Transitions through reflexive interventions in governance networks

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Abstract
Transitions toward a desirable future require changes at the level of social networks that 'manage' or 'govern' societal systems. Learning is a crucial component of transitions, because transitions require change while it is not known yet how to realize that change. Intervention is another crucial component of transition which is essential in order to realize change in networks which are full of established routines and vested interests. In this paper we explore how learning and intervention can be fruitfully combined in an approach which we call 'reflexive interventions'. In that way, learning is not purely theoretical and intervention is not purely based on routine. We describe a practical method of 'reflexive intervention' in the early stages of change processes, and we do a preliminary assessment of its effectiveness. We conclude that they are probably a contribution to 'knowledge-democracy'.

Introduction

The term 'knowledge democracy', the main theme of this RMNO conference, suggests that the decisions that shape our development should not only be based on power, but also on knowledge. These decisions are influenced by the democratic process, which changes the power structure in society since it increases interdependencies between interests and groups. These interdependencies have led to the emergence of horizontal (cooperative) forms of governance, next to pre-existing hierarchical governance. Formal power is however still exercised by those in official positions, who probably stay in that position because they are successful in terms of the official targets of their organization (as already Machiavelli has written). They base their action on knowledge and beliefs about the link between their visible personal conduct and their visible success, but not necessarily on the wider consequences of their conduct. They might feel little ownership of these wider consequences and risks, even if these are known. Then, only part of the available knowledge is used. Unless we somehow can develop a well-operating knowledge-democracy, knowledge for which there is no problem-owner may not be applied in decision-making. In this paper we look for new ways to operate knowledge democracy.

The link between knowledge and decisions has been widely studied in many disciplines. For example, theories about governance of complex societal systems, which our modern society certainly is, use words like multi-level, regime, niche, lock-in, co-evolution, non-linear change, transition, transition management and transition arena (e.g. Rotmans et al 2001, Loorbach 2006, Nooteboom & Marks 2009, Gerrits 2008, Teisman et al. 2009). Such transitions may be required for a sustainable development of our society (e.g. NRC, 1999, Rotmans et al 2001, Loorbach 2006, Nooteboom & Marks 2009).

Despite our view that theories of the governance of transitions in complex societal systems are meaningful, in this paper we do not directly depart from such theories. Rather, we ask how such theories may, in a metaphorical sense, inspire people who are involved in governance processes. To answer that question we use theory about learning in networks to develop a hypothesis we call 'reflexive interventions', which we operationalize and test in practice.

Theories about learning in networks

Theories of learning and social change are abundant, from deeply theoretical authors like Luhmann and Giddens to more practical oriented authors like Fritz (1989) and Senge (1990). From such theories, we take two key ideas: learning requires intervention and reflection.

Interventions
Interventions are required because networks of people capable of changing a societal system are naturally inert. Active intervention is required since trying to implement changes in existing institutions requires resources, and more often than not implies conflicts with vested interests. Something from outside needs to make network members think about change. When that happens, they may enact change by small interventions in the network. These contributions may start a cascade of change from small to larger system levels, and also the thinking process itself to develop these contributions may be triggered by an intervention or lever (e.g. Senge 1990, Nooteboom & Marks 2009).

Reflection
Reflection is required to imagine possible futures at different system levels, and the cascade of change that may lead to more desirable futures. It is a creative process (e.g. Fritz 1989), where possible interventions in existing practices may be invented; levers that may build-up some tension to trigger non-linear change at another system level. Theories of action learning (e.g. Revans 1980) indicate that such change-attempts can be monitored continuously in order to estimate their effectiveness and to adjust the interventions if needed.
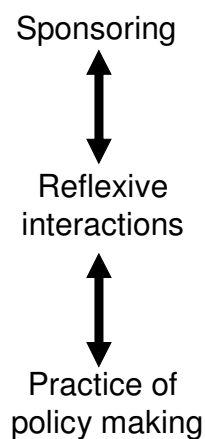
Reflexive interventions
So, we are interested in 'reflexive interventions' in networks. We define these as:

'interactions between policy makers who are driven by both motives of power and knowledge. These interactions enable them to generate real larger-scale change in their network, as a possible contribution to transitions that to their knowledge are desirable from a larger system point of view. The interactions are separate from primary working practice of policymakers, but have a direct influence on it. They are organizable and observable.'

In other words, they are aimed at personal, organizational and societal objectives that are not given in the political (power) process, but that are derived from the personal analysis of the participants. If reflexive interventions are successful, larger scale (but still small) interventions emerge, like a different design of a cooperation agreement, a policy document, a construction project, or an act in the media. If these are the result

of the reflexive intervention, participants should be able to explain the link with that intervention.

Reflexive interventions, costing at least some personal time and perhaps involving some risk when interventions are discovered and implemented, can be enabled by the participants themselves, mobilizing their personal resources, or by outsiders who provide resources. These may be termed 'sponsors' enacting the reflexive intervention[1], which co-evolve with the policy practices where small interventions in the policy system are made and tested. The co-evolution between sponsoring (influencing at the management level), reflexive interactions and the practice of policy making is presented in the following diagram.

Sponsoring

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Reflexive
interactions

↕

Practice of
policy making

Models to design and evaluate reflexive interactions have emerged in theories about action learning (e.g. Revans 1980; Schon & Rein 1994). Senge (1990) has added systems analysis as tool in this process. We ask how policy makers may be inspired by an adequate analysis of the complex societal system they operate in, and how they might look for ways of doing their work in such a way that not only their personal objectives are achieved, but also those of their organization and the interests of the larger societal system.

Such a method of reflexive intervention, using ideas from complex systems analysis, has been developed and applied in the Netherlands. We will describe it hereafter. Our question is: do these effectively contribute to desirable transitions – in the eyes of the participants?

A practical method for making reflexive interventions

A practical method, termed 'the masterclass method', has emerged in The Netherlands and it has been applied in dozens of groups, involved in a variety of complex systems like education, health care, consumer electronics, water management, spatial management, and sustainable innovations in transport. It is

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[1] Personal reward for such investment of their time is uncertain, and those making reflexive interventions possible are thefore enacting 'enabling leadership'. Enabling leadership is one component of leadership in complex systems as theorized by Uhl Bien and Marion (2008).

explicitly aimed at achieving transitions, and it has not been systematically researched before. In this section we describe its main characteristics, which have been shaped through the experience of the moderators of the method. Several of its characteristics appear to fit scientific theories about effective methods for learning in groups.

Assembling small and balanced groups. Small groups (6 persons) are convened to develop interventions for larger groups. The intervention consists of bringing people together who potentially might design effective larger group interventions, but who still have to develop trust and clear ideas. These peers should have complementary knowledge and influence. They may not usually interact, whilst they should form part of the same system. A bit extreme example, workers in India who sell their products to consumers in Europe might interact directly. Also theories of network management indicate that learning and intervention should include interactions across social boundaries to stimulate empathic understanding in order to develop practicable courses of actions (e.g. Kickert et al 1997; In 't Veld et al. 1991).

The masterclass method focuses on the individual's actions between which synergy may emerge or not. The assumption is that it is easier to develop trust in small groups, and in a setting where there are little expectations of what they will deliver, other than that this should be ideas about larger scale interventions. Theories indicate that trust is crucial to arrive at openness, which is crucial for reflection (e.g. Nooteboom, 2002), and it should therefore be detached from the power processes of governance to allow a reflexive attitude (e.g. Scharpf 1997, Nooteboom 2006).

Balancing learning on the job with learning out of the job. In the life of professionals there is little time for learning as a separate activity, and learning therefore should preferably be defined as a component of projects for which the participant is rewarded directly – i.e. that directly contributes to the primary process of his organization. Theories about education and training indicate that learning occurs best on-the-job, rather than in training isolated from practical situations (e.g. Taris 2007).

Yet, if learning already is part of the well-defined results of a project, the desired change already would have occurred (problems cannot be solved with the same thinking that created them – as Einstein has said). The method therefore intervenes from outside in ongoing policy practices but it is directly connected with them to generate directly observable improvement in the primary task that contributes to a wider goal as well. Three sessions are organized with intervals of about a month. After each session the advice is immediately tested out in practice, and results are discussed in the next session. The following diagram shows a frequently applied set-up, where 'sponsors' at high management level participate in the steps colored in red.
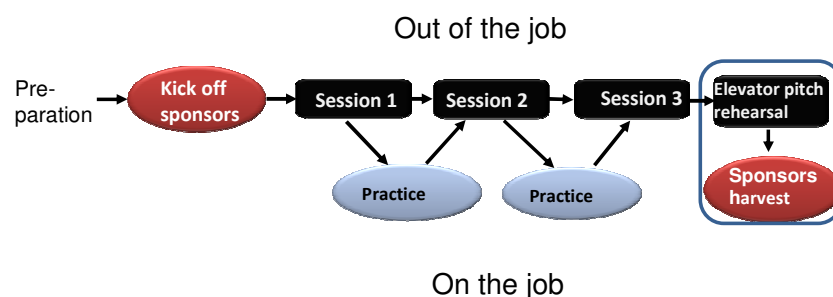
Connecting the learning process of individuals with their organizations and with the larger system. Individuals may learn, but their organization has to facilitate the implementation of the lessons they have learned (the interventions), or there will be no resources available for a larger-scale intervention (e.g. Revans 1980). In other words, participants need sponsorship at higher management level. The masterclass method generally includes higher managers as sponsors who are looking for initiatives they can sponsor. Desirability of the interventions are based on a shared analysis of the connected possible futures of the larger system, the organization and the individual. This mini-system analysis is based on the knowledge of the participating individuals. The interventions they 'invent' may be aimed at developing more knowledge, and sharing that in larger networks, before interventions into the primary processes in the societal system become acceptable.

Involving 'masters of political sensitivity'. It is the experience of the masterclass moderators that professionals are widely believed to be well trained in structuring their work in projects that have clear objectives and to approach these objectives efficiently. However, in the case of desirable transitions, this is in their view insufficient. Projects should change existing goals, and to that end projects should be organized in a more hybrid way – involving people who do not usually interact and are influential in different subsystems. Thereby, different perceptions can 'merge' and reframing may occur, and the team can communicate in a different way with their stakeholder groups (larger-scale 'knowledge interventions'). Reframing project activities is an inherently political activity. This is a different skill than what most policy makers have been trained for, which is to implement projects efficiently whilst reducing political risk in terms of the original objectives. The challenge in most masterclasses is defined by the participants as to increase their political sensitivity so that project leaders can see which opportunities there are in the political system to propose new project objectives, getting closer to the 'regime core' (i.e. the positions where interventions with large-scale effects are possible).

This challenge is widely recognized, and in many situations there are 'heroes' available and widely acknowledged, who have displayed this skill and may serve as a role model to others. The masterclass method involves such heroes, who participate as 'master': role models reflecting out of their personal experience on the challenges of the participants. The importance of exemplars and role models has also been indicated, for example, by B. Nooteboom (2002).

Applying a 'reverse learning method'. To secure a high quality interaction between participants and master, the 'reverse learning method' is applied. This is a reversal of the method that is usual in class situations, where a master gives a presentation, after which participants ask questions and try to apply lessons in their own work. In stead, the participant gives a presentation, the other participants give feedback, and the presenter has a dialogue with the master, in the presence of all other participants. The master reacts, as if (s)he were a coach. All participants already share a profession with
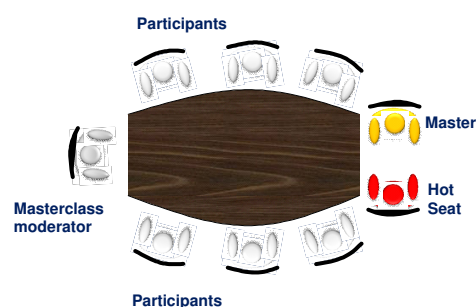
the master, and the sessions are intended to improve the quality of their interventions.

The website of the masterclass method (www.masterclassacademy.nl) indicates that 'the origin of this method goes back to the Greek philosopher Socrates, and has been used by many others from Mozart to Einstein. Well known are masterclasses in music. The foundation for this way of skill developing lies in the given fact of the participating musician already being talented and experienced: he or she is already evolving towards becoming a 'master' on his own.'

The reverse learning method also includes that participants are instructed to develop their presentation (their performance on stage as if it were music) reasoning backwards from societal issues, via the interest and agenda of their organization, to their personal task and approach. From there, they indicate which barriers they run into, where they look for help, and how they do that. The other participants and the master reflect on that and develop a concrete advice for the participant for action, based on strategic considerations reasoning backwards. To this end, they all inspire each other to a joint system analysis that is meaningful for each individual's action. Synergy between the individual's action may emerge from there.

By explicitly lining up societal interest, organizational interest and personal interest, political risk of innovative action (the master's advice) is moderate. According to the moderators this way of working creates a tension between a) what the group believes to be in the common as well as in the personal interest, and b) what each individual participant is currently doing. From this tension, creative ideas for action are supposed to emerge. The active participation of sponsors who underscore urgency at a kick off and harvest result at a final session, as well as well known and highly respected role models, increases the expectations and therefore the tension. This may lead to a structural tension as described by Fritz (1989) as a crucial prerequisite of creative processes. It also may help creating a management context to stimulate a reflective practice and frame reflection (Schon 1994). The moderators indicate that in their view, each participant feels ownership for the actions defined for his challenge, because he co-creates the analysis and the actions with the others, and because the final proposition is presented as an elevator pitch to their organization.

Method

How can the effectiveness of this method of reflexive intervention, in particular its elements of complex systems analysis, be investigated? We have approached the research question by applying common techniques like participant observation, informal interviews, narrative analysis, content analysis.

We are interested in the effectiveness as a contribution to desirable transitions, and we meet the paradox that this is only knowable to the participants with their limited frames and knowledge. We address this paradox by recording their narratives: how do the participants explain that the interventions they invent might contribute to widely desirable transitions? Do they use metaphors from theories of complex transitions? Do they use examples from the past, expressed in complexity terms, as an inspiration for behavior in the present? Finally, we assume that if a group of participants work in a similar large societal system but in different organizations with different interest, and even in different domains (like the private, public and civil domains), their joint

narrative will be more adequate and closer to what large groups in the societal system would support if they had the knowledge shared by the participants. This may be evaluated by asking participants about their narratives, also separately to reduce the chance that their stories are shaped under social pressure (for narrative analysis of policy in complex systems, see e.g. Hajer & Wagenaar 2003; Baskin 2008).

To make the narratives stronger, they should convince peers (primarily the other participants of the sessions) and sponsors (present at sponsor sessions) that the participants have actually developed new interventions that the organization can facilitate, and that create a potential cascade of interventions to larger levels of scale that has a chance of contributing to a transition desirable by all participants. And these should actually be implemented in policy practice. The participants, masters and sponsors should attribute their success to the reflexive intervention created by the masterclass sessions, which they can state in interviews and meetings, and underline by their willingness to contribute to new masterclasses.

In each of the cases, we identify several embedded system levels of change, although the largest level (global sustainability) is not always addressable. In each case, the peers and masters worked at different organizations, or at different departments in large organizations.

Preliminary results

The case of the manager of a large spatial investment program
One of the large cities of The Netherlands has a central railway station, and a surrounding area, that is widely seen as unattractive, not realizing its potential. A masterplan for this area had been developed and had been adopted by the local authorities. Private investments formed a significant component of the masterplan, as well as the idea to improve the quality of the public space in general and to reduce air pollution and energy use.

The transport infrastructure and public transport formed a key component. The program manager, responsible for development of the plan and now starting with its implementation, met a couple of barriers, which he brought into the masterclass. His organization had been well geared to develop the masterplan, but was insufficiently capable of dealing with developers, lawyers and contractors in the phase of actual detailed design, financing, permit acquiring and construction. The masterplan interrelated with other spatial infrastructural investments in the city, which did not fall under his responsibility. The program manager participated in a masterclass with counterparts from other cities and other people participating in development and implementation of large spatial investments at city level. Masters were a former minister of environment and spatial development, a former provincial alderman, and a former maire of a large city. The master sessions inspired him among others to hire a consultancy to reorganize his team, and to confront the city aldermen with the need to coordinate different programs in the city. He discovered new ways to deal with the stringent law on air pollution which forbid to build individual projects if the air pollution standard was not met locally, whilst these project were an integral component of a larger plan that as a whole would deliver an improvement of air quality.

In short, the participant intervened at several levels and the masters and his peer group were convinced that he had improved the chances of successful implementation of the masterplan, which would be widely appreciated as an improvement of the quality and sustainability of the city development.

The case of a large ministry
A large ministry wanted to improve its effectiveness at managing dialogues about sustainable mobility and sustainable water management. Two parallel groups were started up, with top program and project managers from many different departments of the ministry. Among the sponsors were directors-general and the secretary general of the ministry. Masters were among others a former chair of a platform that successfully created political support for road pricing, a former director of Dutch rail, a former president of an oil company, and a highly experienced program manager from another ministry. The ministry was confronted with high demands from society and politics to address problems for which the instruments were not fully in the hands of the ministry. The ministry had to assume a new role as manager of dialogue in highly urgent and controversial networks of organizations. One of the common challenges of the participants was to be able to explain to others how they were contributing to that role, and indirectly to the resolution of societal problems. This ranged from the management of spatial investments in road and rail infrastructure, to the national system of water management, to the future of the national airport.

After three sessions, all participants presented the lessons they had learned in personal conversations with several sponsors. At the plenary wrap-up, the secretary-general voiced the general sentiment that these types of conversations were still too rare in the ministry, and that the master sessions really had contributed to visible results, which were needed to develop a visible and constructive role of the ministry as a whole in the addressing of societal problems. Each participant had made individual appointments with sponsors.

Professionals 'spatial development'
In The Netherlands, consultants are commonly involved in most spatial development efforts where the government serves as competent authority and investor. The use of scarce space has become a central issue in many policy fields. New forms of governance are proposed where many different organizations work together in a strategic phase before actual spatial investments are made. Policy makers in the government have to change their role, as well as their consultants. Both groups have participated in master sessions. A general response to these sessions was that the difference between the masterclass method and other methods to professionalize in 'spatial development' was that it actually gives concrete strategic advice that can be directly implemented in the current situation. For many consultants, their 'transition' was that they had to imagine the whole network of organizations in an area as client, rather than only the client who was paying for their services. This actually was seen as a new way of doing business, where 'spatial development consultants' perhaps are better positioned than civil servants or policy makers in sectors with a more direct interest (e.g. investors) to serve as a channel to connect different ways of thinking about the future of a specific area. Yet, this way of doing business is so situation-specific, that custom made approaches are necessary, which the master sessions could develop.

The education system in a large city
In a large Dutch city, after a series of mergers, all high schools belonged to three school boards. These have dozens of school buildings, often on neighboring locations. Because the viability of a school is directly linked to the number of students, these schools have to compete for new students. The 'battle for the student' had impact on the climate of cooperation between the schools. Direct neighbors refused to deal with each other, and with common challenges they had. Such problems potentially could be solved through cooperation. A director of one school location, with a policy maker in the municipal government, had observed that an intractable controversy had emerged about common issues. They looked for other policy makers in other school locations, who shared this view. Together, they started-up master sessions to develop more empathy and trust as a basis for addressing common issues, with the aim to ultimately improve the education offered to the students.

Train car maintenance and a one stop shop for the homeless
The moderators give several examples where the masterclass method has brought participants to find common goals not only to accelerate and improve the personal files of the participants , but also to develop direct cooperation among participants in the implementation of these plans. For example the case of a car train maintenance shop where managers in different parts of the organization discovered in the masterclass that jointly they could develop a functioning plan for maintenance of high speed train cars. The plan was developed in three months and was successfully implemented, leading to a new cooperative organization and the building of a new repair shop. Another example is the establishment of a group of non-related organizations (a municipality, an insurance company and several health care providers) all involved in care for the homeless, who discovered the possibility to set-up a one-stop-shop for the homeless, and implemented that as a new organization. The participants attribute this success directly to the masterclass sessions.

Conclusion and discussion

Success and success factors
In each of the cases above, participants developed narratives about intervention, taking larger system levels into consideration, and actually implemented these interventions. In one case, high managers sponsored the reflexive intervention and were satisfied with the result, and assisted with its implementation. Despite these success stories, there also have been individuals who failed to implement change. Yet, the stories in our view make plausible that this method of reflexive intervention can be successful, and that this success is based on the essence of being a reflexive intervention: driven by power, looking for concrete interventions, as well as driven by the knowledge provided through a common system analysis. More precisely, success factors frequently mentioned by participants are:

- The involved of experienced role models and the reverse learning method together lead to a strategic advice that can be applied directly, and to ownership of that advice
- Involvement of sponsors also helps to create ownership, since there are expectations in the hierarchy. It also helps making resources available for the reflexive intervention.

- The iterative backward and forward reasoning between system layers society, organization, person helps aligning the mindsets in the group, and helps focusing on opportunities in a joint interest.

The system analysis seems to provide coherent, albeit sketchy, narratives about possible futures and cascades of interventions. A common sense of direction in the group seems to emerge by making this type of complex system analysis. Some participants use language of systems thinking, complexity or transition theories, whilst most use lay language to express similar phenomena. However, a more systematic and statistical data collection, including context and variation with the elements of the method, would be needed to draw more meaningful conclusions about success and success factors.

Leadership
Since organizing reflexive interventions and participating in them requires resources, some non-sanctioned initiative for the sake of a large complex system, i.e. 'enabling leadership', component of complexity leadership (Uhl Bien and Marion 2008), is required. The outcome is at first poorly definable in measurable targets, but it develops a language (a common frame based on several perspectives) that helps to define more visible and directed interventions for change. The cases show that the involved participants come to deeper understandings, which they share with their peers, masters and sponsors, and which actually lead to new actions. Each of the cases make clear that the participants share a narrative about how individual action contributes to common objectives at large system levels, and therefore increase the chance that desirable transitions will happen.

Back to transitions
We see no method to know for sure that certain reflexive interventions contribute to desirable societal transitions. If such transitions will occur, it will be difficult to reconstruct the seeds of change to these master sessions or other reflexive interventions. It seems crucial that these interventions are not voluntary to create a structural tension (Fritz 1989), whilst their objectives are not formulated in a measurable way at first. These are formulated in a general way at a high system level, creating what in chaos and complexity theory is termed a 'strange attractor' (e.g. Nooteboom 2006). Led by such strange attractors or higher-order motives, most innovations either fail (whilst being a good effort), or are but one push of a system away from the wrong direction (de-stabilizing the present lock-in). Our observations in masterclass sessions suggest that sometimes participants and groups use these sophisticated metaphors in their analysis (even on occasions 'requisite variety' has been used). However, only when interventions become highly visible, certain people may be able to take the credits for enabling transitions. Yet, we believe, without any reflexive interventions, only the 'point attractors' causing inertia would dominate our social system. The cases of the masterclass method indicate that it could be one way to develop the potential of proactive interventions, making use of the lessons of earlier efforts, acknowledging that each situation in complex systems is unique, and solutions cannot be copied. Mastership may be an art rather than a science, as Senge (1990) already has indicated.

Back to knowledge democracy
In a knowledge democracy, policy processes should in our view be driven by an awareness of their long-term implications for large social systems, next to their immediate political opportunities and threats. The origin of that driver is a sense of ownership and opportunity that emerges at the co-evolving individual and collective levels. It depends on the art of making joint system analyses, for which new forms of interaction are needed. The working method, like the masterclass method, should be our holy grail, a foremost strange attractor in complex governance systems. The fact that the masterclass method, and other methods for reflexive intervention, are applied at all show that a knowledge democracy, where policies are driven by knowledge, is emerging.

Some policymakers are made responsible for large societal goals but not directly in charge of economic decisions close to the 'regime core' where they think change must occur. For example, one minister may be responsible for sustainable development whilst the regime core consists of certain captains of industry. Such policymakers may easily become cynical if they seem to have little visible impact on the regime core. They might feel marginalized, and ignored by people who matter. Interactions between those who have knowledge about long-term interests and those with short-term interests easily become ritualized.

The role of scientists
The question remains what the role of scientists could be. The first role could be to study the success of reflexive interventions, as we do, and to assist in developing more effective methods for that purpose. This involves, for example, systematic research about the boundary assessments policy makers make when they engage in reflexive interventions, since these boundary assessments determine which policy-makers are prepared to invest in mutual interaction, and whether new combinations occur with possibly surprising results. Other issues of interest are the balanced representation of the self-defined bounded system through participants, elements of the working method and their interrelation, new ways of measuring satisfaction and participants' own explanation, and correlating that to participants' personal characteristics in relation to the context in which they try to perform.

In our view, a second role of scientists should be to participate in reflexive interventions themselves. They can add their knowledge to these processes, and they can redefine their own research agenda based on the practical knowledge provided by the other participants. They may also choose the hybrid role of participating in, as well as reflecting on, reflexive interventions. Nooteboom (2006) has described such reflexive processes involving scientists with regard to sustainable mobility. He himself combined the roles, whereas other scientists were involved with the substance of the reflexive interventions.

The academic community at large presently seems preoccupied with its internal competition in terms of published output; it therefore seems less open for new ways of working. It cannot discover what it cannot participate in, due to a lack of reward – whilst they are the only ones that could construct a new reward system. We may study how such reward systems can emerge, not only to cross the academic - public boundary, but boundaries in general – in particular between the public, private and civil domains. This would contribute to a knowledge democracy – a democracy where

knowledge about wider impacts and opportunities influences personal, and therefore collective, conduct.

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