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16. Reflexive governance: a view on an emerging path

**Jan-Peter Voß, René Kemp
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INTRODUCTION

This concluding chapter is more than a summary of the arguments presented in the preceding chapters. One could say that we take a reflexive approach to the theme of the book. We reconsider the ideas from the Introduction in the light of the ideas it has prompted in the chapters. In this way, we can rework a concept of reflexive governance that incorporates feedback from theoretical as well as more practical areas of application. This feedback promotes learning with respect to the concept of reflexive governance. Experiences that are gathered on the basis of reflexive governance reproduce and modify the conceptual framework and shape further experience – they are an example of ‘conceptual structuration’, to paraphrase Giddens (1984/1986). This concluding chapter can thus be seen as a ‘view on an emerging path’ of thinking and practice in societal governance and problem solving.¹

We proceed by first discussing the relationship between sustainable development and reflexive governance in more depth. Here, the initial hypothesis from the Introduction becomes substantiated by evidence from the chapters. Sustainable development serves as a label under which a fundamental transformation of governance, in the context of reflexive modernisation, is politically negotiated. Seen in this light, sustainable development is indeed more than an empty phrase; it is both a symptom and a catalyst of what Beck (1994) describes as reflexive modernisation.

A second point is a more explicit concern for the quality of the outcome of processes of reflexive governance. Does reflexive governance actually produce better results? This question refers to the need for criteria of procedural quality, since it is not possible to arrive at a solid definition of the ‘right’ outcome of problem handling for sustainable development. Such criteria can support an assessment of reflexive governance without getting

trapped in the temptation to predefine the results for learning processes and thereby negate the very strength of the approach.

A third point is that we add to the question of the location of reflexive governance: in which types of interaction and at what level of social organisation does reflexive governance take place? In this respect, we introduce different levels as a conceptual extension to reflexive governance. This view acknowledges that the levels at which problems are addressed and the interplay of governance processes across different levels are an important dimension. In this volume, both Beck and Wolff show this aspect with respect to transnational governance as a response to the limits of political organisation in nation states. Other chapters in this volume, like those of Loibl and Whitelegg that discuss knowledge production, show how reflexive governance in research plays a role on both a macro-level of programme management and a micro-level of project management.

As a fourth point, we add a fundamental qualification to the concept of reflexive governance by introducing the efficacy paradox. This concept refers to the contradicting requirements of opening up and closing down in social problem-solving processes (see also Stirling 2005). On the one hand, problem-oriented interactions need to be opened to take account of the interaction of diverse factors, values and interests. This is necessary to produce robust knowledge and strategies. On the other hand, selection of relevant factors, decisions about ambiguous evaluations and convergence of interests are necessary to take decisions and act. The strategy elements of reflexive governance, as presented in the Introduction, address the need to open up various specialised kinds of problem solving to allow for integrated assessment and coordinated strategies. The efficacy paradox draws attention to the fact that effective governance requires these strategy elements to be complemented with appropriate strategies to reduce complexity and achieve stable strategies. The proposed way to deal with these paradoxical requirements is to combine opening up with closing down, for example, by organising problem-handling processes in sequences of opening up and closing down (compare the discussion of exploration and exploitation in March 1991).

At the conclusion of this final chapter, we summarise the concept of reflexive governance and formulate our position on its overall potential for furthering the societal search for sustainable development. As a last step towards the unfolding of the concept of reflexive governance, we outline an agenda for further research and practical experimentation.

REFLEXIVE GOVERNANCE AND SUSTAINABLE DEVELOPMENT

Reflexive governance was presented in the Introduction to this volume as a twofold concept, both a condition of governance in the modern world and a specific strategic orientation that results from this condition. The first meaning refers to the self-confrontation of governance. This can be seen in the increasing devotion of governing capacities to problems which are themselves caused by governing. That is to say, governance to a large extent involves repair work for the unintended consequences of prior attempts at shaping societal development. This meaning of 'self-confrontation' is analogous to the meaning of reflexive modernisation as modernity confronted with itself as introduced by Beck and others (Beck et al. 1994; Beck et al. 2003).

A second meaning refers to new kinds of strategies, processes and institutions which can be observed emerging under this condition of self-confrontation. This has to do partly with the reflection of the condition of self-confrontation by unintended consequences and the development of deliberate responses to it. In the Introduction we undertook a systematic reflection of the sources for reflexivity (self-confrontation) in governance. This resulted in a set of reflexive strategies labelled integrated knowledge production, experimentation and adaptivity of strategies, anticipation of long-term effects, interactive participatory goal formulation and interactive strategy implementation.²

In practice, governance arrangements that include these reflexive strategies usually evolve from repeated attempts at grappling with very specific problems rather than from the theoretical recognition of reflexivity (self-confrontation). For example, interactive technology assessment aims at avoiding conflicts between advocates and opponents at a late stage of technology development; transdisciplinary research seeks to cope with the limitations of disciplinary academic science that show up when laboratory science is applied to real world problems; cooperative policy networks are a response to the interference of actor strategies that may spoil policy implementation. From within the social processes in which these new modes of governance evolve it is not always visible that the problems they address are themselves caused by existing governance structures which evoke narrow and myopic problem treatment and unintended repercussions: institutional arrangements of technology development in which development work is dissociated from social needs and contexts of use; self-referential science dynamics supported by the institutional demarcation of knowledge fields and academic peer review; or departmentalised policy making not being able to take account of interaction across policy

areas. If viewed from a broader perspective, however, the emergence of various new modes of governance appears to follow a similar pattern. This becomes articulated by the concept of reflexive governance: governance learning is being shaped by the experience of unintended feedback of its own working (compare with first-order reflexivity in note 2 to this chapter). These experiences lead into adapting cognitive concepts and institutional arrangements so that they transcend the boundaries of closed-up problem solving routines. Conventional governance processes are opened up for interaction with their contexts and develop capacity for mutual adaptation of strategy and context before the damage is done. Social concerns and factors of influence that have hitherto been externalised become incorporated in problem definition and strategies. New principles such as precaution, experimentation, learning, participation and integration reflect the possibility of unintended feedback and error of any rigorous analysis and strategy by translating it into fruitful interaction with dynamic contexts of real world implementation (compare with second-order reflexivity in note 2).

While the concept of reflexivity is seldom referred to in these processes of governance learning, the concept of sustainable development plays an important role. In fact, reference to sustainable development is what governance changes in these various fields of practice have in common. The chapters in this book offer examples from research policy and management (Whitelegg; Loibl), risk assessment (Stirling), regional development (Sendzimir et al.), sectoral planning (Kemp, Loorbach; Voß et al.; Weber), technology development (Smith; van Vliet; Spaeth et al.), and agricultural policy (Grin, Wolff). Sustainable development provides a broader framework and discursive context to the particular problems in each of these problem areas. The systems perspective, together with the integration of diverging social goals and the long-term approach, are outstanding characteristic elements of sustainable development, regardless of the substantial openness of the concept. They provide a general orientation in searching for ways to handle recurrent problems and provide a legitimate reference in pushing for new governance forms. The notion of sustainable development thus serves as a catalyst for the exploration of new forms of governance – and is itself kept alive and becomes materialised by references made to it.

As such, sustainable development can be understood as the *chiffre* under which the structural changes that are sociologically conceptualised as reflexive modernisation become politically negotiated. Sustainable development is an aspect of reflexive modernisation, it works as a change agent, a vehicle and a mediator for governance changes towards reflexive governance. In this respect, sustainable development is not something empty, irrelevant

or without practical value or factual implications as is sometimes claimed. Rather, it is indeed an important driver of societal change.

The notion of sustainable development has 'succeeded' to the extent that it has condensed the problem of the self-undermining side-effects of modernity into a slogan that triggers communication across different domains and levels of social action. Even if the substantial meaning is disputed, the attribute 'sustainable' always works to contextualise particular actions, concepts, strategies and so on within a broader environment. Those who claim to act in a sustainable manner are expected to justify their actions with respect to consequences in society and nature. Calling something 'sustainable' means taking into account possible side-effects – both immediate and long term – and their impact on the viability of society as a whole. As such, it can be seen as a late modern version of the concept of the common good that has now become widened to include the natural conditions of human well-being and therefore encompasses a different time structure. This is a qualitative change in the concept. Concerns for more complex interactions, ignorance, irreversibility and path dependency are introduced to the search for the common good. Sustainability signifies that what we think and do now may enable or restrict thinking and acting in the future. This becomes most visible in the degradation of global ecosystems. But it also refers to the shaping of social structures through, for example, institution building, industrial subsidies or education. In comparison to the common good, the notion of sustainable development thus strengthens a dynamic, historical understanding of society whose values and knowledge undergo change. But this also means that the agent of governance gets displaced from its Archimedean point, outside of the developmental context. Instrumental rationalisation and steering are not applicable under these conditions. In this way, references to sustainability trigger a search for new governance forms that take a learning-oriented approach towards steering.

Sustainable development and reflexive governance clearly make life more complicated and make conflicts more obvious at an early stage. What were once externalities become interdependencies and trade-offs that are explicitly considered and negotiated. The perceptions and interests of actors from other realms of society, which were bracketed out in specialised problem solving, now need to be addressed. Not surprisingly, sustainability is not easy to operationalise into consensual strategies. It has a radical impact on social institutions, practices and processes in which problems are perceived and acted upon. It calls for a fundamental reorientation of governance (see especially the chapters by Beck, Grin, Rip and Stirling, this volume).

By articulating reflexive governance as a phenomenon that is actually happening and by elaborating the rationale behind it, we take part in the

process of governance change occurring under the heading of sustainable development. Reflexive governance can serve as a conceptual underpinning for diverse experiments with new forms of governance for sustainable development. It can contribute to the discussion on institutional sustainability as a possible 'fourth pillar' of sustainable development in addition to ecological, social and economic sustainability (Spangenberg, 2004). As such, reflexive governance could offer a concept by which diverse local and problem-specific processes of governance innovation can be connected with each other. It facilitates the discussion of common underlying problem structures and methodical experiences of tackling them. It could, for example, be interesting to relate the experiences with integrated knowledge production that are made in transdisciplinary research, climate policy making and technology assessment. Reflexive governance provides a common language, a cognitive platform through which reflexive governance innovations can find synergies and develop momentum in transforming established institutions (see Grin, this volume, on the role of such linkages between innovative practices).

POLITICS AND THE QUALITY OF OUTCOMES

The elements of reflexive strategy that were presented in the Introduction refer to particular ways of organising governance processes. However, they do not prescribe any specified results that are to be achieved for sustainable development such as emissions targets or income indices. This is due to the recognition that uncertainty and ambivalence are features of the operationalisation of sustainability. For example, what is the right trade-off between emissions reduction, social equality and economic stability? Reflexive governance therefore asks for open-ended searching and learning.

If the outcome of reflexive governance cannot be defined, how can we then know if it works? One could, for pragmatic reasons, refer to politically defined goals such as the Kyoto targets for reducing greenhouse gas emissions. However, this does not resolve whether current political structures actually produce sustainable targets, or whether, for example, more substantial greenhouse gas reductions might not be necessary, as many scientists argue. To take current political goals, concepts and measures as points of reference for the evaluation of outcomes would 'short circuit' the evaluation of governance, which itself contains particular dynamics of political discourse. The potential of reflexive governance for open-ended learning with respect to goals and targets, would be blocked. What has to be evaluated is the actual working of reflexive governance arrangements, not predefined outcomes.

A concern for evaluation as such is important, however, because reflexive governance arrangements can be misused. As mentioned in many places throughout the chapters of this volume (for example, Rip, Stirling, Smith, Wolff), the reality of reflexive governance, of course, includes opportunistic behaviour, rhetoric and power struggles no less than it includes collective problem handling, dialogue and cooperation.

Therefore care needs to be taken to prevent any particular interests from dominating reflexive governance. For this purpose, one could refer to the collective interest and cooperative orientation of participating actors as a precondition for reflexive governance. In this respect, one could think of procedural settings, selection criteria for participants and the long-term perspective of sustainable development that make it possible for this precondition to be met. This would emphasise the 'rational discourse' dimension (in a Habermasian sense) of reflexive governance. At the same time, however, it would make the process vulnerable. The preconditions of rational discourse are not very widespread in reality, as many critics of Habermas argue, and their creation cannot be taken for granted.

To understand reflexive governance simply in terms of rational argumentation and consensual understanding, however, misses an important dimension of the interaction process. This is the mutual adaptation of actors' knowledge and strategies and the formation of a common understanding of problems, goals and strategies that takes place even when actors contest each other and use arguments merely strategically to gain an advantage in the power game. As long as actors are compelled to articulate and defend their problem analysis, goals and strategies with respect to a common focus such as public acceptance or a political decision to be taken, patterns of argumentation will become connected with each other because no one can afford to ignore relevant points that others bring up. The resulting patterns of strategy will be more robust than if they were dreamed up within the separate worlds of each actor alone. They are tempered in anticipatory interaction, rather than in real-time, possibly irreversible trial and error. Even if reflexive governance helps to articulate conflicts and cleavages, it furthers social learning. Its outcome represents a new shared view on reality even if it contains dissimilar problem definitions, goals and strategies. Actors may commonly refer to this reality and position themselves and others within it. Without interaction, this variety would remain unknown. Thus, in addition to operating through conscious deliberation, the reflexive strategies presented in the Introduction also work as coordination mechanisms behind actors' backs. Arie Rip nicely elaborates a similar dynamic in his treatment of 'controversies as informal technology assessment' (1986).

For mutual adaptation in controversies, however, as well as for consensus-oriented deliberation, it is important that the interaction process be open

to diverse perspectives and that these perspectives be articulated on an equal footing. This is what has to be accomplished by procedural rules and moderation of searching and learning processes in reflexive governance. This is also what can be taken as criteria for process evaluations of reflexive governance.

With respect to the evaluation of outcomes, further work needs to be done on indicators that can measure structural change independently of a predefined direction or end state in which such changes would go. Change indicators would allow the effect of social learning in reflexive governance to be monitored without contradicting the open-endedness of sustainable development. They could refer to problem definitions, actor constellations, interaction practices, strategy options and so on. Indicators are necessary to avoid losing direction during long and ramified projects of transformation. Without such indicators, attempts at system innovation may become stifled after an enthusiastic starting phase because results are not immediately visible. This might happen just as important cognitive and institutional changes begin underneath the surface performance gauged by output indicators. The five strategy requirements of reflexive governance presented in the Introduction to this volume, may serve as a starting point for the development of such institutional change indicators for sustainable development.

Whatever the specific result of any further work on evaluating reflexive governance, it is important that its particular qualities are taken as a reference:

- **Achieving societal ends:** first, reflexive strategies seek to avoid repercussions from unintended effects and second-order problems and thereby contribute more effectively than narrow problem-solving approaches to achieving societal ends. This does not happen by gaining acceptance for predetermined solutions but through the exploration of a broad set of alternatives with respect to a diverse set of criteria.
- **Learning about ends:** second, reflexive strategies provide platforms for interaction that complement conventional political decision making. Interactions are not restricted to institutionalised policy fields, but instead evaluate and reconsider societal ends against the background of diverse concepts and values. Experiments with strategies may yield experiences that lead to a reassessment of needs and interests or to identification of other ways of meeting them.
- **Quality of problem definitions:** third, reflexive strategies increase the quality of problem definitions by actively involving diverse viewpoints – even from actors who have limited capacities to articulate

and press for their ideas and perceptions of problems in public discourse. Participatory knowledge production and strategy development and implementation are based on insight into social pluralism and distributed intelligence – an insight that relates fundamentally to the ideal of democracy.

SHIFTING SCALES: MULTI-LEVEL REFLEXIVE GOVERNANCE

In the Introduction, we raised the question of *how* to deal with uncertainty, ambivalence and distributed control in sustainability issues. In the very first chapter, Beck points out the need to explore also *where* such reflexive governance strategies should be located. Beck argues that collective political action is no longer restricted to nation states and the system of international relations between them. Rather, he sees reflexive governance approaches as transgressing former borders and boundaries. This is very much in line with the five strategy elements of reflexive governance that have been explored throughout the book. They are all about bringing into interaction what has formerly been separated – integrating scientific disciplines and practical knowledge through transdisciplinary knowledge production, integrating distributed action strategies and integrating long-term systemic effects into today's action. Transgressing the boundaries of the nation state is just another dimension of integration, which brings nationally-bound political processes into interaction. In this way, factors and effects that come from or go beyond the boundaries of nation states become internalised.

Yet the question of where governance should and could take place goes beyond this. It is not merely about transgressing geographical boundaries to deal with the global problem of sustainable development. Rather, it is about finding the right place and space to tackle specific problems of sustainable development – reaching from global to local approaches. Given that governance in practice is oriented towards specific problems such as the transformation of energy provision or agriculture, spaces for interaction need to be geared towards the problems and cannot be restricted to conventional institutional and geographical boundaries of problem solving. Much like transdisciplinary research projects, which draw upon disciplinary research but need to be reassembled according to the problem they have to deal with, reflexive governance cannot be limited to existing institutional settings, but may need to establish a setting that is appropriate for the relevant problem. In short, the interaction space needs to be congruent with the problem space. This congruency could be introduced as a

sixth strategy element of reflexive governance that covers all three dimensions of problem solving: problem analysis, goal formulation, and strategy development and implementation.

The chapters in this volume have uncovered a number of insights as to the level of social organisation at which reflexive governance is taking place and the creation of problem-specific institutional settings. The chapter by Kemp and Loorbach provides one example of tailor-made problem-solving spaces, namely the transition arena, which they call 'a new institution for interaction' and 'an open and dynamic network in which different perspectives, different expectations and different agendas are confronted, discussed and aligned where possible'. Interestingly, the transition arena is very fluid, changing its size, task and participant profile throughout the transition management process and thereby creating a congruency between the shape of the transition arena and the problem on its agenda. Kemp and Loorbach also introduce a concept that has been referred to in several other chapters. They differentiate between three levels of socio-technical systems: macro-landscape, meso-regimes and micro-niches. Reflexive governance can in principle be located on all of these levels. Smith describes two approaches that have chosen the niche level as the appropriate place to foster system change. Other approaches, such as sustainability foresight, suggested by Voß et al., highlight the need to coordinate niche activities and developments on the regime level.

Looking at the chapters by Loibl and Whitelegg, we find another example of how reflexive governance can be placed on different levels and how these interact. While Loibl analyses reflexive governance *within* research projects, Whitelegg looks at the reflexive governance *of* research programmes. The latter includes both the governance of the programme itself – for example, the learning/adaptability of programmes or participation of stakeholders to define priority areas – and the promotion of reflexive governance within research projects. The chapter by Loibl also points us to the fractal and nested nature of reflexive governance that operate at different levels. This chapter focuses on one of the five reflexive governance strategies set out in the Introduction, namely, integrated knowledge production. Yet while exploring the practice of transdisciplinary knowledge production as an example of a reflexive strategy element in societal governance, it turns out that other reflexive strategy elements are also at work in the governance of the research process itself. Those elements are needed to deal with complexity, heterogeneity and distributed resources in transdisciplinary research processes.

While it is an important insight that reflexive governance can and must be developed on different levels, it is mainly the chapters in the section on strategies for sustainable system transformation that emphasise interactions

between system levels. In their description of the transition management approach, Kemp and Loorbach, for example, describe transitions as a 'cascade of innovations at different levels', all of which may be governed by reflexive governance arrangements. In a similar vein, Voß et al. present their sustainability foresight approach as a macro nexus to connect various innovation processes with broader structural transformations on a sector level.

Shifting governance levels, linking governance levels or creating new governance spaces to grasp relevant viewpoints, factors and resources of specific sustainable development problems as they appear would therefore need to be added as a complementary requirement applying to the other five elements of reflexive strategy.

THE EFFICACY PARADOX OF HANDLING COMPLEXITY

The previous section introduced multiple levels of problem handling as just one more dimension in which reflexive governance requires an opening up of problem-solving processes to integrate relevant factors that could be responsible for unexpected adverse results if they are not incorporated into problem definition, goals and strategies. A review of the various policy and management practices through which reflexive governance becomes implemented, however, also draws attention to an inherent problem connected to the opening up of governance processes for comprehensive problem appraisal and robust strategies: although necessary to respond adequately to the problem of sustainable development, too much complexity, ambivalence and interaction severely reduces action capacities and may block deliberate attempts at shaping societal development.

Appraisal of this situation reveals a dilemma of reflexive governance: the contradicting requirements of opening up and closing down (Stirling, 2005). Opening up is necessary to grasp adequately the factual embedding of decision making and problem solving in systemic contexts. Closing down is necessary to reduce complexity in order to avoid anomy and retain the ability to act – even if it is revealed as illusionary in its modernist form (Rip, this volume). It is a dilemma that is rooted in limited capacities to handle complexity.

The concept of sustainable development would require taking a truly holistic approach to embrace the whole world, but there are immediate restrictions. In our framework of reflexive governance these limitations are effective in all three dimensions of problem handling, but in different ways. In problem analysis, they are linked to cognitive limitations in processing complexity. In goal formulation they are linked to the need of at least

temporarily defined goals for the development of action strategies. In strategy development they are linked to limited resources for the exploitation of possible options. In all three dimensions, opening up in terms of the number and heterogeneity of participating actors decreases the probability of achieving agreement and increases transaction costs.

This situation could be interpreted in such a way that it reveals the futility of sustainable development and reflexive governance and leads back to the fragmented practices of muddling through within the framework of established institutions. Isn't it better to be ignorant of systemic interactions, trade-offs and interfering strategies that cause unintended effects and second-order problems than to be unable to act at all? Reflexive strategies do not eradicate uncertainty, ignorance, ambiguity and interfering activities. Rather, they only bring them to our attention. According to such an interpretation, reflexive governance may not offer anything in terms of practical action.

This line of reasoning, however, takes us back again to where we started in the introductory chapter. It is widely acknowledged that there is a necessity for more than muddling through and there are good reasons why better results can be achieved by applying reflexive strategies. But there is no easy, straightforward way to apply the principle of opening up. Moreover, reflexive strategies include ambivalences. In principle, the underlying dilemma cannot be resolved, but a balanced employment of reflexive strategy elements can help to avoid collateral damage, undesired path dependencies, lock-ins, myopic or biased assessments or collision of actor strategies. By raising awareness of fundamental uncertainties and ambivalences, they suggest a more cautionary approach towards shaping societal development. In so doing, they can reduce the probability of second-order problems but cannot eliminate them.

The issue of the erosion of action capacities as a possible detrimental effect and limit to the opening up of governance processes is important. It qualifies the basic concept of reflexive governance as outlined in the Introduction by stating a meta-requirement to keep the balance between two extremes. Instead of one-dimensionally proposing 'the more opening up the better', it helps us refine our set of reflexive strategies by introducing a counter image of complete fluidity and openness in which any kind of strategic action must suffocate. Reflexive governance thus becomes an 'as-well-as' concept in itself, a concept that entails combining and balancing two or more truths rather than deciding for one of them (compare Beck 1993, p. 9). It is, therefore, not a question of choosing between keeping up action capacity or opening problem handling for contextualisation, but a matter of pursuing both. Against the background of the above discussion, this sounds like a paradox. We believe it is one. It can be called the

'efficacy paradox of complexity'. In order to assure the efficacy of strategies in complex contexts, it is necessary to consider a wide variety of aspects and stay flexible to adapt to unexpected events. At the same time, it is necessary to reduce the number of aspects considered and decide on certain options in order to produce output. This paradox cannot be resolved without losing out on one side or the other. With respect to action strategy, reflexive governance thus implies a dilemma.

We think that it is fruitful to recognise the paradox, not to resolve it, but to work with it as suggested by Ravetz (2003:819). 'Another approach to paradoxes, characteristic of other cultural traditions', Ravetz argues, 'is to accept them and attempt to learn from them about the limitations of one's existing intellectual structures'. In this sense, it can work like the 'ironies' suggested by Rip (this volume).

The efficacy paradox has to be faced in strategies for sustainable development. It could be one of the reasons why we have made so little progress with sustainable development. Opening up of the discussion on future societal development towards a broader set of considerations and wider system boundaries in terms of levels of policy, geographical boundaries and the inclusion of future generations goes hand in hand with increasing difficulties to act. To deal with this paradox, the typology that we develop in the following section may appear as a useful first step. It allows decision makers and analysts to deal with the paradox conceptually.

COMBINING OPENING UP AND CLOSING DOWN IN REFLEXIVE GOVERNANCE

We propose to qualify the concept of reflexive strategies proposed in the Introduction with an explicit requirement to balance the opening up of governance processes for incorporating uncertainty, ambivalence and distributed control with a reciprocal requirement to close down governance processes to enable decision and action. This task of balancing two contradicting requirements to handle fruitfully the efficacy paradox is more of an art than a science. We cannot offer any precise method for diagnosis or a tool kit by which a specific adequate combination of opening up and closing down for each real world governance situation could be determined. Instead, what we can do is sketch out, in a very rough manner, some generic forms in which opening up and closing down can be combined. Our sketch is based on the review of empirical governance practices and theoretical discussions in the literature and the chapters of this book. It may be helpful to consider a spectrum of possibilities when designing governance strategies and institutional arrangements.

First, a differentiated look is needed at what it is that is going to be opened up or closed down. Here, we can refer to the three dimensions of problem solving against the background of which reflexive governance was discussed in the Introduction: problem analysis, goal formulation and strategy implementation. Opening up can occur in all these dimensions or in only one or two of them. For problem analysis, opening up would mean extending the system boundaries and increasing the range and diversity of factors and interactions considered in analysing problem causes, dynamics and effects of interventions. For energy forecasting, for example, this could entail an opening up of economic models to include the strategic behaviour of market actors, political processes that influence regulation, public opinion, resource exploitation and climate change. In the dimension of goal formulation, opening up refers to the revising of given targets by taking into account a broader spectrum of values and facing trade-offs that have to be made. For the energy example, this could mean simply taking into account the established goals of economic efficiency, security of supply and environmental soundness for each policy decision and not letting each ministry follow its own preferred goal. But it could also mean broadening the goal catalogue with values such as aesthetic acceptability and democratic participation in energy provision. In the dimension of strategy implementation finally, opening up refers to a widening of the range of measures and options that are considered and implemented for problem handling. In the energy example this would entail developing and experimenting with a diversity of radically new policy instruments – such as tradeable energy efficiency obligations or participatory technology development – and technologies such as solar electricity import or micro co-generation.

In principle, it is possible that governance processes are opened up in all of these dimensions at once. Problem definitions are called into question, goals are scrutinised and the set of assumed solutions is revised. One possibility to reduce the disruptive effect of opening up on strategic capabilities, however, is to focus sequentially on each of these dimensions, not on all at once. In any case, because of the interdependencies between goals, problem definitions and measures, opening up in one dimension will most likely induce similar processes in other dimensions.

Across all three dimensions of problem solving, an important aspect of opening up refers to the number and heterogeneity of actors involved in problem analysis, goal formulation or strategy development/and/implementation. Eventually, opening up must be linked in one way or the other to extended participation, since knowledge about different problem aspects and values as well as resources for making measures and options work are distributed among different actors. Ultimately, it is the diversity of world views and problem perceptions held by different actors that is the

key trigger for opening up governance processes. At the same time, however, it is also the key trigger for controversy and misunderstanding, which makes governance difficult and seemingly ineffective.

In the following paragraphs, we describe schematically different combinations of opening up and closing down. In doing this, we refer to problem analysis, goal formulation, strategy development/and/implementation and actor participation as the four aspects in which opening up and closing down can take place. In principle, there are very many different ways of combining opening up and closing down in governance and problem handling. One could therefore develop a highly differentiated typology. Here, we restrict ourselves to the presentation of four types (see Figure 16.1). Two of them are the extreme types of totally closed and totally open governance processes: 'problem solving with blinkers' and 'erosion of strategic capabilities'. These serve to delimit the spectrum of possibilities. The other two types are combinations in which a phase of opening up is followed by a phase of closing down.

In one of the types, 'sequential opening and closing', the complexity that has been built up through widening system boundaries, considering diverse values and exploring a range of alternative measures and options is pragmatically reduced again into one coherent framework of problem definition, goals and options for problem-handling. The strategy resulting from this framework can be expected to be more robust because a variety of perspectives has been explored and a context-oriented and situational adaptation of the problem-handling framework has taken place. Nevertheless, the selection and priority setting that has taken place in closing down the governance process towards one consistent strategy is still vulnerable to unexpected side-effects. Only probing the strategy under real-world conditions can disclose all its effects and hint at requirements for further revising.

The other type of opening up and closing down, 'exploring experiments', differs in that a variety of problem-handling frameworks rather than a single framework is developed into a portfolio of strategy experiments. In this way, closing down does not have to end up with one 'best possible strategy'. Instead, the uncertainty, ambivalence and diversity of options experienced in the first phase of opening up can be translated into a set of alternative frameworks of problem definition, goals and options. It is not possible to decide *a priori* which one of these frameworks is better adapted to sustainable development. Instead, they induce variation and offer experience from which society can learn what sustainable development is. The unintended side-effects from each experiment can be compared with each other. If one strategy appears impractical or too risky, others can be followed and further developed.

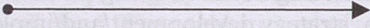
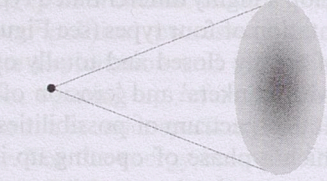

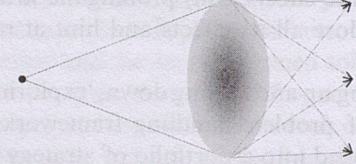
Type	Graphical Illustration	Description
<p>Problem solving with blinkers</p>	<p>No opening</p> 	<p>No opening takes place. Problem-solving is pursued in the framework of given problem definitions, goals, an options with restrictive participation. Unintended consequences are likely to cause second order problems.</p>
<p>Erosion of strategic capabilities</p>	<p>No closing</p> 	<p>Governance process is opened-up in all dimensions by participation of a large number of heterogeneous actors. Uncertainty about problem dynamics, ambivalence about sustainability goals and diversity of options erode the capacity for collective action.</p>
<p>Sequential opening and closing</p>	<p>Sequential closing</p> 	<p>Governance process is opened-up (in one or more dimensions); diverse perspectives are explored in interaction. In a second phase selection and priority setting leads into a new strategy for problem handling. Adapted strategy can be probed and further revised.</p>
<p>Exploring experiments</p>	<p>Subsidiary/experimental closing</p> 	<p>Governance process is opened-up (in one or more dimensions); diverse perspectives are explored in interaction. A set of strategies is developed according to alternative selection criteria and priorities for closing-down. Experiments with different strategies support learning.</p>

Figure 16.1 Types of combining opening-up and closing-down in governance

This brief overview of different combinations of opening up and closing down in governance illustrates the efficacy paradox and indicates a direction in which ways can be found to cope with it.

A FEW FINAL WORDS

Having arrived at the end of the book, perhaps it is good to state what we hope to have achieved. First and foremost, we hope we have generated an interest in the very idea of reflexive governance, realising that this is only a first step. Second, we hope we have shown that reflexive governance represents a radical innovation with respect to dominant 'modernist' regimes of governance and that it needs to be taken up by theorists. And third, we hope we have shown that reflexive governance is 'for real' – that it already exists in various forms.

In the Introduction we introduced five strategies which can be derived from the reflexive governance perspective (integrated knowledge production, experimentation and adaptivity of strategies, anticipation of long-term effects, interactive participatory goal formulation and interactive strategy implementation). In this concluding chapter we added the congruency of governance and problem space as a sixth strategy element. We suggest that these six strategies are central elements of a conceptual repertoire which can further the development of practices of reflexive governance. Their application injects second-order reflexivity into governance processes, leading actors to reconsider their embedding in wider system contexts and review the problem definitions, goals, options and strategies coming out of it. In this way, governance gets prepared to deal with the first-order reflexivity of modernisation, the spiralling up of problems and problem solving as a result of unexpected side-effects.

The different chapters have demonstrated that existing governance systems already include elements of reflexivity that go beyond the confrontation of social groupings with unintended consequences. There are indeed many instances, in diverse areas of practice, of new governance approaches based on the reflection and anticipation of unintended consequences, in which the handling of uncertainty, ambivalence and distributed control plays a central role. In the terminology proposed at the beginning of this chapter, one could say that there is broad evidence for the emergence of second-order reflexivity on top of the first-order reflexivity of societal development. As a fourth and final point, we hope that we have been able to show how these quite fundamental changes in society are linked to the concept of sustainable development, which plays an important role as a catalyst of social discourse and change.

An unexpected outcome of this book is the suggestion of thinking about different combinations of opening up and closing down in governance processes, which we believe is a useful scheme for thinking about the efficacy paradox and handling it in a practical way. The efficacy paradox is an intricate problem for sustainable development. In simple terms, it means that to be able to act you must reduce complexity, which, however, easily leads to the neglect of long-term system effects. On the other hand, consideration of all possible effects reduces the capacity to act. There is a clear tension and strategic dilemma. The paradox must somehow be dealt with. The different ways to combine opening up with closing down present central elements of a conceptual repertoire that helps to do this. Further research on indicators for procedural quality and for the monitoring of institutional changes towards reflexive governance is needed. This book is a first outline of a new theoretical perspective that may look rather 'impressionistic'. It may even fail to impress. Yet we believe the concepts and arguments advanced here take the discussion of reflexive modernisation firmly into the realm of governance, something we felt was unquestionably needed. Furthermore, they throw light on quite fundamental implications of the concept of sustainable development, when that concept is translated into requirements for governance: considering the long-term systemic effects of short-term, specialised solutions proves to have disruptive potential for modernist problem-solving routines. In this way, sustainable development may open the way for fundamental innovations in society and governance. Reflexive governance could be such an innovation, one that provides a conceptual framework within which dispersed innovations in governance can link up with each other and gain momentum. With this bold claim we offer the book to readers. We hope that further steps will follow and that by means of such steps, 'we make the path by walking'.

NOTES

1. As such, however, reflexive governance is naturally embedded in a broad context of governance, management, planning and operation studies and various innovative practices linked to them. Reflexive governance bundles things in a different way while focusing on some aspects and leaving out others.
2. Stirling (this volume) introduces a variation of this understanding of reflexivity. He reserves the term reflexivity for a cognitive 'recursive loop, in which it is recognised that representations are contingent on a multiplicity of subjective perspectives, and that these subjective perspectives are themselves reconstituted by processes of representation'. Reflexivity thus refers to cognitive processes that turn attention towards themselves. In this understanding, reflexivity is always a deliberate intentional effort. A 'reflexive system of governance therefore involves explicit recognition that policy appraisals are contingent and constructed, including by commitments to the interventions that they ostensibly inform'. Although this is fruitful terminology with respect to the cognitive dimension of

governance, it does not connect easily to the occupation of modern development with itself, which appears in the repairing of the undesired side-effects of its own working. This aspect is strong in the concept of reflexive modernisation. Environmental protection and technology assessment are examples of societal governance that is oriented towards its own results without concern for the link between objective problems and subjective approaches to problem solving. This 'material' reflexivity of governance can be observed even when it is not cognitively reconstructed by the actors who conduct environmental protection or technology assessment. As for the concept of reflexive governance, we further use a notion of reflexivity that includes the unintentional – and even unreflected – self-confrontation of social action. To avoid confusion, however, it is advisable to introduce a clear differentiation between unintended reflexivity as a condition of governance – being confronted with side-effects – and its cognitive reflection and corresponding adaptation of problem-handling practices as new governance approaches that cope with side-effects by incorporating uncertainty, ambiguity and distributed control. The first form of unintended reflexivity can be labelled first-order reflexivity; the second form of reflected reflexivity can be labelled second-order reflexivity.

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