In this presentation, I explain how a group of professionals think they successfully have led sustainable change of a complex social system.

A group of Dutch complexity leaders have written a book to reflect on their practice. They named the book “quarter makers of the future”. Although all of them had influential positions, none of them had the power to design and implement systems change single handedly. They did, however, each have some power to create room for interventions that can breed change. Hence the term quarter makers of the future; but they may also be called complexity leaders.

In the book, the authors analyze 20 cases of complex systems change, reflecting on what made them fail or succeed.
The thread that came up, is that quarter making is the art of making social systems resonate.

System resonance is like pushing someone on a swing.

After a victory for your football team, for example, you can toss your coach into the water with a few swings. Your coach behaves like a pendulum, with a frequency. If you keep the swings well-timed at the right frequency, your coach will get higher at each swing, until you can throw him into the water; your desired new system state.

Also system leaders can achieve a remarkable effect by resonance with a few small, but well-timed, interventions. But you have to discover, by trial and error, the right intervention and the right timing.

Resonance at critical leverage points can disrupt the system’s status quo by making the whole system vibrate. A sufficiently vibrating system is shaken loose and mobilized for change. The changemakers also could influence the change direction. After each vibration, complexity leaders from diverse parts of the social system analyzed the new system state, and the group moved on to a next stage, until the new state was desirable, and stable, enough to their taste.
What the quarter makers also have discovered, is that it has always helped to pay attention to the resonance of certain specific leverage points that indirectly can make the whole system resonate, making use of a kind of system acoustics.

It may also be possible to skew the platform for debate so that the mobilized vibrating system walks in the intended direction.

This platform is the actively collaborating arena, and the structure of interdependencies between actors in the system, influencing the real and perceived benefits of potential collaboration.

The leverage points which the quarter makers have discovered are shown on this slide, and I will now dedicate a slide to each one of these leverage points, in arbitrary order.
One leverage point is yourself.

You shouldn’t just be a soundboard for resonance of ideas generated by others, you should also make soundboards out of other leaders to resonate your ideas.

You can only do that if others literally feel that your motive is genuine.

Mahatma Gandhi put it like this: “You must become the change that you seek in the world”. Credibility starts with being an example to others, by taking risks that you need take if you want to shake the social system up.

Assuming you look for a sustainable development of the whole system and all in it, what resonates here, is your personal motivation and your intentions to become a connector in a divided world. You can sense that the timing is right if other leaders in the system share your motivation. But someone has to take the first step.
Your persuasiveness stems from the motive others see in you. Your perceived motive to act touches other people, who can become contaminated and who can again infect others.

This is how complexity leadership resonates at a personal level, without even having to use any of any of your formal powers. Your example is followed, and it emerges all around in the social system, and often nobody even may remember where it started.

The dark side of this leverage point is that also other leaders may be persuasive. Leaders who only connect partial social systems without having an eye for interdependencies outside their own part. If such leaders are successful, other parts can be harmed and after a while also the larger system, with all parts in it. If such partial leaders share no narratives with leaders in the adversely affected part of the system, both partial systems are socially disconnected. In other words, there is no overarching complexity leadership. Leaders who want to prevent that, will need to create resonance at other leverage points.
One leverage point is how you, and others, define success. What resonates here, are ideas about a desirable future state of the social system without yet going into avoidable controversial details and frames you need to justify action.

If such ideas resonate, they may become dominant enough in the social system to create space for a system-wide debate about the details and the frames.

Definitions of success that resonate in that way create their own reality, and indeed, perceptions become reality. Ideas shaping reality is sometimes called the Pygmalion effect, after the ancient Greek artist who, according to myth, created a sculpture so beautiful that it came to life.
This leverage point is a goal that appeals to people, and unites them, without having to be specific. It attracts, but in a strange way, without having to choose between options. As this can be abstract, it will not always directly motivate large groups to move to action, but it may give groups of complexity leaders from throughout the system legitimacy to look for more detailed official interventions at other leverage points.

Enough people may believe that success as defined by complexity leaders is possible, by adapting the system in some way that success is achieved and that this is for the good of all in it. However, if too many believe that this is impossible, other leaders may emerge who are just overwhelmed by complexity and who, rather than resonating connecting ideas, choose to resonate dividing ideas. If both kinds of leaders are attractive to people, the larger system can become polarized. The big question is, to which extent complexity leaders who genuinely look for survival of the whole system may influence the kind of messages that resonate among enough people. The key is not in how success is defined, but other leverage points.
One leverage point is the balance between position on the one hand, and on the other hand relation between complexity leaders throughout a social system.

Position gives leaders the power to intervene not just with ideas, and relationships build the trust that such interventions will be successful in a context of interdependence.

However, giving too much to others may weaken your own position, so you can’t intervene anymore. Balance is needed.

At this leverage point, ideas resonate about the nature of the game that different interest groups in the social system play together, as this game defines what is needed to have a position and a relation.

It is about the rules of the market and, in the Netherlands at least, it is about the formal and informal rules of the liberal democracy.

If parties have contradictory interests, they may still agree about rules of the game in such a way that it is not a zero sum game. It is about overcoming the tragedy of the commons.
Such rules should enable all parties to do two things at the same time: first, represent their own interest. Second, represent shared interests. Parties then can fight and collaborate at the same time, over different things. The fight is over the short term, the collaboration over the long term.

If someone breaks the rules that enable collaboration in a context of conflict, they put the relationship at risk. They choose for a gain of position in the short term, but harm the relationship which they need in the long term for joint interests.

One joint interest usually perceived, is to prevent full open war. And still there is always competition and conflict at some level, and the rules of the game are constantly challenged, and rule enforcement is needed.

Like Aristotle has written: we make war that we may live in peace.

Also the rules of liberal democracies should constantly be challenged, if only to prevent that the short-term games, producing our wealth in the short term, go out flat because of an overdose of rules. It is therefore always a balance, between position and relation.
The previous leverage points are all related to informal leadership processes. This leverage point, in addition, is the emergence of the narratives that justify official action.

When strangely attractive ideas about success resonate informally, it doesn’t automatically mean that large supporter groups immediately move into action or that they will support specific changes and official interventions.

Official action, needs justification by political frames that are attractive to large groups, so that these will support the associated official interventions.

Here, competing leader groups may try to resonate competing narratives. Common people, overwhelmed by complexity, may see more risks than opportunities and stay on the safe side, preferring the short term rather than the long term, if they can see the long term interest at all.
Complexity leaders who are looking for success in the long term as well as in the short term, need to discover which narratives will serve these goals and also will resonate in larger parts of society.

This is a difficult quest for innovative ideas, and complexity leaders will depend on the creativity of diverse people who can spend enough time in this search process. Sponsors in the top, attracted by definitions of success, enable change networks at the bottom who can develop persuasive narratives. In complex systems this always relates to tops and bottoms of diverse networked organizations.

This leverage point is illustrated by the quote on the slide, which is from Rachel Carson. It is about the wisdom of narratives that emerge as emotions and facts resonate between tops and bottoms of diverse networked organizations.
One leverage point is playing with openness and closedness to create a safe space for co-creation of narratives that justify official interventions.

Here, ideas resonate about how different components of the social system may work together to that end.

If there is competition and conflict, it may not be easy to collaborate. Different supporter groups may not understand that it is possible or worthwhile to collaborate with the enemy.

It may be necessary for leaders who look for common interests, to meet unofficially, sometimes even in secret, at first. The reason is if a leader wants to frame a common challenge in a new and connecting way in public to see how it resonates among his supporters, this leader needs first to trust that enough other leaders will not attack that new frame.

However, as delicate cooperation emerges in backrooms as cradles of new connecting narratives, so do conspiracies. Outsiders cannot tell the difference. This is why paranoid social systems can become paralyzed.
Complexity leaders therefore may resonate their explanations for working together in backrooms and make their new ideas public as soon as it is safe enough, in rounds of development. Once ideas are public, it is possible to officially dedicate resources to organise front rooms to further develop these ideas, like projects, task forces and prototypes.

Fortunately, as we get better at collaborating, processes can be made more transparent. Yet, each transparent front room will also need a backroom. In liberal democracies, the total amount of deliberative interactions will therefore grow, as front rooms and backrooms coevolve and branch out.

Complexity leaders may play with this openness and closedness to create the best balance of trust between leaders with diverse interests, and trust between all these leaders and their supporters. If the lever works, trust in the whole system goes up, and less secrecy will be needed.
One point of leverage is the composition of the active arena that negotiates about acceptable interventions. What resonates here, are ideas about who is most needed to make progress in a complexity leadership network; in other words, who is missing as a new crucial dependency has been discovered.

These ideas about network composition co-evolve with the narratives and political frames that emerge in the network: the narratives determine what the next step needs to be, and who is needed to make that step. New actors are always first approached in backrooms, and as soon as there is enough trust that progress will be delivered, this may be institutionalised in front rooms.

In short, narratives co-evolve with arena compositions, enabled by narratives resonating between backrooms and front rooms.

Proactive social change is a situation of chicken and egg: none of both was there first, and yet they both were there first, as they coevolved from an earlier situation where none of both existed.

By aiming for co-evolution, letting ideas resonate between front rooms and backrooms, groups of complexity leaders can change the perceptions of all actors in the whole system. Even if it seems impossible at first, like in the case of the chicken and the egg.
One overarching leverage point is the overview of all other system leverage points: where to act first? What is the weakest link?

The Dutch practitioners found that they were most successful if they payed attention to all leverage points, and sought out those that impede cocreation of change. It helped to focus on the ones where most leverage is expected, both at the leverage point itself, and indirectly in the whole system.

In this way, they often saw social systems vibrate to a new equilibrium.
Practitioners see this theory of system resonance emerge from their practice. They have written it down with the help of social scientists. But is it scientific?

Perhaps. If groups of practitioners can see system components vibrating, why not scientists? If practitioners can reconstruct their own role among the causes of these vibrations, why not scientists? If practitioners can see a system vibrate to a different system state, why not scientists?

The problem is, however, that scientists who study system change in its earliest stages, can only look through the eyes of connected complexity leaders. There is no other way to observing the perceptions complexity leaders have of social systems and motives, than through their own eyes. The best a scientist can produce is a description of the inter-subjective collective views in a complexity leadership network that connects the system.

Such scientist can make their own hypothesis about how a social system works, and ask complexity leaders from all parts of that system to which extend they trust in the motives and capabilities of leaders in other parts of the system, and why.

If this leads to overarching system perceptions that connect leaders from diverse parts of the system, it is plausible that complexity leadership for the larger whole exists in this system.
Scientists may also help complexity leaders to design interventions, in which case the scientist has become part of the system himself, as a reflexive practitioner. This research strategy was already promoted by Aristotle. Its power is that it helps identify levers for sustainable development. Its weakness is that it is intersubjective, and therefore in a polarized system the conclusions will only be recognized by those who are sufficiently connected.

In the book Quarter makers of the future, a core group of reflexive practitioners of complexity leadership have invited many colleagues to reflect about leverage points. Some have written their story in the book by themselves, others have asked the core group to write it for them. Other than resonance, the group discovered that it is not easy to grasp these processes as they are so subtle and their explanatory narratives have so many context levels.
Deng Xiaoping famously said, “we are crossing the river by feeling the stones”.

Looking for success, you will only know what it precisely is after you find it, taking one step at a time. It is also what quarter makers do, and it is tempting to try to put that in scientific terms.

Recent scientific theories about social complexity build on theories of physical chaos and complexity and on evolutionary biology. A unifying and coherent theory does not exist yet.

Any narrative understandable to intelligent non-experts has to limit to metaphorical use of its concepts.

The short version is that social systems can be governed by networks of complexity leaders if they can create strange attractors in the world of ideas, which are the definitions of success.

Let’s say: the other side of a river. This perspective motivates the system to develop steps toward concrete point attractors: the stepping stone which have to be discovered, as many are under water.
Steps must be made simultaneously in many system parts, and change thus coevolves throughout the system toward non linear changes that might lead to success.
Deng Xiaoping’s “feeling the stones”, may perhaps be put in complexity language as “sensing the attractors”. The following terms from complexity theory seem to apply.

**Resonance** is used in physical systems where time/space is bridged by waves that may interfere and resonate. Some sociological theories assume that social systems can be adequately described like waves of communication. A physical particle is a metaphor for a communicated idea, and a wave is a metaphor for a communication pattern, like in physics light and gravity are particles and waves at the same time.

The communication patterns determine how people behave. Individuals only rarely can influence these patterns, if deviant behavior resonates. Waves of social communication are not directly observable; only individual communications are (like particles).

Einstein’s theory of gravity waves took 100 years to be measured for the first time, but communication waves may be less easy to accept for many people. The reason is that people are themselves object of study and they may prefer to think they are in control of their behavior, rather than slave of the system; being a resonating node in a communication network.

This is counter-intuitive if you interpret the human world as one of hierarchical
relationships, where somebody at the top is – or should be - in control.
Co-evolution is a word from biology that represents the phenomenon that the evolution of different species can be causally linked. Predators may specialize to catch specific prey, and that prey may in return specialize to escape these very predators. They evolve together.

Metaphorically, coevolution can also be observed between the human world and the physical world (for example our landscapes co-evolve with the way in which we use them). It can be observed between organizations (for example, if one producer evolves to a specific unique selling point, another may evolve to another unique selling point so that they both can survive).

And finally it can be observed between ideas (for example, as the Alt-right flourishes in the US, the Antifa also can flourish as a reaction).
Co-evolution in leadership may be interpreted as the process between leaders in different interdependent subsystems who consciously try to lead their own subsystem in such a way that in the short term each individually, and in the long term their joint system, both can survive.

To that end they can develop their own local communication pattern “between leaders”. Ideas about joint futures should resonate first locally before leaders can safely communicate them out in the open with their larger supporter groups. This is why backrooms remain necessary for survival of larger systems.

Without backrooms, leaders would either be paralyzed or forced to take the risk that they will lose their power, in which case the leadership is also paralyzed and the system might not be able to adapt, if needed. Resilient systems, capable to adapt when needed, depend on an internal structure and on leadership to adapt that structure.
More enigmatic but useful metaphors from physics are the attractors.

Complex dynamic physical systems evolve toward states that are called attractors. That state may be fixed: a point attractor. It is the photograph you can observe each time the system is in equilibrium.

It may also be an endless cycle: a pendulum attractor; a repeated film. It may also be a set of possible states: a strange attractor. A film without repetition that will not include all possible scenes (system states).

The word attractor is appealing for use in social systems, as clearly, people and their communications move toward something – or away from something. It is not pure chaos, although different groups who don’t agree might end up in chaos, destroying each other.

But the analogy is partial. Point and pendulum attractors only exist in isolated parts of the social system, where behavior is driven more by internal interdependencies than external interdependencies. If the environment were static, there may be attractors, but the environment changes relatively slowly, at larger space/time scales. The point and
pendulum attractors exist only in that isolated, temporary logic. They are not really stable, as developments in the larger system undermine their stability.
It is tempting to interpret social attractors as the ideas that appear to resonate, although the analogy with physical attractors is actually not so straightforward. Leaders may look for ideas about the future of complex systems. As they are not enough in control to make these futures reality, they rely on resonance to be influential. If first the communication patterns change by resonance, then the action patterns will also change.
Management theorists claim that something like a third of the system has to be in favor of the change before the full scale transition sets in. In other words, the underlying institutional system and physical system will only then be influenced. This makes the leadership processes to get to the 30% both isolated in the communication system, and crucial for survival. It therefore seems important to understand how the 30% can be achieved, and if a word like “attractors” helps to understand that.
How can leaders manage attractors to move the system? Making a first try:

**Being outside and in.** A state of a social system, like a physical system, belongs to a regime; the system will oscillate to an attractor state, but which attractor depends on its initial state. If the system is close to an attractor, an outside force is needed to move the system to a different regime with a different attractor. Complexity leadership is at the same time outside the regime and in the regime. It is outside as it is in backrooms at first, and as soon as it steps in the open it is in the regime again making an intervention. Such interventions can change the state of the system, but only if it resonates enough, it can get to 30% and move over the hill, changing the attractor. This also implies by definition that attractors first emerge in secluded leadership spaces who actively try to resonate it further. The highly embedded communication patterns of complexity leaders, like those of embedded neural networks in the brain, enable intelligent behavior. At the same time, the reptile brain, more at the bottom, can govern other behavior.
The next stone is a point attractor: a narrative. Leaders who all know a different part of the system well, and have an influence in it, may actively synchronize their ideas and their interventions – with a view to resonance in the larger system. They can put their partial observations together, and “see” adjacent possible regimes as well as the disturbances they can create that may help getting there. They can look for sets of intervention points they can use to leverage the disturbances their interventions cause, to move the system to a more desirable regime. They share these thought by means of narratives.

It should be remembered that attractors in social systems only have temporary and local significance. After a while, underlying, slower, context changes will affect the attractors, and at larger time/space scales, there are no point and pendulum attractors but only strange attractors, and these also evolve.
The other shore is a strange attractor: success. Each such step can be seen a stone in Deng Xiaoping’s river, but the next stone can only be seen once you have made the step to the first stone. The river and its other shore, if appealing to large groups, are metaphors for a strange attractor: a set of possible desirable futures. Defining success is therefore the first leverage point. It creates the constructive tension that drives the system to look for a next stone. The step to the next stone must highly concrete not to fall into the river, and to make that step the next stone should therefore be a point attractor, an appealing narrative about where to put your foot.
Without strange attractor no point attractor. This is what makes narratives about adjacent regimes at first controversial: where will the next stone lead to? Adjacent possible regimes are not automatically better than the current regime. To develop courage to make such a jump into the unknown, leaders, in communication with their supporters, therefore not only develop and resonate narratives about adjacent possible regimes, but also about how this could be a step to success in the long term: crossing the river, whatever the other shore precisely looks like.
Dancing in the scales. Strange attractors in social systems still mean nothing if they cannot influence the development of norms, rules and structures (institutions) and co-evolve with them, and if institutions cannot again co-evolve with the natural (physical and biological) systems. Successful social strange attractors and the associated narratives therefor encompass all these three embedded system levels – or “scales”. At the same time, they remain “theory” until the idea resonates enough and the next step is actually made.
However, crossing a river together in coevolution may not lead to a desirable future after all.

Even if intentions are for the common good, the judgement of quarter makers may fail.

And Aristotelian science offers no “absolute” scientific judgement to determine whether what quarter makers achieve is good or bad.