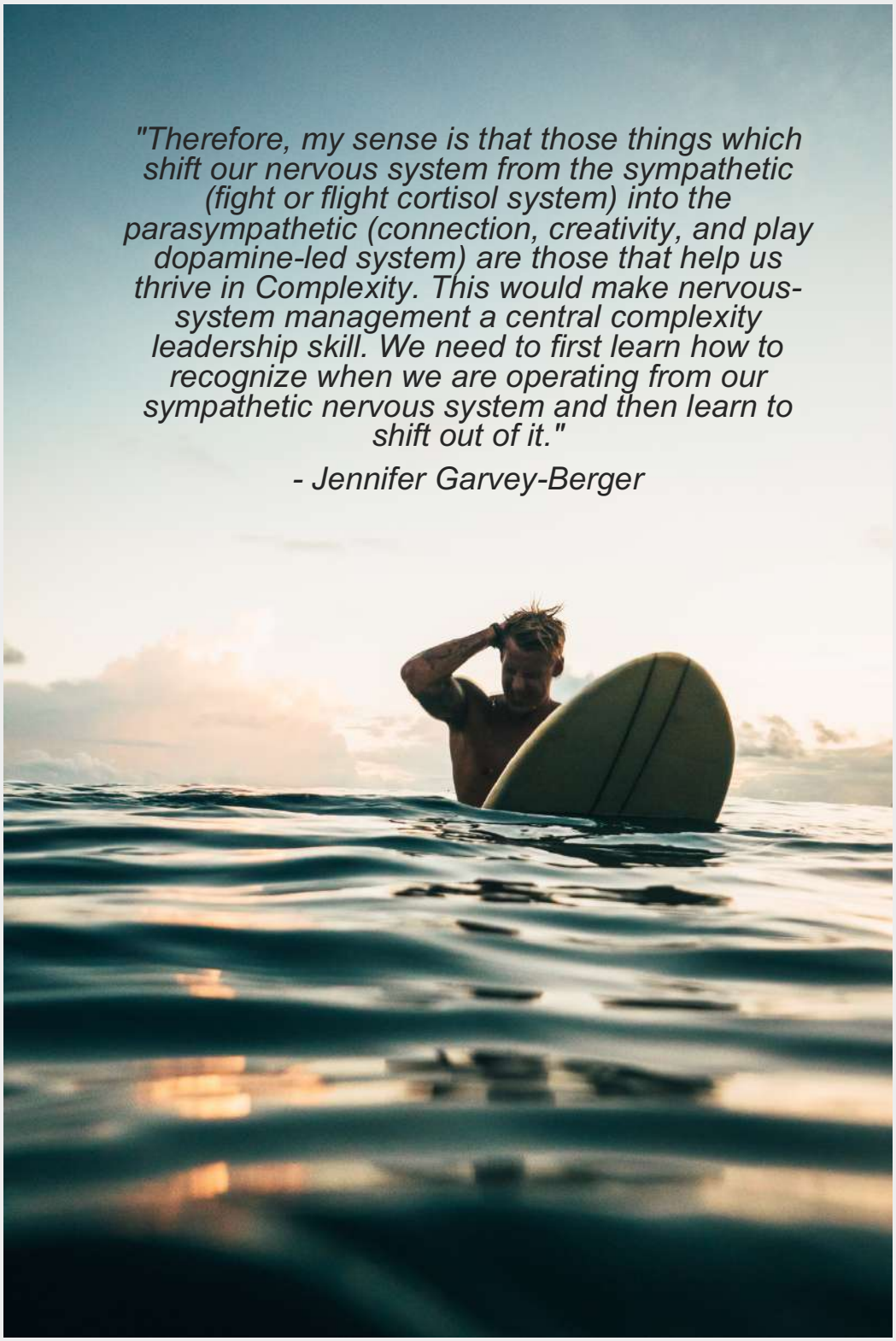
ambiguity of questions and "unknowing" can make us extremely anxious, especially because most of us have been taught from a young age that knowing and having answers are what matters.

Some principles to keep in mind …

- Context matters.
- There are no universally applicable tools or solutions – what matters is being fit-for-context..
- Complex systems are dynamic and always evolving and thus we need to be too.
- You need to prioritise refreshing your capacity and energy to remain present, aware and adaptive.

Mindfulness is a key practice that we all need to cultivate as part of our complexity-fitness regimen.

While complexity and uncertainty are not new, we are not used to the layered and perpetual uncertainty we are dealing with in current times. Even before the COVID-19 pandemic hit, many of us were already feeling overwhelmed with the speed of change and the onslaught of information. In business contexts, decision-makers face dwindling revenues, anxious employees needing to cope with remote working and job insecurity, evolving business models, volatile markets, and increasing socio-political instabilites. More than ever, it has become critical to develop a new kind of fitness to retain our ability to think clearly and respond appropriately even while we are experiencing fear and anxiety when confronted with the unknown.



Meta-skills for complexity fitness

Complex adaptive systems are inherently uncertain, and while it may seem overwhelming at times, we do intuitively know how to navigate this complexity. Families, cities, traffic – these are all complex systems. The problem is we tend to forget those skills in when we are in work contexts or in our professional identities. Also, our decisions have much higher stakes in a world facing a pandemic, social unrest, and potentially existential threats like climate change.

In such a high-stakes, volatile context, we need a strong inner core, just like a surfer needs strong core muscles to be able to ride big waves as well as the ability to choose which are not fit to ride. Over the years in our work with clients, we have found four meta-skills that help build this strong core for complexity fitness.

be **Courageous** – facing the unknown requires courage. We need to feel the anxiety and move towards and into the unknown despite how it makes us feel.

be **Open** – Complexity requires continuous learning and adaptation. We need to be open to unlearning and learning; we need to engage with curiosity rather than rigidity or judgment, and to diverse perspectives and difference despite parts of ourselves diagreeing with what is being said.

be keen **Observers** – of patterns, of moments, of movement. Complexity requires situational, self, and other awareness. Notice and honor multiple perspectives, zoom into the micro and out to the macro; zoom into your internal world, and out again. Notice with curiosity, not judgment – practice seeing with new eyes.

show up with **Lightness** – Complexity, and emergence imply perpetual novelty. We can see this as an adventure and continuous discovery or as something that provokes anxiety. Being on the edge of not knowing means we will fail; it also means we need to reconnect to our innate skills of imagination and playfulness. We need to hold our plans, views, and egos lightly and connect with beauty and humor and humanity.

"When the playful me shows up, I am ready to be a serious learner … a culture of playfulness I closely related to the capacity to learn." – Rosemary Sutcliff

Want to learn more about these ideas?

Seven differences between complicated and complex - http://www.morebeyond.co.za/7-differences-between-complex-and-complicated-systems/

Seven characteristics of complex systems - http://www.morebeyond.co.za/7-characteristics-of-complex-systems/

Seven implications of complexity for organisations - http://www.morebeyond.co.za/7-implications-of-complexity-for-organisations/

What can I do to become more effective in navigating complexity? http://www.morebeyond.co.za/navigate-complexity-three-habits-of-mind/

Contact us to find out more about our virtual self-paced Complexity Fitness curriculum.

https://www.complexityfit.com

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