

# To Unlock Life's Mysteries, Use the Scientific Keys to Thriving

**By Wayne Visser**

How does the world really work? How does nature function? How do societies change? How do economies rise and fall? These are questions that have led me to a lifetime of enquiry and a career in sustainability. After more than 30 years of wrestling and wrangling with theories and practices, I still don't have all the answers, but I do have a map with clues to where the treasure is buried. The treasure is thriving – the ways in which nature can regenerate, societies can flourish, and economies can prosper. The clues are six scientific keys to unlock the mystery of how life not only survives, but also thrives.

The six keys to thriving are based on the modern science of living systems, which in turn has grown out of centuries of intellectual enquiry, including the science of Leonardo da Vinci, organismic biology, the theory of holism, cybernetics, tektology, general systems theory, synergetics, complexity theory, chaos theory, fractal geometry, autopoiesis, and social systems theory. As a result, today we have a much better understanding of how nature and societies work as dynamic, living systems. Now it is time to put this knowledge into practice.

The first key to thriving is **complexity**. This refers to the networks and patterns of relationships in living systems. It is all about interconnectivity. The more connections there are between parts in a system, the more complex it is. In complex systems, whether in nature, society or the economy, small causes can have large effects. Think of Greta Thunberg and the Climate Strike movement. Also, local causes often have non-local effects. A plastic-eating bacteria discovered at a recycling plant in Japan could help tackle the global plastic pollution problem.

The second key to thriving is **circularity**. In nature we see that everything operates in cycles. We have big cycles like the water cycle or the carbon cycle, and we have small cycles like the life cycle of plants or animals. In circular systems, there is essentially no waste. The residual materials from one process become nutrients for another process. Waste becomes food. To align with this principle, we need to change from our current linear economy (take, make, use, waste) to a circular economy (borrow, make, use, return). With less than 10% of the world's production and consumption circular today, we have some way to go.

The third key to thriving is **creativity**. In complex living systems, we get emergence of unexpected behaviours. This creativity is what drives adaptation and evolution. It's what species do to survive and thrive. The most important enabler for creativity is diversity. Novel combinations of different elements of a system, by chance or by design, produces cross-fertilisation and hybrids. In society and organisations, diversity

of all kinds (gender, ethnicity, knowledge, abilities, etc.) will decrease the chances of “group think” and increase the likelihood of finding creative solutions to problems.

The fourth key to thriving is **coherence**. Every system has a central function or organising purpose. In nature, this is often encoded through DNA or guided by the tendency towards dynamic equilibrium, but in society and organisations, we can be more deliberate. Our cultural values, societal goals and purpose in organisations provide the glue that is necessary for a system to function. Research suggests that if there is a shared purpose among 5% to 25% in a group where others are acting incoherently, it is enough to move the rest of the group in the same direction.

The fifth key to thriving is convergence. This is one of least understood and most underestimated principles of complex systems. In simple terms, it is what happens when certain trends or actions reinforce one another, resulting in accelerated change in the system. Scientists call these positive feedback loops, and they are what often lead to tipping points, where widespread change happens very quickly. Today, we have convergence between global risks, policy reforms, technology innovations, financial investment, market opportunities, and social movements.

The sixth and final key to thriving is continuity. All life is designed to perpetuate itself, either through strategies for individual survival, or ensuring the collective continues, for example as a species, organisation, city or country. Here, the important thing to focus on are strategies for resilience (how to survive shocks and catastrophes) and long-term thinking (having goals stretching decades or even generations ahead). Research by McKinsey & Co shows that long term-oriented companies outperform others in earnings, revenue, market capitalisation and job creation.

These six scientific keys can serve as thriving tests for any decision or action that is proposed. Does it increase connectivity, networks, and relationships? Does it create circular material, energy, and knowledge flows? Does it increase diversity and foster innovation? Does it align with a compelling and inspiring purpose? Does it reinforce and accelerate positive trends? Does it increase resilience and a long-term perspective? Together, these keys will unlock the regeneration of nature, society, and the economy, which is the real treasure of life.

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Dr Wayne Visser is a globally recognized Cambridge academic, poet, possibilist and author of 41 books, including *Thriving: The Breakthrough Movement to Regenerate Nature, Society, and the Economy* (Fast Company Press, 2022). To find out more about his work and writing, visit [www.waynevisser.com](http://www.waynevisser.com)

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