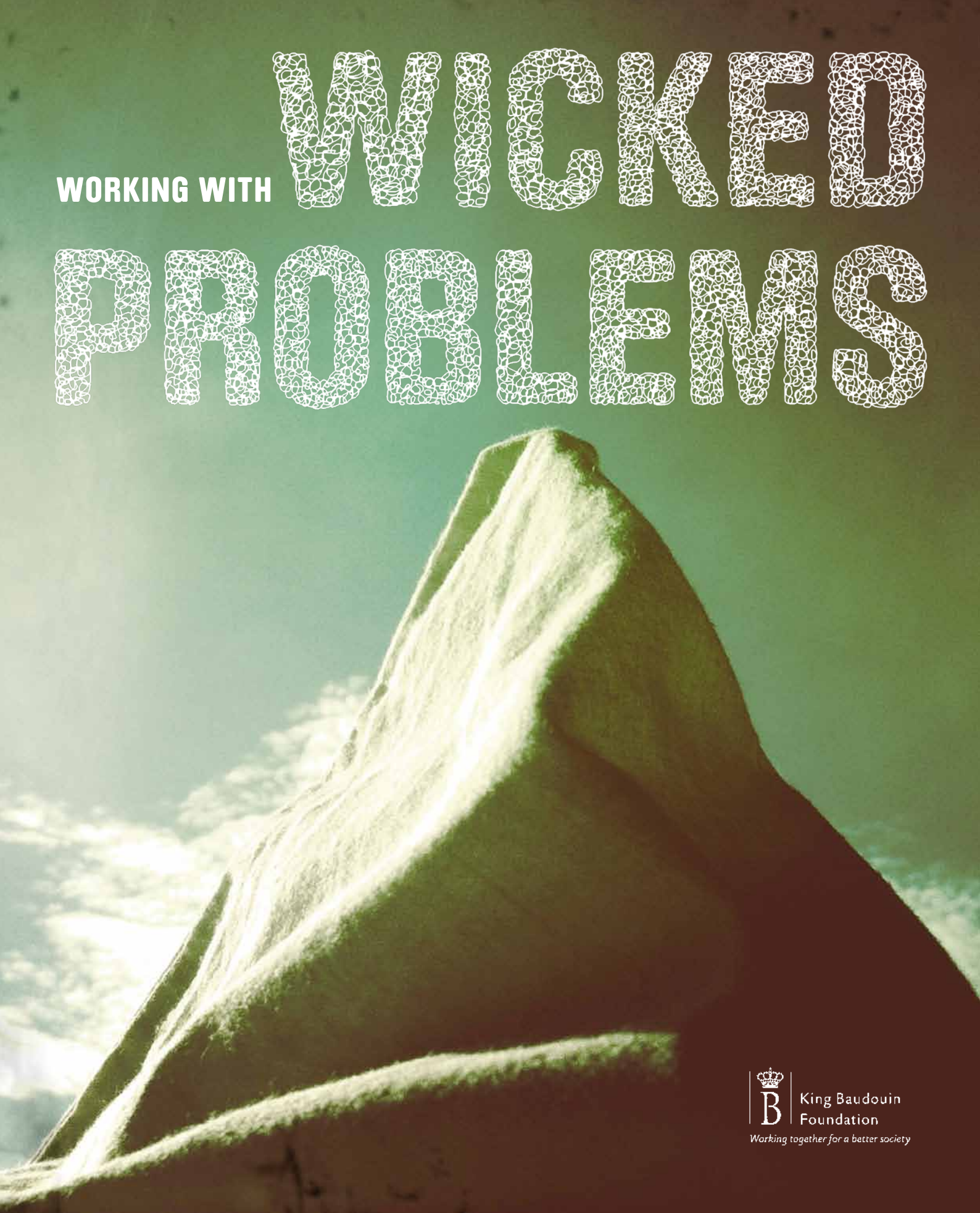
WORKING WITH WICKED PROBLEMS



King Baudouin Foundation
Working together for a better society

Working with wicked problems

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Acknowledgements

In 2011 the King Baudouin Foundation organised a training seminar to familiarize invited staff members of European foundations with new developments in tackling so-called 'messy', 'intractable' or 'wicked' problems, such as the obesity epidemic, poverty, and many environmental challenges. Typically these are issues that resist easy classification. They are ambiguous and hard to pin down because they seem to consist of many partial, but interrelated challenges. Costs and benefits of tackling the problem are hard to determine. But intervention is needed to avoid the problem spinning even more out of control.

The seminar brought together a number of thought leaders who illuminated a palette of approaches to deal with complexity. To facilitate knowledge sharing among all interested parties, KBF requested Philippe Vandenbroeck, coordinator of the seminar, to develop an accessible and attractive report bringing together important learnings and take-away messages on working with wicked problems.

The author gratefully acknowledges the stimulus received from colleagues and friends: Kim Becher, Janis Birkeland, Marshall Clemens, Rachel Dechenne, Michiel Dehaene, Jo Goossens, Kalle Halding, Barbara Heinzen, Luc Hoebeke, Masahiro Kakuwa, Jos Mertens, Richard Normann (†), Kris Ooms, Henrietta Palmer, Herman Van Campenhout, Wim Van den Hende, Paola Vigano', Elli Verhulst, Angela Wilkinson, and Alain Wouters.

CONTENTS

INTRODUCTION

This is a story about dealing smartly with complexity. But it's also a story about acknowledging the limits of smartness.

We deal with friction in our personal and professional environment all the time. Problems can be persistent features of the way we interact with our environment, or they can emerge unexpectedly. Often we rely on patience and routine to get the friction out of the way. In times of crisis we easily resort to improvisation or strict command-and-control.

Smartness starts with taking a step back and acknowledging that a problem is not some objective given that determines a particular response. Rather than a clearly identifiable feature of our environment a problem emerges from the way we understand and interact with that environment. Management theorist Keith Grint sees the ability 'to consider not what is the situation, but how it is situated' as an essential quality of people in leadership positions.

Arguably there is a lot to be gained by framing friction as 'simplicity'. Edward De Bono is probably right when he argues that trying to make things simple is good for us. Ideally, he would like to see a National Simplicity Campaign in every country. Recently, Dr. Atul Gawande has written an eloquent 'checklist manifesto': a plea to rely on straightforward tools for structuring and coordinating tasks in stressful and volatile situations.

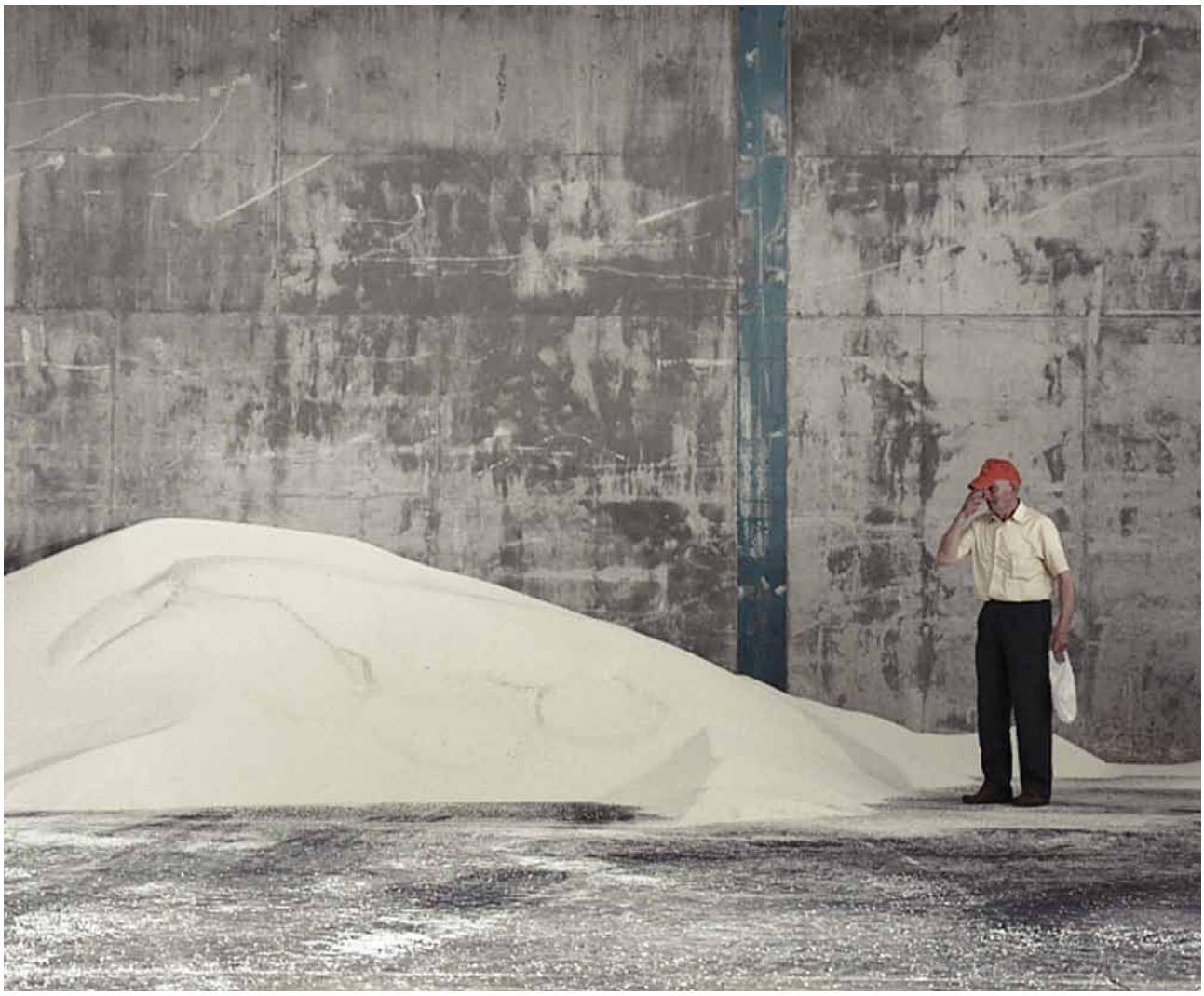
Without denying the usefulness of these strategies in this booklet we will take the opposite approach. We will assume that we are dealing with a reality that is particularly slippery and resists responses fixed as clear schemata. To that end we will connect to a way of understanding friction that has emerged over the last four decades. It is from the 1970s onward that people started to talk about 'wicked', 'messy' or 'intractable' problems. Behind that novel and slightly provocative language was a recognition that 'problems' can often not be seen in isolation. Increasingly also decision makers were ready to accept that science does not always have the answers and that other stakeholders (with other worldviews) have a role to play in crafting ways forward to deal with policy challenges.

So, what are ways forward if we have the courage to accept complexity and conflict? Here we will argue that there are basically three approaches, or rather three rich traditions, that may inspire us in working with wicked problems. We will refer to these traditions as 'Ideas', 'Dialogue' and 'Design'. They connect to the power of thinking interdependences, of investing in social relationships and of visualising new worlds.

Luckily problem solvers of all sorts have, during the last few decades, created a range of sophisticated methodologies that bring together the strengths of these three approaches in different ways. Here we will discuss five: Soft Systems Methodology, Transition Management, Future Scenarios, Design Thinking, and Appreciative Enquiry. The list is by no means meant to be exhaustive. Each of these ways of knowing and engaging has a distinctive scope and spirit. But all of them have been developed to find pragmatic ways forward in dealing with knotty, confusing and contested problematic situations.

In a final section we will take a step back and try to understand what these five approaches teach us about working with wicked problems. These lessons have been formulated as seven rules of thumb. They are stimulating and sobering at the same time. The good news is that, yes, we can acknowledge messiness and yet rely on powerful and smart levers to improve our predicament. But diehard 'optimisers' and 'heroic leaders' will be perturbed by the message that where smartness stops persistence and humility take over. Final solutions do not exist, should not exist. Working with wicked problems inevitably means grappling with paradoxes and tensions. ■

1 GUIDING IDEA: WICKED PROBLEMS



Summary

Acknowledging the existence of wicked problems means admitting to face societal challenges for which no definitive answer exists. Wicked problems are structurally complex so that it is hard to say where a given problem stops and another one begins. And stakeholders will frame these challenges in different ways so that a one-size-fits-all solution is highly unlikely. Thinking in terms of wicked problems opens up a novel repertoire of strategies to come to grips with these issues. However, we should guard against getting carried away by our ability to recognise and deal with complexity and conflict. Even in this complicated world 'simple' solutions remain possible.

WHAT ARE WICKED PROBLEMS ANYWAY?

When talking about the many societal challenges we are currently facing, people increasingly describe them as 'wicked problems'. The notion has an obvious negative resonance. Someone who is wicked is not to be trusted. We can't really be sure about the intentions of a wicked person. So how can a problem be 'wicked'?

It was in the 1970s that people started to talk about 'wicked', 'swampy' or 'messy' problems, partly in response to the turbulence of the 1960s (remember the threat of nuclear annihilation, the Vietnam debacle, the student revolt, the emergence of an environmental agenda). Horst Rittel and Marvin Webber (a design theorist and an urban planner, respectively) wrote a paper in 1973 with the forbidding title "Dilemmas in a General Theory of Planning" in which they argued that scientific approaches to 'problems of social policy' were bound to fail because of the nature of these problems.

They wrote:

"They are 'wicked' problems, whereas science has developed to deal with 'tame' problems. Policy problems cannot be definitively described. Moreover, in a pluralistic society there is nothing like the undisputable public good; there is no objective definition of equity; policies that respond to social problems cannot be meaningfully correct or false; and it makes no sense to talk about 'optimal solutions' to social problems (...). Even worse, there are no 'solutions' in the sense of definitive and objective answers."

What Rittel and Webber pointed out was that in many cases it is better to acknowledge upfront that science is ill-equipped to tackle social challenges. There are two basic reasons for the wickedness of these problems: complexity and conflict. These problems are ambiguous and hard to pin down because they seem to consist of many partial, but interrelated challenges. So it is hard to tell what button to push, or what lever to pull to make them go away. And the people affected by these problems will have very different views on what the nature of the problem is and how it can be tackled. So, a solution that can be considered 'optimal' from an objective, impartial point of view does not exist.

Key characteristics of wicked problems

- **There is no definitive formulation of a wicked problem. The framing of a wicked problem can always be contested.**
- **Solutions to wicked problems are not true-or-false, but better or worse from a given point of view.**
- **Every attempt to intervene alters the problematic situation in significant ways.**
- **Wicked problems do not have an enumerable set of potential solutions.**
- **Every wicked problem can be considered to be a symptom of another problem.**


U.S.
MARSHAL

WHY IS IT IMPORTANT TO RECOGNIZE WICKED PROBLEMS?

First it is important to acknowledge that there is not an objective thing out there to which we can point and say: "This is a wicked problem". A 'wicked problem' is not a 'thing' but a social construct. It is a particular way of looking at the world, of framing the challenges we are currently facing. What then do we have to gain by taking this stance?

At a philosophical level we can argue that framing challenges in a different way opens up a novel repertoire of solution strategies. Sir Geoffrey Vickers, an eminent systems thinker, thought that problems are only dangerous in relationship to what people can see, value and do: "A trap is a trap only for creatures which cannot solve the problem that it sets." So, if we can fashion ourselves a set of tools that allow us to approach complex challenges from different angles, then this may increase our chances to find a way forward. More specifically, thinking in terms of 'wicked problems' will lead us to approaches that acknowledge interconnectedness between many different partial problems right from the start.

And if we are aware of the conflicts between world views in which the issue is enmeshed, then some way of accomodating (if only temporarily) these differences needs to be part and parcel of our strategy to move ahead. So, observing the world through a 'wicked problem' lens may make us a lot smarter, more realistic in our expectations, and more alert to the human sensitivities embedded in complex challenges. As Jean Monnet, one of the founding fathers of the European Union used to say: "If you are faced with a big problem, make it bigger." That is what thinking in terms of wicked problems helps us to do.

On a more practical level, framing issues as wicked problems can be helpful to programme managers and strategists in organisations that are dealing with complex societal challenges on a day-to-day basis. These people will be asked to develop a 'theory of change' that convinces their bosses and boards to allocate resources to deal with these issues. They will have to present the challenge, the change they would like to see and the approach that might be taken by the organisation to make a positive difference. The ideas and methods included in this little guide may be helpful in elaborating those 'business cases'.

WHAT ARE THE RISKS RELATED TO THINKING IN TERMS OF WICKED PROBLEMS?

Framing the challenges facing us as wicked problems is looking at the world through a particular lens. Like all lenses, this one has its strengths and its limitations. It alerts us to complexity and conflict but in doing so may obscure simple and pragmatic ways of making a positive difference. Sometimes it may be quite appropriate to make a big problem bigger. But at other times it is helpful to eliminate all the clutter and reduce the challenge to its barest essence. Jack Sim, successful entrepreneur and President of the World Toilet Organisation, has built a powerful advocacy organisation around the 'simple' given that at least 2 billion people on this planet are suffering from serious health problems because they do not have access to adequate sanitation. It's a glaring problem for which there is an obvious 'fix': to get more flush toilets out there. This uncomplicated framing helps to focus energy and attention. No doubt, beyond this straightforward, linear perspective hides a very complex problem, involving new technologies, habits of mind, housing regulations, etc. So it is probably not an either-or story. Whenever possible we should be sensitive to wickedness and simplicity at the same time. ■

Further reading

› **RITTEL, H.W.J, WEBBER, M.M. (1973)** ***Dilemmas in a General Theory of Planning, Policy Sciences, 4, 155-169.***

3 WAYS OF DEALING WITH COMPLEXITY

Once we are attuned to a 'wicked' perspective the question is how we might actively engage with it. 'Actively engaging' means: building up an understanding of the challenge, developing strategies to intervene, getting our hands dirty to make a positive difference and assessing the impacts of our work. Although this suggests a neat 'plan-do-check' cycle, we may be suffering here from the limitations of our language. Later we will see that the boundary between 'doing' and 'thinking' in dealing with wicked problems is not always so clear-cut.

For now we suggest taking a step back and suspending our thinking in terms of 'tools' and 'methodologies'. Let us first reflect on three key ways to come to grips with conflict and complexity. We'll call them 'Ideas', 'Dialogue' and 'Design'.

IDEAS

Whilst we can't solve all our challenges by sitting behind a desk and thinking, the world of abstract ideas continues to be an important inspiration to deal with real-world complexity. More particularly, over the last six or seven decades a way of thinking has emerged in response to the growing awareness that there are exceedingly complex systems that modern science can never quite grasp. Rather than a neatly defined discipline 'systems science' is an interdisciplinary field that has emerged from the convergence of, amongst others, ideas from neuroscience, mathematics, and biology. One could argue that it is not at all new as already in ancient Greek thought elements of a systems approach can be identified.

Fundamental for a systems approach is the question how an entity (any kind of organism, or organisation) can secure its viability in a changing environment. In response, systems science has developed a language and a set of tools to get a grip on how our world is composed of many interconnected drivers and subsystems (its structure), how it behaves over time (its dynamics) and how organisms of all kinds absorb this variety.

There is no need to be intimidated by systems thinking as, to an extent, it has entered a familiar repertoire of problem solving skills. In fact, any programme manager who has sketched out a 'diagram of forces' when pondering the connections between many themes and trends affecting a certain overarching issue has been engaging in a form of systems thinking. Similarly, we have grown quite used to thinking in terms of feedback mechanisms when considering why systems behave as they do: inertia is linked to dampening feedbacks (the 'thermostat effect'), whilst a runaway dynamic is easily associated to reinforcing loops that move systems ever further away from a stable equilibrium.

For aspiring systems thinkers it is worthwhile to bear in mind that the whole field is traversed by an important conceptual distinction between so-called 'hard' and 'soft' approaches. A 'hard' systems thinker is primarily interested in developing (quantitative or qualitative) models of a problematic part of the world. These models are then considered to be an objective, more or less accurate picture of that slice of reality. Once we have that picture we can start to evaluate where it is most beneficial to intervene to improve that situation. This approach could be said to be positivist. The 'soft' system thinker, however, starts from the assumption that an objective representation of reality is not possible. Her stance is constructivist. The point of view of the observer always comes into play. In a soft systems approach the focus is not on the models, but on the way we use these models to come to an accommodation between different points of view. The distinction between 'hard' and 'soft' systems thinking can be summarized then as follows: in hard systems thinking we construct models 'of' the world, whilst in the soft approach we construct models 'for' the world. The point is not to build sophisticated 'pictures of reality' but to work with pragmatic devices to make our disagreements explicit, identify common ground and take action.

DIALOGUE

Dialogue is not a recognised discipline (as systems science) or practice (as design, see below). It is something we engage in on a regular basis, effortlessly. However, when grappling with wicked problems we are aiming for a dialogue that has a particular quality. Probably, we have all experienced at some point in our lives that a deep conversation may lead us to quite a different place from which we started. Suddenly there is the feeling that a trapdoor opens below our feet and we are momentarily suspended above an unfamiliar but exciting mental landscape. We feel that we are really connecting with our interlocutors and that we understand things that we haven't been able to grasp before. Context often matters. A very long train ride or a remote location seem to bring about these experiences more easily.

Quantum physicist David Bohm took the practice of dialogue to a point that is as far removed from a preformatted 'participatory process' as we can imagine. To him dialogue did not serve a particular, fixed purpose. The conversation may at any moment have a purpose, but for him it was crucial not to hold on to it. Dialogue for Bohm was a sort of meta-exploration, a joint practice of wanting to suspend judgment at all times during our interaction. He saw dialogue as a way to plant seeds, to build a capacity for action that might come to fruition, or might not.

All this may sound terribly esoteric. But maybe it becomes more approachable when we translate it into a contemporary jargon that talks about building social capital. Author Peter Block sees dealing with wicked challenges not as focusing on deficiencies and fear but as building social fabric. Problems do not exist in a vacuum. They are always embedded in a community, small or large. As long as people do not feel accountable for the wellbeing of their community, defining and studying problems will be of little help. Social capital enables what Block refers to as 'chosen accountability', when people step up to bring an alternative future into being. Dialogue is the only vehicle that is able to sustain that kind of transformation.

Dialogue opens up a space to deal with complexity that is very different from a systems approach. The two approaches can be complementary but they can also be at odds with one another. A systems approach is very often diagnostic in nature. It seeks to understand why things don't work. And starting from those insights it identifies measures to remedy the problematic situation. Dialogue, as we understand it here, is much more oriented towards liberating the potential for change of a community. It builds on strengths and desires.

DESIGN

A third and very different way to tackle complexity is design. Designers are people who are able to synthesise novel, tangible forms (products, houses, cities) – and increasingly also intangible processes such as services – out of the messiness of daily reality. They are particularly good at forging connections between seemingly unrelated issues. As such design is increasingly seen as a way of thinking that is fundamentally different from the inductive reasoning of science and deductive schemata of logic.

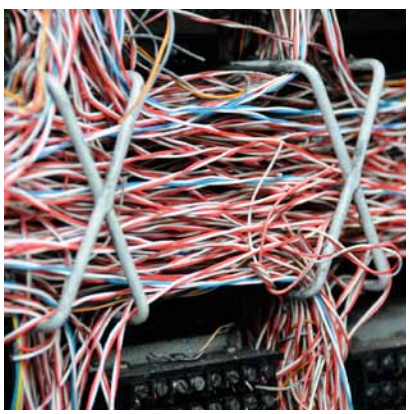
Designers make use of concepts but they are not merely 'thinkers'. Learning expert Donald Schön referred to them as 'reflective practitioners': people who are able to 'reflect on action so as to engage in a process of continuous learning'. In design practice it is hard to say where the thinking stops and the action begins. It is a constant, tightly meshed cycle of observation, ideation, prototyping and testing. In that process, designers not only create things but they also create new knowledge.

One of the defining features of a design approach is the almost activist energy it seems to generate from its practitioners. A good designer is not easily intimidated by complexity. Unlike a systems thinker, who will take her time to pause and analyse, a designer will start to sketch almost immediately. There is an intimate coupling between the motor movement of the hand across the paper and the emergence of an intellectual strategy to deal with the challenge at hand. Giorgio Vasari, the 16th century painter and architect, argued that a 'concept' implied a movement of the mind. To him the art of drawing was a form of thinking. Designers have not lost this ability to think with their hands.

Designers bring very valuable skills to any team that is dealing with wicked problems. Importantly they also inject a unique, positive kind of energy in the process of grappling with important challenges. Last but not least, their capacity to suggest a new reality through physical models and drawings can function as a unique catalyst for change.

ALL TOGETHER NOW

Ideas, dialogue and design provide three different repertoires of thinking and acting when confronted with wicked problems. We can see them as different types of knowing. Action research pioneer John Heron referred to propositional knowing (ideas), experiential and presentational knowing (dialogue), and practical knowing (design), respectively. They are not rigidly compartmentalized, however. System thinkers may embody a designerly, action-oriented approach in their practice. Designers will rely on concepts when developing their proposals. Both may rely on forms of dialogue in the process. Furthermore, it is not always necessary to have these three ingredients in the problem solving mix.



Bringing different skill sets together also creates its own kind of complexity. It's not a given that they will blend to create something that is more than the sum of the parts. We have already pointed out that a systems perspective and a dialogue practice are not necessarily aligned.

Susan van't Klooster has shown in her research how difficult it sometimes is for foresight practitioners (a particular brand of system thinkers) and urban designers to productively work together. These different communities seem to speak the same language but different meanings may hide behind the same words. Furthermore, when it comes to creating a setting for authentic dialogue, the professional expertise of systems thinkers and designers may get in the way. Nevertheless, people whose mandate it is to engage with wicked problems do well to consider how each of these fundamentally different ways of grappling with complexity may contribute, in their specific settings, to making a difference that matters. It is worthwhile to seek synergies between these different approaches. Ignoring these synergies may come at a high societal cost.

CONCLUSION

- We have distinguished three very different ways of thinking and acting to come to grips with wicked problems: Ideas (systems thinking), Dialogue and Design.
- Systems thinking essentially tries to understand how entities can maintain their existence in a changing environment. 'Hard' systems thinkers intervene in the system's architecture as engineers. Soft systems thinkers create a context to increase the system's capacity for learning and action.
- Dialogue is a vehicle for creating social capital. Social capital in its turn is the fuel which drives a community's capacity for transformation.
- Design is a skill to materially extract the shape of an alternative reality from a very messy context. As a rule designers bring a positive kind of energy to the process of grappling with important challenges.
- These different repertoires are not rigidly compartmentalised. An individual practitioner may be skillful in combining all three in helping people to grapple with conflict and complexity. However, bringing these different skills together creates its own kind of complexity. Nevertheless, it is always worthwhile to assess how each of these different repertoires may contribute to making a positive difference to wicked problems. ■

Further reading

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- BLOCK, P. (2008) *Community. The Structure of Belonging*, Berret-Koehler Publishers, San Francisco.
- KOLKO, J. (2010) 'Abductive thinking and sensemaking: the drivers of design synthesis', in: *Design Issues*, Volume 26, Number 1, Winter, 15-28.
- VAN 'T KLOOSTER, S. (2007) *Toekomstverkenning: ambities en de praktijk. Een ethnografische studie naar de productie van toekomstkennis bij het Ruimtelijk Planbureau (RPB)*, Uitgeverij Eburon, Delft.

5 WAYS OF KNOWING AND ENGAGING

In this section we will discuss five coherent approaches to tackle wicked problems. They embody in various ways the three key ways of dealing with complexity that we discussed in the previous section. Obviously this is not an exhaustive list of tools and methodologies to engage in complex problem solving. Some of these approaches have been around for a long time, others have emerged more recently. Given the open-ended nature of wicked problems it will also be clear that none of these approaches provides us with a neat, stepwise template. When dealing with wicked problems we are in a territory beyond shrinkwrapped tools. We will have to shape interventions in a creative and context-sensitive way. As we will see, all of the proposed approaches boil essentially down to different strategies to support structured and effective learning. It's not about reaching final solutions, but about being able to continuously adapt to changing circumstances. The discussions necessarily have to remain very brief. Interested readers are invited to follow the pointers to additional literature that are supplied at the end of each section.

A/ SOFT SYSTEMS METHODOLOGY

Summary

SSM is an approach that is able to integrate systems ideas, dialogue and action-orientation into a coherent whole. It proposes a disciplined process to create clarity in a complex, problematic situation. Soft Systems Methodology allows us to step back from the messiness of the actual challenge and to think about ways of organising in an idealised realm. It is a process that takes differences between the world-views of people affected by the situation explicitly into account. The purpose is to come to a joint agreement about what actions are desirable and feasible that may lead to an improvement, however modest, in the situation.

Soft Systems Methodology (SSM) is an approach that is both very simple and very sophisticated. Peter Checkland, who was a key figure in its development, captured the approach's raison d'être very succinctly in the title of his last book: "learning for action". SSM has not been designed to solve the world's greatest problems. But it can be of great help to a group of people who jointly want to agree on how to deal with a problematic situation they are all affected by but of which they may have a very different understanding. What SSM does is to make these differences in framing very explicit and then to seek an accommodation between these differences in deciding upon actions to bring about improvement.

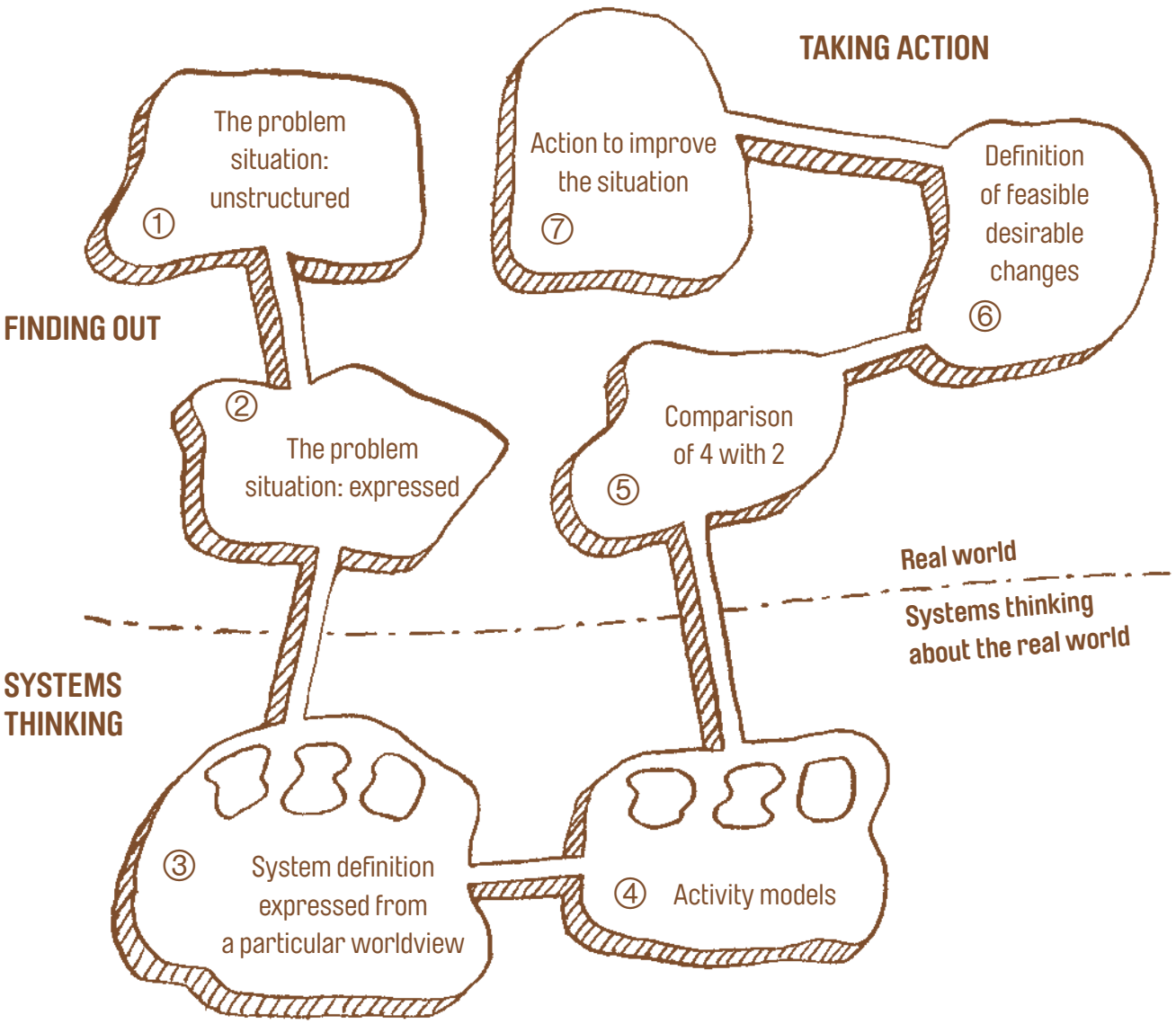
The trick is that SSM asks its practitioners to leave the complexity of the real world for a while and think about how we might want to act in an idealised realm. Suppose that we are confronted with a problematic situation in a health care system. SSM asks us to step away from the concrete messiness of the particular health system we are studying and to think about the purpose of that system from one specific vantage point at a time. We might, for instance, argue that the care system exists 'to return people to a state of physical and mental normalcy' as quickly and efficiently as possible. Other people may put forward that the system is there 'to help people to maintain quality of life when confronted with an illness'. Clearly, two very different, but valid purposes that might underpin the functioning of a care system (and maybe there are more purposes to be found). If we were to consider how the care system would have to function to realise those different purposes, we would realise that this would involve different kinds of activities. For example, in the former case there ought to be professionals in the system that busy themselves with diagnostically assessing how large the gap between the patient's situation and 'normality' is. In the latter case we would have people (not necessarily professionals) who would be engaged in helping those with an illness (not necessarily labelled as 'patients') to build skills to play a role in their own recovery process. What SSM requires us to do then is to build a separate activity model for a care system underpinned by each different purpose. Clearly, these models do not describe the real world, as each of them is based on one pure worldview. They are just tools to explore the problematic situation in an organised way.

Once we have those models we can use them as a source of questions about the real-world situation. The idealized activity models can be contrasted with the actual care system and from the gap between the two may emerge ideas for change and improvement. Obviously, the differences in worldview will continue to exist and the distinct activity models will make sure we will be quite aware of them. The challenge is then to find changes that are both desirable (given these models) but also feasible for people in this particular situation. That is a process of seeking accommodation. Depending upon the urgency of the situation and the ambition level of the participants, accommodation may be weak or strong. The option to do nothing is not warranted. So even if accommodation is weak, at least some action towards improvement will be taken. Maybe that will build some trust in the capacity of the multi-stakeholder group to jointly deal with the problematic situation. If it does, then after a while another soft systems exercise may be undertaken which will hopefully lead to more far-reaching accommodation. And so a soft systems approach gives impetus to a social learning cycle that builds some understanding about the wicked problem and trust to jointly intervene in it over time.

The diagram on the opposite page, originally developed by Peter Checkland, captures this basic logic: the discovery and articulation of a problematic situation in the real world ('finding out') leads to a phase of conceptual modelling in an idealised realm ('systems thinking'). The comparison between the conceptual (activity) models and the problematic situation provides a compass for feasible and desirable changes, which leads to action to improve the situation ('taking action').

The power of SSM derives from a number of unique features:

- The willingness to make differences in framing of problematic situations very explicit: SSM assumes upfront that clashing worldviews are always present in human affairs. Rather than pretending these differences aren't there, it takes the disagreement as a source of insight, energy and creative tension.
- The temporary move away from the messiness of the real situation: by pulling the enquiry away from the actual situation and thinking about it from an idealised, single-worldview perspective, SSM creates a more relaxed and disciplined setting to deal with urgent challenges.


TAKING ACTION
The problem situation: unstructured
①
Action to improve the situation
⑦
Definition of feasible desirable changes
⑥
FINDING OUT
②
The problem situation: expressed
Comparison of 4 with 2
⑤
Real world
Systems thinking about the real world
SYSTEMS THINKING
③
System definition expressed from a particular worldview
④
Activity models

- The focus on activities rather than organisations: in wicked problems related to human institutions people will very often be tempted to think in organisational terms. However, as a rule this is very political territory and will be seen as very threatening to those who are at risk to lose power. By focusing on an organisation's purpose (its essential contribution, seen through the lens of a particular worldview) and the activities that are needed to fulfill that purpose, the enquiry is momentarily isolated from organisational power play. Only later, once it is clear what activities are needed, we can ask 'who will contribute to what action?' As a rule there are many organisational configurations that fit the requirements posed by a given activity model. This creates space for accommodation.
- The focus on local, pragmatic action: the approach has in the first place been developed as a way to help people that have first-hand experience of a problematic situation to take steps towards dealing with the situation. It is those people themselves that have to decide (and hence take accountability for) the scope of the accommodation they want to mutually agree on. This ensures buy-in and commitment, even if it is only for small steps.
- The importance of language: In SSM we talk about a 'problematic situation' not about a 'problem'. The difference is subtle but important. When we say 'problematic situation' we refer to a slice of the everyday flux of events that we recognise as being in need of improvement but of which we still need to make sense. 'Problem' implies a well-defined given that asks for a 'solution'. Similary SSM aims for 'accommodation' not 'consensus'. The former is more fluid and temporary than the latter.

Like any methodology, SSM also has relative weaknesses:

- The focus on feasibility: in SSM the interventions are limited by what is deemed culturally and politically feasible. They do not emerge from a visionary perspective that radically wants to transcend the existing challenges.
- Process-wise it is sometimes difficult to convince participants to go along with discipline of developing multiple activity models each of which is associated with a different purpose for the system. In acute problematic situations people are often so hungry for structure that they are happy to stop after a first activity model has been generated. Going beyond that to explore other worldviews (and hence to increase complexity) may require considerable persuasion skills from a facilitator.
- Whilst it is founded on a set of simple, clear ideas, SSM embodies a logic that people do not easily make their own. It may take a while before they really get the logic of the approach.

In terms of implementation, an SSM-based project may take anything between an afternoon and 6 months. Given the requirement that only people participate who have first-hand experience of the problematic situation and who can take responsibility for intervening in it, the number of participants will usually vary between 10 and a few dozen.

Above we have briefly discussed the orthodox soft systems approach as it has been described and practised by its original developers. However, there are many elements in the approach (for example thinking in terms of activities rather than organisations) that will be valuable in other 'wicked' settings as well.

Further reading

- CHECKLAND, P., POULTER, J. (2008) *Learning for Action. A Short Definitive Account of Soft Systems Methodology, and Its Use Practitioners, Teachers and Students, Wiley, Chichester.*

B/ TRANSITION MANAGEMENT

Summary

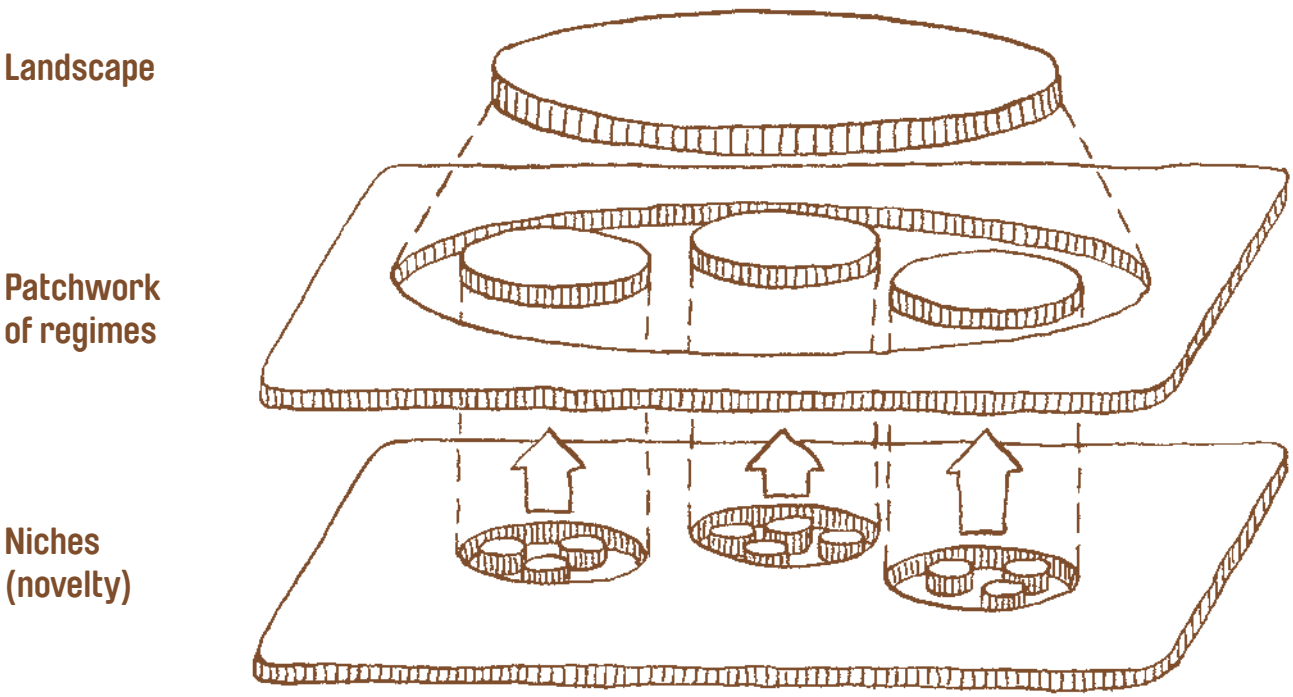
Transition Management is an approach to guide big systems (in health care, agriculture, mobility, etc.) towards a more sustainable equilibrium. However, despite the label it is less about 'managing' than about creating the right conditions for change to happen. Three elements play a crucial role in a transition process: a guiding image of a more sustainable future, a collection of innovative experiments that explore the boundary of the possible and an infrastructure to extract and diffuse the learning from those experiences. Transition management relies on creative incubators ('arenas') to spearhead these processes. The approach bundles a very rich experience in dealing with complexity, participation and innovation into a coherent framework. However, it is by no means a cookbook approach but requires creativity and stamina to turn vision into hands-on realities.

In contrast with Soft Systems Methodology, developed to guide relatively small groups of people in dealing with local wicked problems, Transition Management focuses on radical changes needed in large systems, such as regional or national health care, mobility, agriculture and energy systems. Transition Management has the ambition to change structures, practices and culture that are deeply entrenched in our society in an attempt to move towards a more sustainable future. That, clearly, is a 'wicked' context. In Flanders transition processes have been initiated in the area of sustainable materials management (Plan C), sustainable building and living (DUWOBO) and agriculture (The New Food Frontier).

Transition Management relies on an interesting framework to understand these large-scale change processes. The so-called 'multi-level perspective' (MLP) sees transitions arise when developments at different scales – landscape (macro), regime (meso), niches (micro) – reinforce each other (see diagram on the next page). Regimes are the dominant way to do things, embodied by familiar infrastructures, institutions and worldviews. As a rule they are difficult to change (because they exhibit lock-in). A landscape is the wider context that influences the regime. A niche, finally, is an emerging innovation that is seeking to destabilise or adapt the regime. For instance, in our personal mobility system the regime pivots around the petrol-powered car. Today this regime is under pressure from various developments: climate change, local air quality, congestion. The electric car could be considered as a maturing niche that might challenge the preeminence of the internal combustion engine. The interplay between landscape pressures and impulses from niches may create conditions for large socio-technical systems to change.

Transition Management aims to create the right conditions for change to happen. In that sense, the very notion of 'managing' a transition is somewhat paradoxical. People engaged in bringing transitions about are more in the role of a 'midwife' than of a controlling 'engineer'.

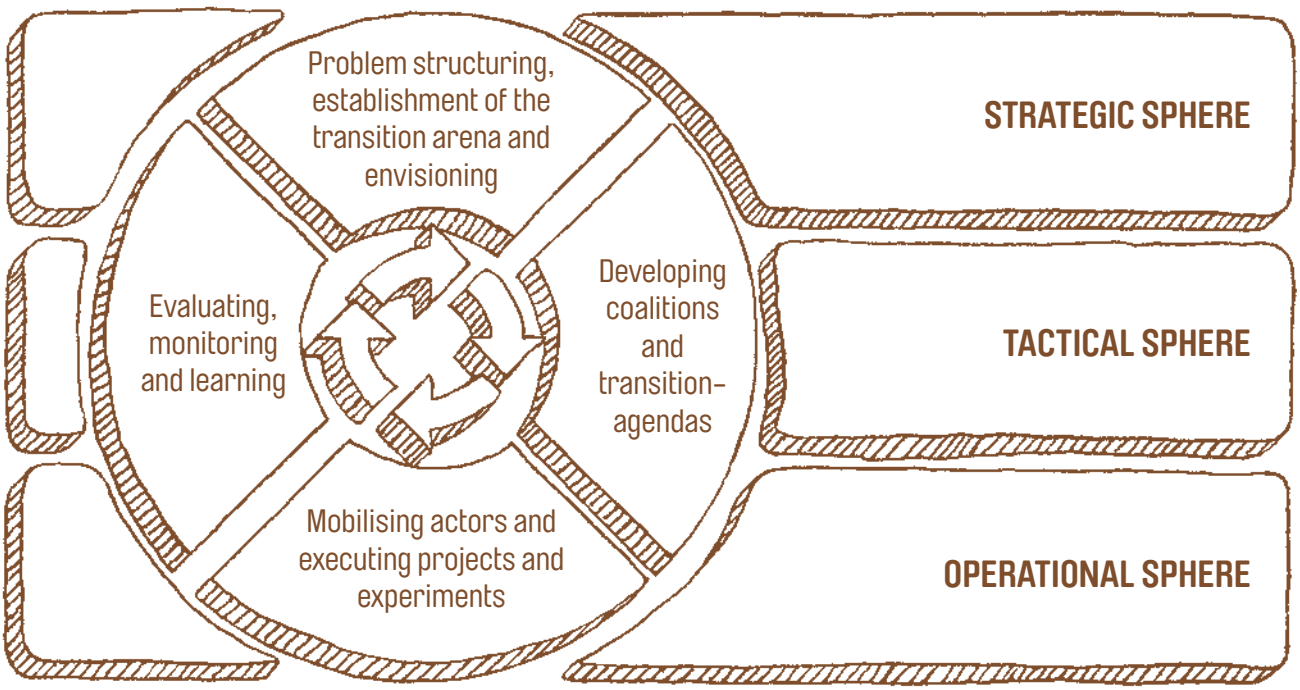
Three elements play a crucial role in a transition practice. First there is the development of a visionary long-term perspective on what a sustainable system might look like.



That vision is not a fixed image of a desired future that needs to be shared by all but rather a broad canvas intended to inspire and energise a broad stakeholder arena. That is another key element: an evolving field of innovative experiments, supported by diverse coalitions of actors, oriented towards learning by doing. These experiments are not so much about solving particular problems in a community, or market-driven introduction of a new technology but about pushing the envelope, and in that process seeing what works and what doesn't. The third crucial element is a 'learning network' to help identify new opportunities, to strengthen ongoing experiments and to extend the buy-in for the change process.

Practically, a transition management effort relies on a 'transition arena' as a participatory instrument. It is a temporary incubator populated by a medium-sized group of creative and concerned people (so-called 'frontrunners') from different sectors (connected to the transition focus), with a mix of competences (systems thinking, communicating, initiating) and networks. They are supported by process and content experts. The arena serves to create trust, exchange ideas, dig deep into the issues and shape an engaging future agenda. This easily takes a year, sometimes more. Once the agenda (which can be a single, overarching vision, or a looser collection of images) is felt to be rich and engaging enough, it can be shared with a wider community. Then begins the hard work to try and turn these ideas into tangible experiments.

It is important to realise that a transition process can never be a cookbook approach. It is a complex strategy to deal with wickedness. It's a multi-actor, multi-level, multi-phase and multi-pattern process. In essence the approach revolves around ensuring some degree of fit between a broad, systemic vision and a collection of probably very different experiments. It's an exercise in balancing between chaos and order. That has to be a participatory sense-making process that is inevitably traversed by uncertainty, new insights and evolving power relationships. In this fluid environment the three pivotal approaches of systems thinking (envisioning new system architectures), dialogue (joint learning and sense-making) and design (experimenting) are very much intertwined.



The diagram above (after Loorbach) visualises this interplay between these strategic (envisioning), operational (experimenting) and tactical (building coalitions; learning) spheres.

A key question that bedevils many transition initiatives is the relationship between innovators (niches) and regime players. If they join forces in an early phase of the transition there is a possibility for creating necessary buy-in with established actors. But the risk is that the process is stalled because of conflict and power play. In the alternative case the lack of broad support may hamper innovation efforts. There is no right or wrong approach to this. A soft systems practitioner would simply observe that initially the space for accommodation will be smaller when frontrunners and vested interests try to transition together. The paradoxical task for transition champions is to force "radical change in incremental steps".

Given the complexity and scope of transition efforts it is very likely that regional or national governments play an important role as funders, conveners and also as clients for new policy ideas. Orthodox Transition Management is, as a rule, strongly dependent on established institutions even if only for receiving a mandate to innovate. The 'transition' label has been claimed by more activist groups as well. Transition Towns, for example, is a social movement that seeks to equip local communities to deal with future effects of scarcity of fossil fuels and climate change. The focus is on empowering citizens to adopt new practices and lifestyles rather than on creating a setting favourable to socio-technical experiments. These quite different transition philosophies do not have to be compartmentalised (but in actual practice they often are).

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C/ FUTURE SCENARIOS

Summary

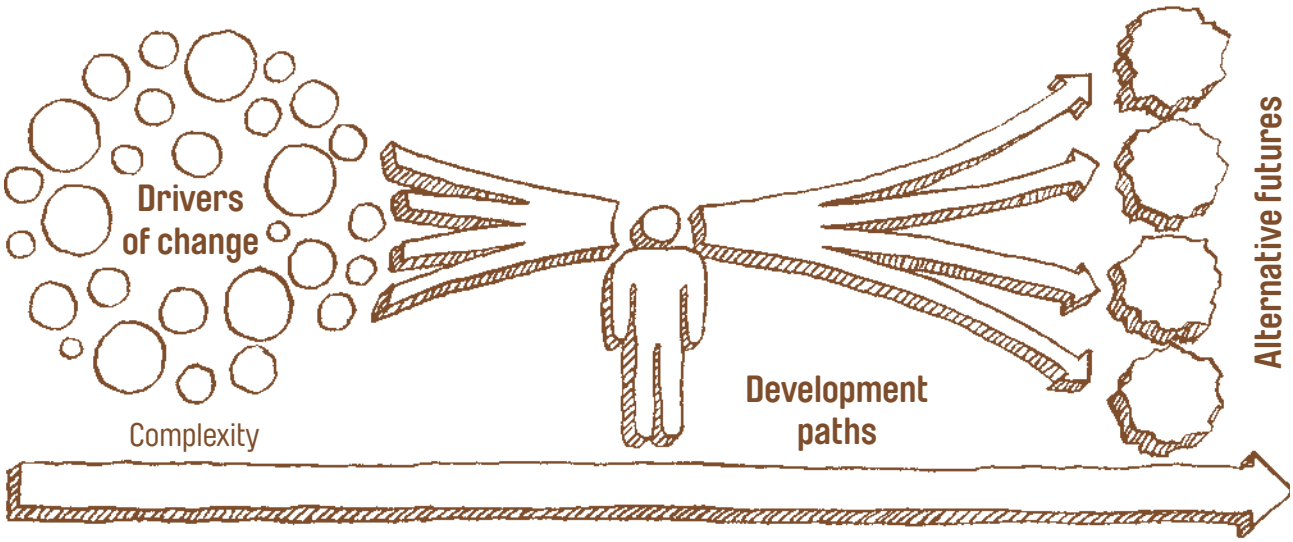
Scenarios are basically multiple stories about how the future might unfold. They help in understanding the uncertainty that goes with an open future. But the future is not empty: understanding it is also an invitation to intervene. Scenarios are wonderful containers for breakthrough ideas. They can also act as launching pads for action and experimentation. And in environments riddled by conflict they provide a safe space for dialogue. The approach is a veritable intellectual Swiss Army knife for dealing with 'wicked problems'.

As human beings, and more specifically as Westerners who embrace belief in progress and in the power of reason to shape the world according to our own understanding, we happen to be interested in the future. In response to that fascination people have adopted or developed intellectual strategies and practices to make sense of the not-yet-known.

Future scenarios are one of these devices that have been fielded in this quest. In fact, we are dealing here with an ancient practice – storytelling – that has been recontextualised against the background of our desire to come to terms with the future. So scenarios revolve around a very basic idea, namely that it is potentially useful to develop hypothetical descriptions of what the future might be.

We need to go just a little bit beyond this basic insight to capture the essence of the contemporary scenario practice. Indeed, distinctive of how people use future scenarios today is that these descriptions do not occur in isolation, but in sets. The point is not to tell just a gratuitous story about the future, but to develop different, internally consistent perspectives on what might come to pass. Hence, we are in agreement with Philip van Notten when he defines scenarios as "consistent and coherent descriptions of alternative hypothetical futures that reflect different perspectives on past, present and future developments, which can serve as a basis for action." That multiplicity is key as it entails a move away from a predictive stance that sees the future essentially as a unidirectional extrapolation of certain trends in the past, to an open and exploratory perspective that acknowledges uncertainty (see diagram on the opposite page).

The basic idea underlying the use of future scenarios is therefore quite simple and it is a practice that comes naturally to us. Given the simplicity it is perhaps not surprising that the scenario methodology has proved to be adaptable to many different circumstances and to serve a broad variety of goals. Scenario thinking has in some views been narrowed down to churning out 2-by-2 matrices (defining 4 scenarios) in standardised workshop formats. But the reality of the scenario practice is more complex than that. For instance, the database of the European Foresight Monitoring Network contains thousands of published studies. Although it is possible to find patterns in the



way the approach has been deployed the variety remains bewildering. This flexibility is a strength of the approach, but it is also a potential weakness. When it is not exactly clear what scenarios are meant to achieve it is very easy to go astray and end up with an end result that nobody really needs. The art of scenario development does really reside in connecting clearly stated objectives with available resources through a process that is enabling and fit-for-purpose.

To anchor a scenario exercise we need to agree first and foremost on a substantive focus. What are the scenarios going to be about? That is really a matter of our choice. We are free to think about global developments against a time horizon decades away, or about the future of our own community in the next couple of years.

Then we need to agree on what the purpose of the scenario development is. What would we like our effort to achieve? One way to get a grip on the approach's flexibility is the following typology of non-exclusive goals that may be pursued with scenarios:

- Interpreting: the world around us is complex, certainly when we are trying to understand long-term developments. Scenarios can be considered as a set of sophisticated lenses to observe our environment with. Each scenario allows us to attach meaning to signals we pick up through our interaction with the world. For example, a certain newspaper article may strike us as pointing to a future as embodied by scenario A. Another fits rather in scenario C. And so on. So by developing a set of future scenarios we have effectively constructed an antenna for us to observe and interpret our evolving environment with. Sometimes this process is also referred to as 'horizon scanning'.
- 'Windtunneling': organisations that are contemplating significant investments might want to test those against the background of possible futures. This is similar to engineers putting scale models of cars or airplanes in a wind tunnel to test their resilience when subjected to extraordinary forces. Ideally, critical decisions are robust in the face of uncertainty. That means that they perform more or less well against whatever future scenario we might think of. Caution is advised when decisions entail significant risks in any of

the scenarios. In this kind of scenario work solid research is key.

- Seeking alignment: sitting together to jointly imagine alternative futures is potentially a powerful and liberating experience, particularly in settings where violence and conflict have led to deep-seated distrust between stakeholders. No one has privileged insight into the long-term future. That is why the future is a safe conceptual space in which people can explore each other's worldviews and develop a shared language to talk about choices and developments that affect them all (albeit in different ways). In these settings the process is more important than the product. The purpose is to develop trust and social capital, not to display intellectual rigour.
- Agenda setting: stories about the future have an obvious communicative appeal. In the hands of activists they can be turned into a powerful vehicle for advocacy. Scenarios are then used as narratives that exemplify the negative implications of unwanted policy decisions or, vice versa, the desirable effects of a proper course of action. In this setting, scenarios are inevitably normative: they adopt a position – for or against, desirable or undesirable – with regard to the future. This judgmental quality can be used to energise and orient a societal debate around choices with important consequences.
- Reframing: one of the most decisive sources of competitive advantage is an organisation's ability to shed its familiar ways of looking at its environment and its own purpose. In management theory a powerful image has emerged to capture that ability: 'blue ocean strategy'. Rather than competing for the same prey (in a 'red', blood-saturated ocean) we are at liberty to bring to life a new opportunity space, based on a reframing of how the world works, what needs exist out there and how we might want to make a difference. Richard Normann has shown how scenarios can be used as a scaffolding for drawing new mental maps of our environment. These maps can gradually change the landscape for other actors as well.
- 'Enabling collaborative action': in a planning environment that is 'wicked', i.e. that is characterised by abundance of information and the continued friction between multiple worldviews, it is wiser to pursue a strategy of collaborative in(ter)vention than to simply draw up 'a plan'. In response, Angela Wilkinson has proposed to use scenarios as flexible canvases for a process of action learning. She calls them 'reflexive interventionist/multi-actor' (or RIMA) scenarios. They are reflexive because they feed a process of continuous reframing of the environment and our relationship with it. They are interventionist because they sustain action learning. In this setting, scenarios will only be part of a wider toolbox. They are not an end in themselves, but a vehicle to enable conversation, to explore ideas far beyond the status quo, to integrate various sources of knowledge and orient experimentation. We are moving closely to what Sondeijker has called 'transition scenarios'.

From the above it is obvious that scenarios are an intellectual and participatory Swiss army knife. They can be used in many different ways. Processes and resources will vary accordingly. Scenario projects do not have to be costly and time-consuming, however. In the right circumstances, with the right people around the table, an afternoon back-of-the-envelope exercise might do the trick. In other cases there will be no other way than to create time and space for deep research, building trust and broad communication.

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D/ DESIGN THINKING

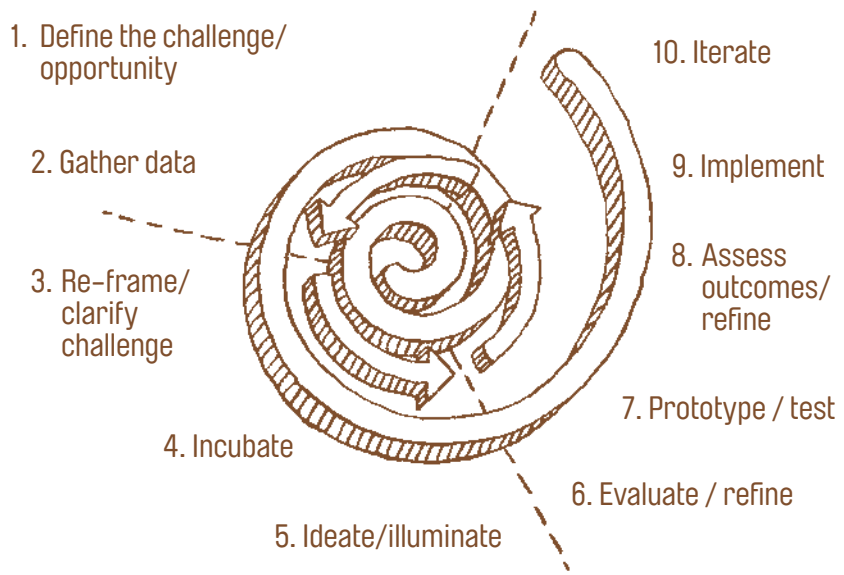
Summary

Design has just started to move away from shaping individual products and buildings to a more strategic agenda. Design thinkers approach the world as a giant laboratory. They are not intimidated by complexity but start with patient observation of the 'system-as-is'. Every 'problem' contains 'positive deviants': practices that contain the germs of novel solutions. Immersion leads to ideas, drawings, sketches, models, and back to observation and ideas. Visualisation and prototyping is a powerful means of catalysing new ideas and testing emergent solutions. Skillful design thinkers are reflective practitioners, engaged in a process of action learning.

For many people 'design' means still essentially 'styling': the art of giving pleasing or striking shapes to consumer products or buildings. But design has always been more than that. Recently this has become obvious in designers' move to more strategic briefings. Industrial designers are not only designing isolated products, but increasingly also consumer and citizen experiences, commercial and public services, and larger systems in the public sphere (in transport and health care, for example). Urban designers are looking beyond the scope of a single building or even a neighbourhood to some of the most complex systems on this planet: big cities embedded in their global hinterland. What underpins designers' ambitions to tackle these challenging issues? In two words: a mindset and a methodology. Recently these have been packaged and branded as 'design thinking'. But it's just another one of those unlucky oxymorons as design goes beyond 'thinking' to inextricably weave the 'doing' in the way it deals with reality.

Thomas Lockwood, President of the Design Management Institute characterises 'design thinking' as "a human-centered innovation process that emphasizes observation, collaboration, fast learning, visualization of ideas, rapid concept prototyping, and concurrent business analysis, which ultimately influences innovation and business strategy." What this means is that the way companies or public services create value is increasingly a reflection of what designers have always done: understand and reframe the needs and requirements of users, look for solutions together with these users and other stakeholders, visualise ideas and review those with users (see diagram on the next page). Let's look at each of these key steps in turn.

- Understanding the needs of users: design work does not start with abstractions but with a careful observation of lived reality. Urban designer Paola Vigano' refers to this process as 'having a conversation with a situation'. De-



signers immerse themselves and open themselves up to the system-as-is. They use a wide range of techniques to learn to look through other people's eyes: ethnographic methods (as used by anthropologists to study foreign cultures), participatory processes, mapping. This part of the work is potentially time consuming. In complex systems such as cities this process of data gathering can easily take many months.

› Reframing the needs of users: inevitably designers make choices about what and who to include in their studies and how to understand the purpose of the (service) system in the first place. This is not so much a separate step in a fixed process as a designerly instinct to see solutions and opportunities where other people see only problems. Designers always have a utopian streak. They refuse to be intimidated by complexity but start from the premise that 'anything is possible'. An architect opens up novel solutions when she recasts 'a social housing project' as 'an opportunity to new ways for different communities to live together'. Similarly, a service designer enables new experiences when he considers a patient as a person who has unique capabilities to maintain his or her quality of life, rather than as a deviance from normalcy. In framing challenges in new ways the scope of design thinking is always fundamentally critical.

› Visualise solutions: one of designers' most distinctive skills is to turn ideas into tangible shapes. Even in the age of computer modelling great architects will insist on making (sometimes hundreds of) models along the way in a complicated project. They do this not only to provide the user or client (who is usually less skilled in imagining three-dimensional structures) an idea of what the future reality might look like, but also to stimulate their own thinking. The actual process of using motor skills to draw or to make a model does something to the brain: modelling is a very special form of thinking. Again, a wide variety of formats may be used, ranging from tabletop maquettes to storyboards to more conceptual representations such as maps and cause or flow diagrams.

› Test solutions: design thinking is action learning. Prototypes, often made with very modest means, reveal a lot about how new solutions might work in real life. Of course, it's easy to make a dummy of a new shaving foam holder and much more difficult to get a handle on complex services and systems where many people are involved. Still, designers will ask users to play through different scenarios, for example with the help of LEGO bricks and figurines, or an improvised game board. The feedback that is generated from these experiences halfway between concept and solution is then an input for another iteration in the design process.

In its fundamentally critical positive outlook, design thinking connects very naturally to the domain of social innovation, where entrepreneurs are trying to find self-sustaining solutions for complex social and environmental challenges. Tim Brown, who leads the renowned design agency IDEO, recounts an illuminating story about how social innovator Jerry Sternin was able to reduce malnutrition among children in Vietnamese villages. Characteristically, he looked for solutions among families in these communities that were poor but nutritionally healthy enough (so-called 'positive deviants'). He observed food collection, preparation and serving behaviours in these families and found a few remarkable patterns. For example, they collected tiny shrimps, crabs, and snails (typically considered unsafe for kids) from rice paddies and added them to the food, along with the greens from sweet potatoes. Also they fed their children multiple smaller meals, which allowed small stomachs to hold and digest more food each day. Sternin brought these practices together in seminars and cooking classes. Eventually 80 percent of the 1,000 children enrolled in the program were adequately fed. In addition, the approach had been replicated within 14 villages across Vietnam.

This story captures many elements that are typical for a design thinking approach: it starts from a rather 'wicked problem', shows how innovators bypass accepted but inefficient solutions, how they rely on their observational skills to detect interesting patterns, recognise the value of actual users' knowledge and expand small-scale and local practices to a system scale.

Whilst this kind of design approach has been systematised (for example, a very helpful 'service design toolkit' is available online, see further reading section), it can never be a strict application of rational principles. Skilful designers operate as 'reflective practitioners': they engage with complexity and whilst doing so continuously re-examine their choices and theories in the light of deepening insight. The design process is essentially heuristic: it is an organised process of discovery. Theorist Sanford Kwinter characterised design's mission as "to free life of routine, to place it into syncopation so that it can find new, entirely unexpected patterns of unfolding."

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E/ APPRECIATIVE INQUIRY

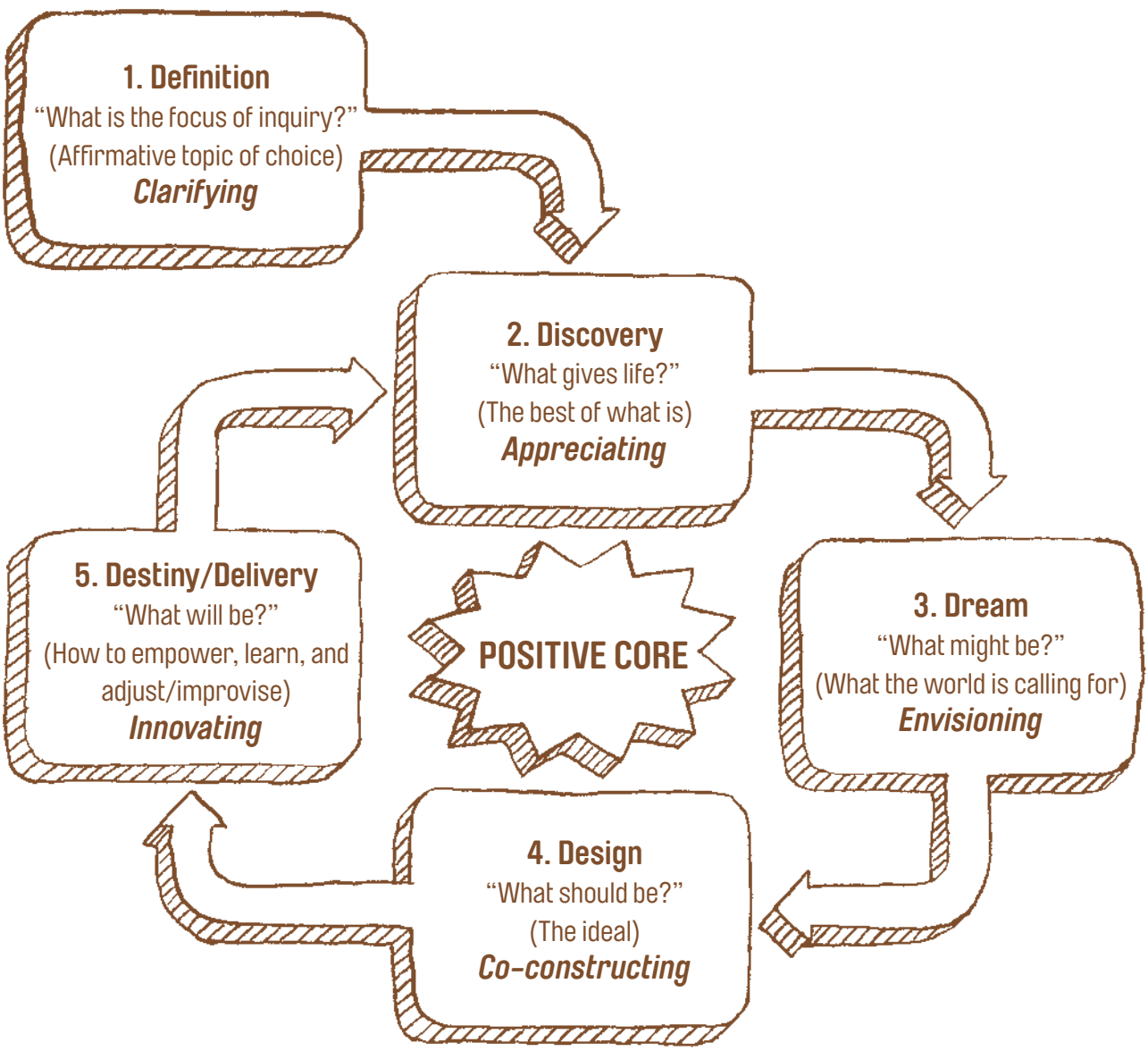
Summary

Appreciative Inquiry is a conversational practice that invites collectives to authentically voice their highest ambitions. It is a beautiful embodiment of the three ways to deal with complexity. As a design practice it is oriented towards bringing a new reality into life. It is systemic as it is a conscious effort to leverage the interdependence between the world and our mental maps of it. By envisioning we help ourselves to turn them into reality.

Appreciative Inquiry (AI) is an approach to initiate and sustain change in organisations by paying attention to what works. An AI practitioner would probably rebel against seeing the approach included in a discussion on how to tackle wicked problems. Because Appreciative Inquiry goes 100% against the grain of a problem solving culture that thinks everything can be fixed. AI is very outspoken in its assertion that focusing on problems does not bring lasting improvement and domesticates our appetite for change to the point where we are quite happy to live within our limitations. It's the story of the young elephant that is chained to a tree. It has learned that it cannot break free. Later, when the full-grown animal is attached with merely a light leash it will not attempt to move. The elephant still believes the leash is stronger than itself. In a similar way people are conditioned to stay within the limits of the feasible instead of focusing on the possible.

In its radical focus on opportunities and strengths Appreciative Inquiry carries forward a designerly ethos. Just like design thinking it is as much a mindset as a methodology. It is a mindset that rests on five well known principles:

- The Constructionist Principle holds that the way we think and organise knowledge about our lifeworld determines how we interact with and intervene in it. The way we know is fateful.
- The Principle of Simultaneity says that change and learning are intertwined. Once we are starting to ask questions about our situation, the change has already begun. Learning is action. Action is learning.
- The Poetic Principle is that organisations are not fixed 'things' but rather stories that invite continuous re-interpretation from different perspectives.
- The Anticipatory Principle alerts to the power of transporting ourselves to the future, to examine its possibilities and investigate what this means for us today.
- The Positive Principle recognises the extraordinary mobilising power of positive images and conversations. Hence, the more positive the questions used to guide a change process, the more lasting and effective the change.


1. Definition
"What is the focus of inquiry?"
(Affirmative topic of choice)
Clarifying
2. Discovery
"What gives life?"
(The best of what is)
Appreciating
3. Dream
"What might be?"
(What the world is calling for)
Envisioning
4. Design
"What should be?"
(The ideal)
Co-constructing
5. Destiny/Delivery
"What will be?"
(How to empower, learn, and adjust/improvise)
Innovating
POSITIVE CORE

As a methodology, Appreciative Inquiry proposes a 5D cycle (see diagram on the previous page):

- Definition: choose the topics that become the organisation's agenda for learning and innovation. They need to be framed as affirmative questions around issues valuable to all involved.
- Discovery: search collaboratively for 'the best of what is' by focusing on times of organisational excellence. A key result is a rich description of the organisation's positive core: its tangible and intangible strengths and assets.
- Dream: explore 'what might be' by expanding on the 'best of what is'. The outputs include creative and positive images of future possibilities.
- Design: co-construct a grounded vision to bring those future possibilities alive. Describe the social and technical infrastructures and required activities needed.
- Destiny: make explicit personal and organisational commitments.

AI looks straightforward, but it certainly isn't (so much for an affirmative statement). First because it is much harder than it seems to let go of the problem solving habit. Most organisations are open to learning from mistakes but are helpless when it comes to multiplying successes. They naturally adopt the practice of asking questions like "How can we do better?" from the background of "What didn't we do well?" Thereby they lock the affirmative perspective into a diagnostic framing, sapping energy from those involved in the process.

Another reason why AI is a demanding approach is that it finds its fullest expression in a transformation of the whole system. True, AI is very often used in coaching or organisational development trajectories involving teams, units or departments. It is, however, very difficult and ultimately counterproductive to compartmentalise islands of positive energy in an otherwise indifferent organisation. Eventually patience runs out and disenchantment sets in. Therefore, AI is best approached not as an intervention or as a process template but as a continual, systemic, self-reinforcing learning journey.

And in that journey the potential for a deep rupture with the status quo is always there. Appreciative inquiry creates a dialogic environment that excites the imagination. Where Soft Systems Methodology eschews consensus and settles for a more modest accommodation, people involved in AI reach for the stars. The stakes are played up rather than down. However, AI is not an exercise in recklessness. Because the image of what might be is firmly grounded in the lived reality of 'the best of what is'. ■

Further reading

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7 RULES OF THUMB

We have introduced the notion of wicked problems as a way of framing important challenges we are currently facing. Doing so expands the repertoire with which we make our way forward in a context of turbulence, high decision stakes, unclear goals, distributed power and persistent disagreements. We see systems thinking, dialogue and design as distinct but complementary ways of knowing and engaging with these wicked problems. Five approaches have been discussed that bring these three epistemologies together in different ways. Now we will take a step back and try to identify seven rules of thumb that can help in navigating wicked settings. Again we have to be aware that these guidelines are necessarily interconnected.

1 – MIX FLEXIBILITY AND RIGOUR

The approaches we have discussed here are starting points. Practiced in isolation they provide relatively safe and tested ground in navigating complex settings. A certain rigour in applying them is certainly recommended. Methodologies such as Soft Systems Methodology and Transition Management rely on essentially simple principles. There is power in the steadfast and uncompromising application of those principles or questions. Consider how sometimes we are awestruck by the improbable level of synchronisation in the movements of a flock of birds or a school of fish. Indeed, researchers have found that the ability to operationalise few and simple rules of interaction at all times – maintain a minimum distance! maintain the same speed as neighbouring objects! head towards the centre of the flock! – can explain this complex behaviour. So sticking to simple patterns may lead to solutions for intractable challenges.

However, dealing with wicked problems requires an odd mix of discipline and flexibility. Methods will vary because purpose and contexts vary. When operating in wicked settings it is safe to assume that there are no clear-cut scripts to rely on. As our insight into the problematic situation deepens, we may find out that we are not navigating towards a fixed harbour. By the time we arrive the destination has changed. Isolated methodologies will then not suffice. At the least we'll need to reconceptualise their application in different contexts. Transition Management, scenarios and design thinking offer a foil

for mixing and matching different tools ('multi-methodology'). We should not hesitate to make use of that inherent flexibility. All these approaches invite us to become reflective practitioners, willing to let go of the toolbox and re-examine our own choices and judgments.

2 – PURSUE GOAL-ORIENTED INCREMENTALISM

Operating in a 'wicked context' requires that we qualify the ambition to 'solve problems' or 'optimise solutions'. Often we need to be satisfied with more modest steps towards 'improvement' of the problematic situation. Related to transition management we referred to the paradoxical challenge of realising radical change through incremental steps. It's similar to scaling a peak via a challenging route. Climbers know it hardly helps to think obsessively about the summit when you are somewhere down on the mountain. It's too intimidating and saps energy. With the ultimate goal at the back of their minds they concentrate on the next pitch. Every small step opens up a new vista. A passage that seemed insurmountable sometimes becomes child's play when one moves up just a few centimeters.

People engaged in complex change processes will often be exasperated by the non-linearity of the journey. "Are we still on track? Are we guiding a transition in an effective and professional way? Or are we just muddling through?" These are the questions that plague system change agents when they are at sea with no shores in sight.

Unfortunately, this (reluctant) acceptance of partial open-endedness does not sit comfortably with the dominance of the project-based format. Funders like to think in terms of interventions limited in time, with a fixed end point, tightly managed resources and driven by evidence-based approaches. They want data on whether goals have been attained. Sometimes they want to know what the result will be before the process of inquiry has even started! System changers and transition pioneers need to fight for more open and adaptive mandates and less restrictive approaches to evaluation. If monitoring and evaluation wants to mean something in the context of dealing with wicked problems it has to position itself as co-creative, based on long-term partnering relationships between evaluators and those engaged in innovative initiatives.

3 – THINK ABUNDANCE, NOT SCARCITY

Goal-oriented incrementalism also engenders a pragmatic orientation towards experimentation: local coalescences of assets and energy for change that offer a tangible opportunity for improvement and, in the long run, may lead to capacity building and an adjustment of the wider system. Wicked problems cannot be solved by doing research and writing reports. Neither is it quite enough to go through the treadmill of participatory processes. In dealing with wicked problems we have to get our hands dirty. Experiments offers an opportunity to find out what works and what doesn't. They also help to visualise how a future, improved, more sustainable system might work. Experiments are stepping stones.

Entrepreneurs know a thing or two about experimenting. Successful entrepreneurs have been shown to operate on the basis of the principle of 'affordable loss'. The latter means that in decisions they ask themselves what they are willing to lose rather than what they would ultimately hope to gain. In other words entrepreneurs prefer options that create more options in the future over those that maximise returns. That is the spirit in which experiments need to be conceived.

Systems thinker Luc Hoebeke frames this within the tension between a scarcity and an abundance perspective: "Choosing in abundance always means that I am conscious of losing something. In scarcity, I have to find the 'right' solution to my problem, the best alternative, the 'winning' solution. In abundance, there is no 'best' solution which presents itself. Whatever is chosen, I will pay a price for it, because every choice forecloses options and opportunities."

An experiment is an expression of desire. Once one desire is legitimate, all the stakeholders can legitimate their own interest and desires. Which is how systemic change may eventually come about.

4 – DEVELOP A VIEW OF THE WHOLE

However, this focus on pragmatic incrementalism does not free us from the obligation to look for leverage points in the system. We know that wicked problems are characterised by abundant but usually poor data. We also know that usually there is not an obvious lever to pull to get things to move in the right direction. Experiments are a great vehicle for action research. In addition practitioners engaged in any of the approaches discussed will very often set great store in doing careful research to better understand the technical, social and political dimensions of the problem. Again a recipe book for system analysis does not exist. The toolbox is vast: there are methods to crunch numbers, to simulate, to map people's preferences and behaviours, flows and movements through space, to understand the structure of complex networks.

Visualisation is increasingly seen as a powerful strategy to synthesise the many layers of complexity in 2 or 3 dimensions. System maps and other visual formats can help people to see connections between the many factors at play in a wicked setting. But they do not offer in any way a quick fix. Patience is needed to get familiar with these complex landscapes. Even more challenging is the ability to communicate effectively about this complexity. This is much needed to share a sense of urgency and build new alliances. On the other hand, careless communication may lead people to feel unable to see the forest for the trees, which breeds resistance to change.

'The whole' is never an impartial assessment. An 'objective' description of a problematic situation does not exist (a core principle in Soft Systems Methodology). Even the most sophisticated systems analysis is based on value-bound judgments about what belongs to the system and what the purpose of it is. It is good to keep this normative dimension at all times in view. Be prepared to reopen the conversation on the framing of the system. Unless obstructionism is at play it's not a waste of time. It may offer a jumping-off point for new ideas, experiments and alliances.

5 – REFRAME WICKED PROBLEMS INTO WICKED OPPORTUNITIES

'Wicked problems' are only an alibi to admit that we face societal challenges for which no definitive answer exists. We've said it before: wickedness is just a way of framing complexity. The focus on 'problems' should not blind us to the myriads of opportunities out there. It's a choice to let ourselves be paralysed by complexity. We are at liberty to also consider it as a giant game board which can never be fully controlled by the powers that be.

Social innovators, entrepreneurs and activists very often do not think in terms of problems. They focus on bringing to life adaptive institutions in a 'wicked context'. They naturally reconceptualise 'wicked problems' as 'wicked opportunities'.

Language is central in 'taming' wicked problems. On the one hand, methodologies such as SSM demonstrate the need to be very sensitive to the kind of vocabulary we use ('problematic situations' instead of 'problems', 'accommodation' instead of 'consensus', etc.) This applies to all approaches where dialogue and joint sense making is key. Furthermore, our ability to reframe wicked problems hinges on our ability to introduce 'frame breaking language'. The concept of 'sustainable development' was a frame breaker at one point. It has spawned a new reality, new

practices, improbable alliances. Inevitably the language grows stale at a certain point. What are the frame breakers for today? It's not always about changing the whole world. We've discussed earlier how an architect breaks frames when she recasts a social housing project as an opportunity to new ways for different communities to live together. A doctor does the same when he addresses a patient as a person who has unique capabilities to maintain his or her quality of life, rather than as a deviance from normalcy.

Here also is a connection with the practice of leadership. A collective that is willing and able to work with wicked problems will evolve towards a certain leadership style. Sociologist Amitai Etzioni classified organisations by the type of power they use to direct the behavior of their members. He distinguished between coercive, calculative and normative mechanisms of compliance. Keith Grint thinks that wicked problems call for a normative style of leadership that embodies shared values and keeps the organisation on its toes by asking the right questions. The leader then functions as a midwife rather than as manager or commander.

6 – CREATE SPACE FOR SELF-ORGANISATION

A designer of racing bikes knows the machine has to fulfill two opposing demands. The bicycle needs to be rigid as it has to transport the rider's energy efficiently to the drive train and further onto the wheels. But a bike that is too stiff is also tiring as it bounces all the energy from bumps in the road back to the rider. So for optimal performance there needs to be a blend of efficiency and comfort. Similarly, in driving complex change processes we need to build in a judicious mix of rigidity and flexibility. Indeed, all living systems are characterized by tone, by dynamic equilibria, by contradictory forces. Securing and managing a balance between guidance and space for self-organisation is an art in dealing with wicked problems. Systems thinker Stafford Beer titled one of his books 'Designing Freedom' which is a very succinct way of making a similar point.

All of the approaches discussed earlier embody a particular way of putting in place guidance for change but leaving space for self-organisation. For example, in Soft Systems Methodology, the rigorous methodological framework creates fixity. So does the precise language. But the practice of illuminating the problematic situation from different worldviews is an emphatic way to create space for accommodation. Even the concept of accommodation itself, which is more fluid than an upfront ambition to reach consensus between stakeholders, is a way to build in flexibility. In Transition Management the vision provides direction but the experiments that emerge from the arena are likely to contribute to that vision in various ways. The fit between vision and experiments is dynamic and negotiable. Adaptive management shows how rigidity and space for self-organisation are an intrinsic part of the dynamics of complex ecosystems.

Pivotal in all approaches to deal with wicked problems is the role of social capital. New networks and personal relationships are a key lubricant to avoid gridlock. The approaches discussed earlier stress the importance of creating safe spaces to allow people to take part as a whole person, not merely as a mouthpiece to defend organisational interests.

7 – HAVE PATIENCE WITH POWER, BUT DRIVE IT HARD

Power remains a contentious issue in dealing with wicked problems. For innovators it's an obvious nuisance. If only the regime, the powers-that-be weren't there, it would be much easier to pilot a transition! However, those wanting to depart from the status quo need to recognise that change and friction go together. When those 'in charge' are not prodded by innovators, they become complacent and absorbed in day-to-day problem solving and negotiations. However, change agents also need the powers that favour the existing state of affairs. If not they become a victim of their own fantasies and imaginations. The question, therefore, is not how to do away with or circumvent power, but how to productively make use of the tension between conservation and change.

There is something to be learned about dealing with power from all of the methodologies discussed here. An approach as Soft Systems Methodology is refreshingly candid about the power issue: if there is no shared sense of urgency and ambition for change, then the accommodation between stakeholders will have only a limited scope. The resulting agenda for change will be restricted as well. But however modest, change there will be.

Design thinkers and scenario developers are most likely to tempt incumbents with persuasive (or threatening) images of future realities. In transition management it is the power of experiments that is most likely to win over the establishment. However, in transition the confrontation with power is often at its most acute, given the scale of the transition arena and the high stakes associated with it.

There is a tactical dimension to brokering change with those in charge. In that sense talking about 'transition' may not always be wise. It betrays our contemporary obsession with discontinuity, with the 'tabula rasa'. For those in charge this doesn't sound inviting. Furthermore, social scientists have pointed out that 'policy windows' exist: moments at which change efforts have a particularly favourable opportunity to influence the shape of emerging decisions (because of increasing awareness, external incidents, legislative cycles). Change agents do well to monitor and prepare for these windows.

One message that innovators should not cease to communicate to power holders who are totally unwilling to accommodate change is the simple given that, whether they like it or not, their system

is self-organising. Once people have decided for themselves that change is necessary it will be very difficult to keep the lid on it. Things are bound to change. So how can it be shepherded in an orderly, win-win fashion?

CONCLUSION

This brief survey has taught us that there are subtle and sophisticated approaches to work with wicked problems that take advantage of the richly generative dialectics of thinking, talking and doing. The seven rules of thumb remind us, however, that change in complex and contested settings remains a slippery mandate, beyond the reach of cookbook approaches. It requires people to be comfortable with paradoxes: to be decisive in the here and now whilst maintaining a view of the whole, to exercise patience with the slow pace of fast change, to mix rigour and flexibility, to discern abundance in scarcity. We need to learn to see these tensions as valuable as they lead to conversations that matter, and that help communities and organisations to reaffirm their roots and express their desires about the future. By shortcircuiting these tensions organisations will undermine themselves in a self-regulating way and disappear: without meaning there can be no organisations. ■

Iconography

On cover:
Mountain/Pillow
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Empty Frames.
Julien – 2008

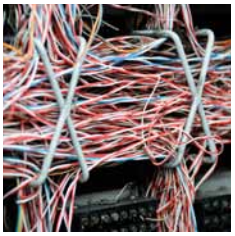
Failed: Insufficient bag space.
Fernando Rodríguez – 2009

A Serious Discussion.
SnapDoc – 2011

Washington D.C. Anti-Vietnam Demonstration. U.S. Marshals bodily remove one of the protesters during the outbreak of violence at the Pentagon Building.
U.S. National Archives and Records Administration – 1967

PappLab Auction.
Ars Electronica – 2010

Small problem...
Roadscum – 2012



Nœud de raccordement.
Niffilux

Déformation.
Raga photos – 2009

Labyrint in Nijmegen.
Harry Handige – 2007

Untitled.
Emma D – 2010

Wikimedia mindmap.
Lvova Anastasiya – 2010

Vélib' station de la rue Delesculze.
Groume – 2010

Climbing heaven.
Julio Martinez – 2012

myBOT.
Ars Electronica Futurelab – 2011

Shoes.
Martyn Kelly – 2009

User Requirements with Lego, a methodology to elicit user requirements for online communication applications..
webAtelier.net – 2011

Art viewers.
Opacity – 2008

Stay Positive.
Rob Patrick – 2011

Framed.
Jenn Peas – 2005

Run, hose!.
Bruna Camargo – 2008

An invasion ?
Yohann Aberkane – 2007

Beijing: Beihai Lake.
Antoine Roy – 2009

Ghandi stencil.
Zen Sutherland – 2007

Acknowledging the existence of wicked problems means admitting to face societal challenges for which no definitive answer exists. Wicked problems are structurally complex so that it is hard to say where a given problem stops and another one begins. And stakeholders will frame these challenges in different ways so that a one-size-fits-all solution is highly unlikely.

Thinking in terms of wicked problems opens up a novel repertoire of strategies to come to grips with these issues. However, we should guard against getting carried away by our ability to recognise and deal with complexity and conflict. Even in this complicated world 'simple' solutions remain possible.