

FROM FUTURE THINKING TO FUTURE WILLING

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THE FUTURE IS FOUND IN THE PAST

The world is non-linear

We live in a society that is constantly in motion. Economic, ecological and social developments follow each other at a rapid pace and confront us with far-reaching challenges: climate change, biodiversity loss, a growing housing shortage, socioeconomic inequality and increasing geopolitical tensions. These issues are complex and urgent. They are also interconnected, and can reinforce one another. The result is a reality that is difficult to oversee and even more difficult to steer.

Many people feel that the world is changing faster than we can understand it or respond to it meaningfully. Policymakers and public administrators are in the middle of this dynamic. They face problems that cannot be solved easily through traditional policy instruments or linear ways of thinking. These are so-called wicked problems: issues without a clear cause or single solution, involving many interests and perspectives.

Because these challenges cannot be viewed as isolated incidents, they require a fundamental reconsideration of how we see the world and try to give direction to our shared future. Government and policy should therefore focus not only on solving separate problems, but also on understanding the systems, relationships and dynamics that connect them. Only with that wider perspective can we cope better with the complexity of our time and develop forms of governance suited to a society in transition.

When social issues are experienced as complex and opaque, powerlessness can easily arise. If problems seem large, interwoven and difficult to solve, people can quickly conclude that individual or administrative efforts make little difference. This feeling - "there is nothing I can do about it" - can lead to indifference or even apathy. The risk is a declining confidence in the possibility of change precisely when direction and action are most needed.

In this essay, we argue that complexity need not be a source of paralysis. On the contrary, a better understanding of complexity can open new perspectives for action. If we recognise that social systems are dynamic, interconnected and continuously evolving, we also see that small interventions, new coalitions and different ways of thinking and doing can

influence the direction of change. Reasoned, normative imagination of the future is important here. By considering together which futures are possible, which are desirable and which values should be central, complexity can change from a source of paralysis into a source of inspiration. Collective imagination creates room for hope, experimentation and active steering - not from the illusion of complete control, but from the understanding that direction remains possible in a complex, changing world.

Humans possess an exceptional capacity for pattern recognition. This cognitive ability lets us discover meaningful relationships, structures and recurring features in a complex and often chaotic environment. It enables us to impose order on the multitude of stimuli and information constantly reaching us.

Evolutionary psychology views pattern recognition as crucial to survival. For our ancestors, it helped identify danger, locate food sources and predict seasonal changes. Those who recognised patterns more quickly and accurately were more likely to adapt successfully to their environment. Pattern recognition is therefore a fundamental feature of the human brain, helping us understand and respond effectively to the world around us.

At the same time, the Greek philosopher Heraclitus reminds us that reality is always in motion. His famous saying, "You cannot step into the same river twice," means that change is constant: both the river and the person entering it have changed. Patterns may give us a foothold, but never fully coincide with the dynamics of reality.

Pattern recognition also shapes how we look to the future. Our brains use past experience as a reference point for expectations about what lies ahead. We often assume, implicitly, that the future is largely a recognisable extension of the past. This helps us make plans and develop policy, but it also carries risks. If we rely too heavily on linear extrapolation - simply extending existing trends - we risk underestimating change and discontinuity. This approach works only while the future behaves like the past.

Nor does recognising a pattern automatically mean understanding the underlying mechanism. Patterns can be visible without insight into their context, causes or the complex causal relationships beneath them. In social

issues this is especially problematic: what initially appears to be a clear pattern may result from several intertwined processes. Without a clear grasp of that dynamic, well-intentioned interventions can have unexpected and undesirable effects. Dealing with complexity therefore requires not only recognising patterns, but also continually reflecting critically on what those patterns do - and especially do not - tell us about the world.

The Maya civilisation illustrates pattern recognition without a full understanding of underlying mechanisms. The Maya predicted the movements of Venus with remarkable accuracy. Through long-term, detailed observations, they collected extensive astronomical data and discovered recurring patterns in Venus's appearance and disappearance in the sky.

On the basis of those patterns, they developed calendars and forecasting methods that proved surprisingly precise. Venus's relative movement in relation to Earth hardly changes on human timescales, so past observations could reliably inform future forecasts. Their ability to recognise and systematically record patterns enabled them to understand complex astronomical cycles, at least at the level of observation and prediction.

Yet the Maya did not possess today's cosmological understanding of the solar system. They did not know that Earth and Venus both orbit the Sun, nor did they understand the physical principles explaining the movement of celestial bodies. Their worldview was closely tied to mythology and religion. Some cosmological ideas, for example, held that the sky was supported by four mythical lynxes.

This shows that patterns can be recognised very accurately, and reliable predictions made, without a full understanding of deeper causes or the underlying reality. We must be careful in applying this to social developments. Planetary movements can be predicted correctly because they do not change over time: the future is the same as the past. Social developments, however, result from ever-changing actors and processes. Their future is different from their past. Pattern recognition alone is therefore insufficient for predicting them.

The idea that past data alone reliably predicts the future is deeply rooted in our thinking. It often works reasonably well where conditions are stable and

change is gradual. But it falls short when we use visions of the future to guide social development, because we live in a complex, adaptive and highly non-linear reality.

Within the perspective of complex adaptive systems (CAS), social systems are not mechanical constructions behaving predictably according to fixed rules. They are dynamic, self-organising and continuously interacting with their environment. Individuals, organisations and institutions influence each other continually, and new patterns and structures emerge without central direction. In such systems, the future is not deterministically fixed by historical data. Even small changes in initial conditions - a policy choice, technological innovation or social event - can trigger unexpected system shifts through complex interactions and feedback mechanisms.

This runs counter to the way our brains evolved. As hunter-gatherers, our ancestors improved their chances of survival by reacting to familiar past patterns. In a relatively stable natural environment, that was effective. In today's world, where social systems are strongly interwoven and change occurs faster and on a greater scale, a different attitude is needed: not just reactive, but reflective. We must consider how processes are interconnected and how different systems influence each other.

The interweaving of economic, social, technological and ecological systems produces emergence: new properties and outcomes that cannot be traced directly to the individual parts of a system. In complex systems, the whole is not only more than the sum of its parts; it is often fundamentally different. This interweaving can generate new patterns, innovations or crises that are barely foreseeable in advance. Systems and complexity thinking are needed to understand and anticipate them.

The non-linear nature of reality is not, however, a reason for fatalism. A future that is not fully predictable is not completely random. Complex systems operate within ecological, physical and institutional boundaries. Within those boundaries, there are many possible development paths. Complexity science allows us to reason with uncertainty and provides tools for exploring new directions.

Precisely because the future is not fixed, there is room for direction, choice and steering. Decisions made today affect tomorrow's "phase space": the

set of possible future states in which a system can exist. Policy choices, institutional changes and social innovations determine not only what happens now, but also which futures may still be conceivable and possible tomorrow.

Unintended consequences of well-intentioned policy interventions

A classic example is the “cobra effect” from colonial India. The British government wanted to reduce Delhi’s cobra population and offered a reward for every dead snake. At first, the policy seemed successful. But residents soon began breeding cobras to collect the reward. When the programme ended, the bred cobras were released, and the population became larger than before. An apparently rational intervention, through human adaptation strategies, produced the opposite of its intended result.

Another example is the Dutch police’s attempt to dismantle cannabis plantations by removing the “kingpins” from criminal networks. The intuitive idea is clear: remove the leader and the network will fall apart. In reality, cannabis production stayed remarkably stable. Research shows why.¹ When a leader disappears, someone else takes their place, and the network can become even more resilient. An intervention aimed at disruption can thus strengthen the system. Removing the specialists who install equipment did work, because technical expertise is scarce; without them, the system collapsed. But this success was temporary. When a VPRO documentary publicised the findings,² criminals simply arranged for more technicians.

The lesson is uncomfortable. In complex systems, every intervention changes the system itself, sometimes in unforeseen, unintended or undesirable directions. Effective policy requires not only finding a weak point, but also understanding how the system adapts afterwards.

Complex interactions and system response

Ecological systems also show how difficult intervention outcomes can be to predict. When wolves were removed from Yellowstone National Park in the twentieth century to protect livestock and game populations, this initially seemed logical. The deer population grew sharply, vegetation along rivers

was overgrazed, and this in turn led to erosion, changes in river courses and declines in other animal species. When wolves were later reintroduced, deer behaviour changed and parts of the ecosystem recovered surprisingly quickly. A relatively small change in a complex system can thus cause a cascade of effects.

Unexpected positive system changes

Complexity does not only mean that interventions fail or have unintended effects. Small events can also accelerate large positive changes. The rise of the internet is a well-known example. Originally developed as a military research project (ARPANET), it was not intended as the foundation for a global digital economy. Yet technological innovations, accidental applications and broad social acceptance produced an entirely new economic and social system affecting almost every sector of society.

The rapid spread of renewable energy in some regions is another example. In many countries, solar power was initially seen as a niche technology. Through technological progress, policy incentives, market dynamics and “social contagion,” costs fell and demand rose much faster than expected. This brought about a tipping point at which solar energy became, and continues to become, competitive with fossil energy sources in more and more places.

Small events with major consequences

Sometimes seemingly small or accidental events set wider systemic change in motion. The COVID-19 pandemic, for example, accelerated the digitalisation of work and education worldwide. Working from home, previously used only to a limited extent, rapidly became widespread. This has lasting effects on mobility, urban development and labour markets.

Social movements can operate through similar dynamics. Small groups of citizens may introduce new ideas that initially seem to have little impact, but eventually produce broad change as more people join in. This can be seen in the transition to a circular economy, where citizens and entrepreneurs discover new ways of sharing and repairing. Such small steps change social norms, which then lead to new business models.

These examples illustrate that social systems do not develop linearly and that interventions rarely have fully predictable outcomes. Steering complex systems therefore calls for humility, learning capacity and sufficient room to retain flexibility in policy practice.

Future willing as a navigation tool in a complex world

In a world where trend lines are becoming less useful as instruments for steering because complexity is increasing, will - collective intention - can serve as a compass. When social developments can no longer be extended linearly, it becomes all the more important to make explicit which direction we wish to take together. Because “future thinking” risks merely projecting existing developments forward, this essay prefers the term “future willing.” The difference is subtle but essential. While trend analysis asks, “Where are we going?”, future willing asks, “Where do we want to go?”

Future willing is not primarily about predicting what is likely to happen. It is about formulating a normative horizon: a reasoned beacon that directs present action. It provides a reference point against which choices can be assessed, even where the route is uncertain or changing.

Imagination and narratives are crucial in this process. Scenarios should not be treated as exact projections of the future, but as mental wind tunnels in which ideas, assumptions and options for action can be tested. They help us explore how choices and circumstances might play out, without claiming that one scenario will become reality. The literature therefore argues that a genuinely future-oriented society is characterised not by the accuracy of its forecasts, but by its ability to allow the new to emerge from the old - a process also called creative emergence.

The importance of imagination can hardly be overstated. It creates room for what does not yet exist. Many historical breakthroughs and innovations arose not from optimising existing systems, but from a leap of thought to a new possibility. John F. Kennedy's famous 1962 “Man on the Moon” speech is a familiar example. It did not give a technical blueprint for a lunar landing, but offered a powerful narrative that directed a collective effort. It

imagined a possible future that mobilised people and ultimately led to technological and social breakthroughs.

Extending this thought to society as a whole raises a fundamental question: who may imagine the desired future? Future willing is not value-neutral. It always concerns perspectives, priorities and power relations. This is why inclusion matters, and not only because it builds public support.

In a complex world, inclusion is simply a system requirement. Complex systems operate through many interactions and feedback mechanisms. The more diverse the perspectives included in our future imagination, the more likely we are to detect relevant signals from the system. Diverse insights make our strategy more adaptive. This involves a productive tension between expert knowledge, which helps reduce uncertainty and understand patterns, and the perspectives of people who think differently, which expand the solution space and reveal new possibilities. Future willing is not a “wish list for the future”; it aims to reach a reasoned point on the horizon.

If we manage to formulate a broadly supported vision of the future, the next question is immediate: how do we get there? The route to a desired future cannot usually be planned in a straight line. Uncertainty, unexpected events and changing circumstances mean that routes plotted in advance often soon lose their validity.

An approach that can help comes from seafaring and is known as dead reckoning. When navigators cannot use external reference points - for example, when stars are hidden by mist or GPS signals fail - they determine their position from course, speed and elapsed time. This form of navigation starts with direction, not absolute certainty about one's exact location.

In a social context, this means navigating towards the desired future on the basis of values and principles while remaining adaptive to reality's unpredictable dynamics. The course is fixed in direction, but the route proceeds through small steps, or nudges, and remains flexible. The end image itself must not be set in concrete. We need room to adjust both the future vision and policy in response to new insights.

This is the opposite of rigid master plans, which often lose their value as soon as the first unforeseen event occurs. Instead, we can think in terms of a “marker route”: a route set out step by step in a changing landscape. The metaphor comes from navigation across tidal flats, where continuously shifting sandbanks make fixed routes unreliable. Navigators place temporary markers that show the currently safe passage.

Applied to social development, this means taking a step, observing the state of the system, and continually adjusting our course accordingly. It requires administrative flexibility: not rigid buoys that bind us permanently to a once-chosen path, but adaptive movement towards a shared horizon.

This approach also requires a particular governance skill: the ability to keep switching between scales. On the one hand, it means zooming in on practical experience, local signals and experiments. On the other, it means zooming out to the whole system in order to understand how individual interventions relate to wider social dynamics. It is in this continuous interplay between detail and overview that the ability emerges to keep giving direction to change in a complex world.

In conclusion

The central paradox of this essay is that we want to steer the future while recognising that it can never be fully controlled. In a complex, dynamic world we cannot draw an exact road map to tomorrow. Yet uncertainty does not relieve us of responsibility for choosing a direction. On the contrary: precisely because the future is open and unpredictable, it demands conscious orientation. We need a normative future image - not because we expect reality to unfold exactly according to it, but because it gives us a shared horizon for present action.

Such an image functions as a compass in a world where fixed reference points are often lacking. It helps us make choices, set priorities and hold course as circumstances change. It is not a rigid blueprint, but a reasoned beacon inviting us to keep navigating between what is and what might become.

The reality in which we operate is not static, but a vibrant field of possibilities. In complex systems, small interventions, unexpected events or new connections can grow into changes with major social impact. The future is therefore not only uncertain, but also rich in potential. That openness contains room for innovation, cooperation and collective renewal.

Giving structured imagination a central place in our thinking about the future creates a shared orientation that helps us move through inevitable uncertainty. Imagination lets us look beyond the limits of what exists and makes new possibilities visible. It invites us to see the future not only as something that happens to us, but as something we can shape together.

The future is not fixed. It unfolds in the choices we make today and the interactions that follow. By navigating step by step, learning from what works and what does not, we can give direction to change without claiming to control it completely. And perhaps, through that combination of direction, imagination and adaptability, we may eventually arrive - within the broad realm of possibilities - at a harbour we jointly consider desirable.

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Footnotes

¹ Paul Duijn, Victor Kashirin and Peter Sloot. *The Relative Ineffectiveness of Criminal Network Disruption*. Sci Rep 4, 4238 (2014). Nature Publishing.
<https://doi.org/10.1038/srep04238>

² VPRO Labyrinth documentary (17 February 2013): <https://youtu.be/Qhk9ciHlzzo>

Colophon

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