

Reflexive Governance for Research and Innovative Knowledge

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**Reflexive Governance for
Research and Innovative
Knowledge**

Marc Maesschalck

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Foreword

Volume 3 of the *Responsible Research and Innovation Series* (Volume 2 in French) *From Ethical Review to Responsible Research and Innovation* compares the various forms of ethics in research (integrity, protection of individuals and ethical review of projects to be financed) to the commitments of responsible research and innovation (RRI). Governance is an essential condition for the success of RRI. It contributes to a multiplication of perspectives that favor ethical deliberation. As one of the pillars of RRI, governance could enable a more active approach to ethical concerns, which are understood broadly as well beyond the individual ethics of researchers and engineers. Governance is tasked with regulating cooperation between actors with different identities, interests, care capacities and responsibilities. Their different backgrounds are also motivated by varying expansionary rationales that sometimes conflict with uncertain and contingent relationships to borrow an important term from the title of Volume 1, *Ethics and Efficiency: Responsibility and Contingency*. If RRI favors the inclusion of participating parties, interest groups or citizens in the processes of research and innovation, it must be concerned with governance to imagine accepting this inclusion, in line with various lists of international evaluation criteria.

The increased importance of governance is not only a consequence of globalization and the redistribution of tasks, and thus responsibilities, between state and private and public institutional actors. It is also at the center of the European integration. This space is a common site of experimentation with differing norms tested by crises and the solutions created in response. As early as 2001, governance was the subject of reports published by the European Commission. It highlighted new concerns

associated with five principles: efficiency, consistency, participation, transparency and (the key element for RRI) sharing responsibilities. Thus, RRI is centrally tied to the entire European structure, not only in areas of innovation and research.

However, watchwords such as *partnership* and *participation* or even terms that were later associated with them, like *transparency* and *responsiveness*, strive for a concept of governance that goes well beyond mere regulation. Governance, as one of the pillars of RRI, can only be called ethical and thus truly responsible when closely associated with freedom – recalling the title of Volume 2 in the series, *Responsibility and Freedom*. This is another path that this new volume takes, which is certainly not incompatible. It asserts that we must explain what we mean by different additions or qualifiers associated with governance. They can cover very different practical realities depending on the theoretical orientations assumed. It is not enough to thematize the old modes of government that we claim to have moved past. We must still be convinced that the new ways of governing really are new and that they measure up as a *responsible governance* for innovation and research. Marc Maesschalck's *reflexive governance*, which he identified after studying different models of governance over many years, is dynamic enough to accommodate this concern. In passing we will see that it is distinct from the project of meta-governance proposed by the European research project about RRI, ResAgora¹. The Belgian philosopher begins his work with an epigraph chosen from the work of the famous science philosopher Georges Canguilhem: "to make use of data in the course of a pre-existing practice, that practice must be translated into conceptual terms; theory must guide practice, not the other way around." There is thus no place in this volume for an approach that would be satisfied with a too comfortable descriptivism. This all too common approach reduces governance to an emerging public practice rather than approaching it as a collective action coordinated by normative guidance. In fact, when the question of a new approach to ways of governing in the public interest is necessary, and must be accompanied by new methods of regulation, the question cannot be reduced to a change of hand in the center of authority or a simple balancing act between self-regulating subsystems. The author opens the "black boxes" of identity and

¹ *Governance Framework for Responsible Research and Innovation*, see: [http://res-
agora.eu/news/](http://res-
agora.eu/news/).

the frameworks of action, both individual and collective, to elaborate a comprehensive and critical approach.

Reflexive governance is very ambitious. It is an experimental process that transforms the roles and forms of normative production. The innovative interpretation of norms comes to modify the behavior of the actors involved, individuals and institutions alike. This form of governance, when realized, is built on action understood as the meeting process of different interests and competing methods and knowledge in accordance with a collective process of inquiry that tends toward the resolution of problems. At the same time, this action process has effects on the participating parties as soon as the action is completed. Such a model avoids the privilege accorded to secure representations that are fixed with the identity of idealized agents. Another advantage is that this model of governance passes the test of transferability between different environments with spontaneous references particular to formative and enunciative spaces. This is important because it is a condition of mutual learning and appropriation. Envisaged in this way, governance can better resist risk of capture, counteraction or dissolution by innovative propositions.

This depth of questioning is not a theoretical luxury. On the one hand, the practice of implementing elaborated modes of governance is paved with such problems, and on the other hand, these modes draw attention to the real learning of the participants. I would add that this type of governance makes it possible to face uncertainties. Yet, these often crystallize criticisms such as the limits of utilitarian or calculative notions of responsibility that come from some RRI analysts. We may rightly ask ourselves, why appeal for the inclusion of interest groups to teach them nothing and learn nothing from them? This learning process must be established as necessary and not simply as an artificial token of participation to appease citizens and consumers.

Practically when reflexive learning focuses on modifying interpretive habits and routines, it makes it possible to better anticipate the risks of resistance and repetition. In this way, it can open up new possibilities and broaden traditional roles. Neither RRI nor other modes of governance are simply idle or ineffective stories, or simply a set of standards that must be obeyed by without interpreting, implementing and improving them. This reasoning is reminiscent of the philosopher Jean Ladrière, who provided useful insight on the subject of norms and their contexts of interpretation. The use of norms is modified depending on the needs of common

experimentation and the fair sharing of knowledge about the conditions of their application. We go through a process of progressive reworking the normative expectations of different parties.

The governance supported by Marc Maesschalck is thus accompanied by a systematic and continuous organization of reflexivity in the monitoring of participation, action, modalities of conduct and even evaluation. Carrying out the processes of negotiated regulation, which he likens to deliberativism in political theory, must allow for a radical transformation of the relationships toward the norms as a pragmatic meaning of an inferential relationship to the norms, rather than in a singular and fixed expression. Norms produce their meaning progressively during the negotiated process of their application.

The recognition of conflictuality by Maesschalck is welcome if the expected governance falls within the political realm, the site of conflict recognition and treatment *par excellence*. This is just as true in the domain of emerging technologies and innovations that have come to reconfigure the identities and interests of the publics that are affected differently by resulting changes. This has been the case since the pragmatist John Dewey wrote his famous work, *The Public and its Problems* (1927), but is now more akin with the fertile field of institutional innovations in the participatory technology assessment (PTA). Volumes 4 and 5, *Precautionary Principle, Pluralism and Deliberation: Science and Ethics* and *The Hermeneutic Side of Responsible Research and Innovation* will go into more detail about the interdisciplinary and theoretical aspects under different generations and types of innovations: genetically modified organisms, synthetic biology, nanotechnologies, “enhanced” humans and animals, autonomous technologies, or robots.

This volume will also open a discussion with Volume 4 (Volume 3 in French), particularly concerning a double deliberation on the ethical and political level and the awareness of a double pluralism therein. The current volume highlights the ability of actors to participate in the transformation of their organization by mobilizing their respective capacities to combine a variety of perspectives with the common interest of finding a way to progressively modify how they contribute to its success. This goes beyond certain theoretical limits of a proceduralization of the theory of deliberative democracy and is also much closer to the conduct of real experiences, whether they are PTA, RRI, or other forms of cooperation. Responsible involvement is implemented under the authority of a governance that is itself

continuously guiding a process of negotiating and applying both factual and normative significations. Note that the normative description of governance given here focuses on different understandings of responsibility, mentioned in Volume 2, notably as task, role and accountability. Subject to engagements with the process, these modifications permit not only an appropriate sharing of responsibilities but also the modification of them and their respective norms.

Echoing the Foucauldian distinction that invites us to step out of the episteme of government in favor of entering the episteme of governance, this work moves beyond functional versions of governance. It proposes a more structured version of this RRI pillar through the shifting of practices already practiced, translated into concepts and directed.

Bernard REBER
December 2016

Introduction

“... to make use of data collected in the course of a preexisting practice, that practice must be translated into conceptual terms; theory must guide practice, not the other way around” [CAN 88, p. 110].

The theories of governance developed over the last 20 years provide us with a new framework for considering the collective conditions of responsible research and innovation (RRI) in conjunction with the political challenges of a society in transition in all of its regulatory aspects, including security, financial and environmental elements. However, governance falls short of the ideals established through reflections on RRI. Approaches in terms of governance theory remain marginal, and its fundamental aspects are poorly understood in the context of research work and recommendations on the subject. The functional aspects of decision implementation involved in governance are at play here, but not the critical fundamental approach that focuses on changing practices and reconstructing both roles and identities of action. We are faced with a paradox: relevant reflections on the governance of RRI, or even on governance as one of the pillars of RRI, are entirely satisfactory in functional terms; however, the connection between an approach constructed using a theory of governance of RRI and a shift in existing practice is lacking. This situation is all the more regrettable given the emergence of a reflexive governance model within the context of scientific debate in recent years [DES 10, BRO 12, BAU 06]. To take full account of this hiatus and the inherent risks for current injunctions in terms of RRI, we need to consider these elements directly from the perspective of different epistemic frameworks offered by different approaches in terms of

governance theory, and to identify the ways in which they may contribute to the construction of an RRI policy.

The paradoxical element that, we feel, requires the most urgent attention lies in the fact that practical interest for governance mechanisms deflects attention from the fundamental questions of governance theory and the benefits they may confer. On the one hand, any theoretical approach to RRI, and any proposal of a coherent framework for the implementation of RRI, must take into account governance questions that are intrinsically linked to the conditions of success for this approach. The simple fact of promoting increased cohesion in current research processes, holding them accountable and increasing sensitivity in this area, making them more reactive or even proactive in this respect, inevitably leads us to consider how commitments may be evaluated, including the procedural elements relating to their governance. Increasing the legitimacy and social relevance of commitments in research and innovation also involves increasing their interaction with stakeholders in civil society, promoting more participatory models for problem solving, and improving monitoring of these practices using indicators that are more directly linked to the quality of commitments made in this direction. In this respect, there is an ideal opportunity for new approaches to governance to take a front seat in the field of added value created by socially responsible research practices.

However, alongside this movement, which has indisputable social implications, we also see that the theoretical aspect of current developments in the field of governance is completely absent from the RRI sector. While many innovative proposals have been made involving a pragmatic shift in governance toward increasing participation, co-construction of solutions, co-design and the comparison of best practices, the theoretical choices that guide these shifts and help us to understand potential risks and areas of incompatibility are noticeably absent. More fundamental epistemological issues are also involved in this proliferation of ideas and practices, notably in terms of their ability to take account of certain assumptions concerning the adaptation of actors to these new conditions of action, the collective anticipation of new risks, the contractualization of these risks, the assessment of possible effects of social resistance, free riding, suboptimality, etc. An approach based on governance theory would allow us to envisage all of the implementation mechanisms involved and to translate expectations expressed in terms of operationalization. Above and beyond avoiding a minimalist execution of bureaucratic injunctions, support is also needed for

the transformations of action identities that implicitly result from this type of approach. A collective experimentation framework will not suffice.

In theoretical terms, reflexive governance offers a model centered on the collective construction of responsibility, with the aim of accumulating new knowledge resulting from the organization of partnerships between researchers and those on the ground [LEN 03, DED 14]. This model attempts to prioritize the effects of actors' engagement in cooperative actions, shared in such a way as to create the conditions for accumulation of new knowledge via collective testing of solutions. These reflexive mechanisms for self-confrontation of knowledge and the self-assessment of norms provide a collective action framework that enables a better understanding of the benefits obtained from networking and partnerships in the production of research and innovation. In order to develop an RRI approach from the reflexive theory of governance, we must use certain theoretical resources that are not particularly well known to authors active in this area. Alongside organizational theory and political science, particularly neo-institutionalism, we must also make use of different philosophical theories of the "norm" and collective action, legal theory, and the advantages gained from a pragmatist turn taken in the field of the humanities, particularly via the development of the concept of social learning.

In order to clearly define this theoretical shift, we have chosen to begin this introduction with a brief quotation from Georges Canguilhem, a philosopher and historian of science: "to make use of data collected in the course of a preexisting practice, that practice must be translated into conceptual terms; theory must guide practice, not the other way around" [CAN 88, p. 108]. This extract hints at a certain dialectic shift, from practice to the action of governance, via theorization. Following this movement, there are two major prerequisites for the efficient governance of research. First, we must reconsider the identity tied up in an existing research practice, and defined principally by this practice; second, research must be conceptualized as a process of action that may be understood in terms of the meaning and social added value of its organization. If we wish to direct research, it is not enough to accompany and create mechanisms for monitoring practice. We must also conceptualize its potential for self-transformation, and for challenging its assumptions in terms of its interest, role and identity, in order to anticipate benefits that may initially appear irrelevant or outside of current usage.

The extract from Canguilhem also highlights the idea that specific stakes are involved in creating a capacity for research governance, which moves beyond assumptions on the basis of current practice. Furthermore, it hints at the mediating role that theorization may play in establishing the conditions for governance of this type. Reflexive governance theory may, moreover, constitute the only means of avoiding, in terms of research processes, something that Canguilhem had already noted and criticized in terms of the relationship between behavioral experts and human individuals. Canguilhem deplored the epistemological poverty of disciplines that were unable to “situate their specific behavior in relation to the historical circumstances and social circles within which they propose their methods and techniques and aim to gain acceptance for their services” [CAN 02, p. 377]; at the same time, he feared that this shortcoming might conceal an unconsidered choice, which was even more problematic, based on utilitarian behaviors¹. This choice would involve putting questions of utility before questions of meaning, and treating the relationship with the social context in terms of an organizational science, aiming to optimize the learning and adaptation performances of collective intelligence. This approach to science contains an implicit idea of intelligence as measured by social utility; developed to its fullest extent, the function of research and innovation in sciences would be to guarantee the adjustment of human systems for the production of means to interact with their environmental context.

Canguilhem considers that even if this organicist approach to the social performance of science was twinned with a mechanistic approach, aiming to isolate a specific function of collective programming and directing the functional adjustment process from the exterior, it would not be possible to overcome the initial reflexive shortcoming, which would limit the whole of the approach to its interest in terms of utility. There is an illusory idea of an assumed state of social utility, allowing proponents to enter into the context of a tendering process formulated by the market or the state, without looking

¹ Canguilhem’s work is particularly relevant to this context due to his willingness to question the social function of scientific practices, even at the risk of being misunderstood. Some of his arguments against the misuse of psychology in administrative recruitment and selection processes [CAN 02, p. 376] continue to have an impact to this day in the assessment of his work. However, these efforts to gain the clearest possible understanding and to challenge the conditions of governing scientific reason have led other researchers to see his work as, essentially, a radical critique of the technicist construction of the social [GUC 10, p. 260–261; MAE 15a].

beyond or overcoming a perceived sense of urgency, requirement or necessity, which determines the relationship with the common interest. The real question to be posed concerns the placement of an intellectual disposition in relation to social interest. This question requires us both to know what form this social interest may take and to understand the relationship that a certain form of scientific organization might have with this interest. The only way to answer this question is to create a distinction between science and the ways in which it is organized. There is no way to guarantee a convergence of social interest and science in a strictly immanent way by supporting and promoting the capacity for self-regulation, just as this convergence cannot be ensured by programming results from the outside.

As our brief extract from *Ideology and Rationality in the History of the Life Sciences* demonstrates, the problem needs to be addressed from another angle, that of reflexivity, which explicitly defines the meaning of a “relation to historical circumstances and social circles”, allowing us to envisage a suitable form of governance for research and innovation processes. In this case, we do not simply consider research in terms of its utility for the mechanisms of governance, as a function to invoke and control in order to increase collective aptitude to produce solutions. Instead, the aim is to initiate a collective process to transform the relationship of all of the actors concerned with their action identities, creating favorable conditions for the implementation of new forms of cooperation in the co-construction of social interests.

The hypothesis of reflexive governance, which we intend to develop within the framework of an RRI policy, is thus based on a bipartite theoretical shift. First, the hypothesis translates the question of RRI onto the plane of a theoretical approach to governance; giving a direction for research requires us to conceptualize the action involved in this research as a process where different and competing interests, methods, and knowledge meet, according to a collective process of enquiry for the purpose of solving problems. Second, the hypothesis shifts the theoretical focus onto a problem of reflexivity that is inherent in the operation of governance, i.e. the specific process by which an action acts on itself during its own implementation. The idea is that elucidating this particular relationship of the action to itself, resulting from the task of governance, gives us a greater ability to anticipate the risks of resistance and repetition that arise when attempting to modify

interpretative habits and routines in order to expand the relationship to possibilities and expected roles.

We shall take a progressive approach to this hypothesis and its consequences, starting from the first shift. From this starting point, we shall consider (Chapter 1) why an approach in terms of governance theory has been lacking in the field of RRI, although the subject of governance is used in describing the modes of implementation. We shall then explain (Chapter 2) how the theory of governance has developed, and how reflexivity in relation to a second mode was included from the outset in order to complete an organizational action plan. Following this, we will examine this first “genealogy” of governance theory, which leads on to our second shift, concerning reflexivity. Our objective is to demonstrate (Chapter 3) the advantages to be gained from a more rigorous treatment of reflexivity considered as a front-line operation, allowing us to explore an internal zone of development within action. This forms the basis for a discussion (Chapter 4) of the main aspects of a reflexive governance theory. In Chapter 5, we shall demonstrate the advantages of this approach when it is used explicitly to tackle the conditions for implementing an RRI policy. Chapter 6 is devoted to a reconsideration of the proposed approach, this time from the perspective of the political philosophy of intellectual intervention in the surrounding society.

RRI and Governance Theory

For the moment, we shall provide a simple and operational definition of governance, alongside a brief summary of the history of its success in the language of the social sciences. These questions will be considered in greater detail in Chapter 2. Our purpose in this chapter is to demonstrate the lack of consideration of the perspective of governance theory in responsible research and innovation (RRI) and to consider both the reasons and consequences of this shortcoming. From this starting point, our aim is to promote a shift in the axes of reflection and to convince our readers of the interest presented by an approach to RRI constructed in terms of governance theory and reflexive governance.

1.1. Definition of a minimum concept of governance

From the mid-1990s onward, different intellectual approaches aimed to respond to the debates created by deregulation practices and proposed pathways for a positive redefinition of the roles of public and private actors in order to balance the markets. This trend may be seen in work by authors such as Braithwaite and Ayres [AYR 92] Freeman [FRE 97], Ostrom [OST 97] or Rhodes [RHO 97]. These studies are focused on the emergence of new types of cooperative behavior, blurring the traditional separation between regulator and regulatee. When the traditional procedures used to control exchanges in the marketplace are modified, new questions appear, particularly due to the fact that policies guaranteeing the best interest of the public may no longer be guaranteed using the same methods as before. If we deconstruct the model of an authority that operates using orders and sanctions, issued from a dominant position, then we need to define new strategies to represent the interest of third

parties, treat external implications resulting from contractual activities, imagine new means of external or remote control, and share and evaluate missions of public interest. The White Paper of the European Commission, published in 2001, is an excellent illustration of these new concerns. This can be seen simply by looking at, and considering the links between, the five principles of “good governance” found within the *White Paper*: we need to identify the means of establishing a new division of *responsibilities*, ensuring the *efficiency* and *coherence* of the established mechanisms, while remaining vigilant regarding the development of *participation* within a framework of *transparency*. We thus see a progressive development of how the requirements resulting from a fundamental reorganization of the modes of market regulation are understood: collective responsibility must be reconstructed from new bases, with new legislative and operational tools, conserving its aims of extrapolating and including the interests of the greatest number, while maintaining legitimate authority with the power to control and sanction. Rosanvallon expressed this structure of producing generality simply as a combination of three specific forms of legitimacy: impartiality, reflexivity and proximity. In a recomposed and globalized commercial society, the authority of public interest can no longer be exercised by a technical bureaucracy proposing generalist measures in combination with contextual requirements and particularities. The neutrality of the commons must, instead, be constructed on the basis of reflected interactions with particular situations.

Several large-scale crises during the years 1995–2015 finally led to an awareness of the constraints imposed by the new order of the globalized economy in attempts to reconstruct, within this context, a true policy of public interest. We shall analyze this development in greater detail in Chapter 2. However, it is important to note that researchers at work in the 1990s already had a relatively clear idea of coming challenges, even within their minimalist approaches to the concept of governance. They identified two fundamental aspects: first, the need for new types of relationships between public and private actors, and second, a transformation of the modes of organizing collective actions involving these different actors. There is, therefore, a need not only for new types of collaboration – with the implication of new roles – but also for innovation in the forms of action allowing interactions between these roles. Upholding the idea of governance in the place of market regulation and economic government challenges not only *action identities*, but also the *action structures* that make it possible to

create a collective regime. We may reconsider a definition put forward by Renate Mayntz in this light:

“Governance is the type of regulation typical of the cooperative state, where state and non-state actors participate in mixed public/private policy networks” [MAY 02, p. 21].

Using this minimal definition, roles are characterized by the idea of participation, which creates a symmetry between the actors involved. The State is an actor involved in regulation processes and, as such, is placed on an equal footing with other, non-State, actors. This situation modifies the *action identity* of the State, which is, furthermore, labeled “cooperative State”. This new collective regime is also dependent on a new *action structure* in order to function. This structure is the network specifying how a combination of private and public actors may be made up to allow it to operate in the field of regulation.

Evidently, there are many areas that still require clarification. These essentially result from a generally descriptivist position with regard to governance, considered, using this definition, as a sort of emerging public practice, rather than as a coordinated collective action with normative guidance. In order to go further, we must open the black boxes of *identity* and *action structures* in order to create a critical and more specific approach. Studies of this type only started to become systematic in the mid-2000s, notably in legal theory, which had lagged behind other areas with regard to governance. Initially, governance was only seen, in this domain, as a specific form of interaction between judicial and economic normativity¹.

However, the question of a new approach to means of governance in the public interest, with the proposal of new methods of economic regulation, can never be reduced to a shift in the center of authority (governance without the State), nor to simply abandoning attempts to further the general interest in order to create a balance between self-regulating subsystems. The notion of governance is therefore more ambitious, aiming to identify new combinations in order to extrapolate general interest and produce suitable normative frameworks [BRO 11]. This is why we have focused on the aspect of action identities and action structures, the key element of even minimalist

¹ A similar problem occurs in political philosophy, but for more fundamental reasons, associated with the privileged relationship between political philosophy and the modern model of representative parliamentary government.

and mostly descriptive approaches. Governance is an experimental process, aiming to transform roles and forms of normative production. The aim is to try out new forms of actor behaviors, displayed by actors who are themselves guided by an innovative use of norms.

The advantage of this minimalist approach is that it highlights the strong connections between a theory of governance, still in its infancy in the 1990s, and organization theory. This essentially relates to the capacity of the actors involved in an organization to participate in its transformation, making use of their collective ability to combine a plurality of points of view on the common interest, resulting in a progressive modification of their ways of furthering this common interest. Charles Sabel, notably, insisted on the fact that one of the major characteristics of post-Fordist organization is its ability to capitalize on extreme cases requiring a change from routine practice [SAB 89]. Earlier, theorists such as Argyris and Schön had already highlighted the power of questioning the basic beliefs of actors involved in institutional operation [ARG 78, ARG 96]. Systematic and structural reconsideration of these experimental shifts does not take place of its own accord, but it is possible to create favorable conditions, organize and create processes for them in such a way as to provide additional input regarding the development processes of an organization. The spotlight is thus on the ability of a system to organize and direct change, and to couple this ability with certain specific resources, including actors, their interactions and the norms that determine these actions.

Taking this reflection further, we see why researchers who have used this paradigm of change governance have attempted to broaden the field of actors who may be involved in this type of process. In the field of healthcare, for example, this has resulted in a greater focus on the potential roles of patients and operatives in the more “auxiliary” medical professions within major care establishments.

While the minimalist approach to governance involves an extension in the definition of actors involved in the process, it also creates additional demands in terms of understanding roles in relation to norms. Their use may change according to a shared experimental need, a desire for fairness and for knowledge sharing regarding conditions of application. Developing contacts between actors, involved in the activities concerned by a regulation in different ways, is dependent on the use of suitable tools, making use of uncertain regimes and suboptimal approaches, with new markers and

indications of satisfaction. In *Agir dans un monde incertain*, Michel Callon, Pierre Lascoumes and Yannick Barthe showed the extent to which innovative and participatory approaches to a problem involve a multiplication of hybrid and decentralized forms of negotiation, in complete contrast with conventional forms [CAL 01]. At the same time, there is an increase in the quality of debate and in the variety of information sources [CAL 01, p. 223], as in many cases where the involvement of local residents or users has resulted in the refinement of an analysis and a consideration of solutions lying outside the scope of an approach based exclusively on parameters available to experts. However, the added value provided by what Americans have come to call regulatory negotiation processes or negotiated rule making, which is more fully fleshed out in deliberativist approaches to political philosophy and democratic theory, can only be fully exploited when accompanied by a radical transformation of the relationship to norms, toward something which pragmatists have referred to as an “inferential relationship”. Using this approach, instead of being considered as fixed and delimited truths, norms only acquire their full meaning progressively via the negotiated process of application. Hence, in the absence of externally defined certainties, constituting a benchmark of truth and guaranteed by an authority with the capacity to validate interpretations, a new action structure is needed in a regime of uncertainty. This seems to take the form of the authority responsible for guiding the process of negotiating the continual meaning of common truths, the responsibility inherent to participation in a process of this type and finally the reconstruction of a collective relationship to norms resulting from the process.

Consider, for example, the involvement of patient collectives in reforming the services offered by a health insurance company with relation to chronic conditions. Up to what point should the mechanism, and, furthermore, the collective itself, continue to operate? Might this be simply a variation of consultation processes in a representative system, or a means of reinforcing the assertiveness of some of the stakeholders in a system, in order to increase the collective intelligence of its governance function? Is there, then, a need to transform the governance of the system itself, and, if so, how?

Limiting our discussion to two elements, *action identities* and *action structures*, the field opened by governance theory in the 1990s is vast. However, it took almost 20 years for the full intellectual implications of this development to be clearly understood within the social sciences. To use a

Foucaultian expression, this constitutes a change in *épistémè*, leaving behind the *épistémè* of government in order to enter the *épistémè* of governance. This radical change, we feel, explains the difficulty inherent in understanding the development from a specific field; as there is a fundamental modification of all representations of power relationships, the change can only truly be understood from a point in the past or the future. It must either be reinterpreted using the terms of the old model, or seen in the light of a new model, used to analyze problems and reformulate old questions along these new lines. In this case, the question of analysis in terms of governance is particularly complex: using the terms of the old model, it does not exist; using the terms of the new model, it is explained in terms of itself. Returning to our “minimal” definition, does it make sense, in the *épistémè* of government, to speak of a change in the role of the public order responsible for making and applying rules in order to create rules differently through cooperation? No. Does it make sense, in the *épistémè* of government, to imagine mixed action structures connecting actors from the private sector with those from the public sector? No. A gray area emerges. Clearly, the outdated *épistémè* will attempt to adapt and to expand its vocabulary, using all possible means of self-preservation and maintaining control over the description of what it is undergoing. However, acting in such a way prohibits it from grasping this transformation.

1.2. RRI and governance theory

While scientific literature on RRI is a recent development, given the context of the subject’s political emergence, work in this area has benefitted from the results of studies in the areas of *technology assessment* [KLI 96, BER 91] and research ethics [DOU 02]. Furthermore, the choice of a strong legal concept, such as responsibility, present in the corporate world for several decades and also assists in identifying doctrinal foundations in connected domains. However, these resources have not contributed to considerations of RRI in terms of governance theory. Admittedly, the issues involved in this approach were not particularly present in existing practice within disciplines. Researchers noted, in the late 1990s [STO 98, PET 98], that governance questions needed to be treated in a less descriptive manner according to the different processes of collective action in the fields of both private and public management. However, the use of theory is essentially limited to the creation of analysis grids used to compare different ways of applying of these practices in the light of the situation of implementation

[EWA 01]. Additional general reference to theoretical questions is often limited to listing principles of “good governance” as a series of axioms or umbrella terms, covering the value of stakeholder involvement, the role of collaborative assessment or the contributions of participative design [JEL 16]. In the best of cases, these umbrella terms reflect a global form of production of democratic existence, following the model of deliberative democracy [BOE 04, p. 2] so as to highlight the functions of both participation and expansion of interaction between all parties concerned with finding a solution. The loop may appear to be closed when the theoretical question is limited to a simple formalization of the underlying attention process; the action of organization is no longer centered on the results to obtain, but on the manner of “proceduralizing” the way in which they are obtained [SCH 14, p. 25–26]. Following this functionalism, which is sometimes implicit, institutions then simply require support in self-adapting to their new environments, helping them to define their priorities and to avoid falling back into old routines. However, authors who wish to select coherent mechanisms following a specific teleology cannot subscribe to these functionalist fictions and must explore more complex levels of theorization, for example by defining a type of rationality, such as “collaborative rationality” [INN 03], or a form of institution-specific collective action, such as democratic experimentalism [SAB 12]. Elucidation of the *type of rationality* being used is, in fact, the only means of elucidating the mass of principles and values, adjusted from time to time to suit current practice and collected in a sort of recipe book, in order to identify a coherent perspective regarding their notions of action, norms, and the institutions involved in shared living [APE 88, LAD 77a].

A systematic approach to RRI issues in terms of governance theory finally emerged within the framework of European scientific policy in 2013. We shall begin by giving an outline of this fundamental change, before discussing the reasons why it did not occur earlier, and why it is still far from universal in work on RRI.

1.2.1. *The transition toward questions of governance in RRI policy*

It may appear strange that the modes of governance used in major European projects linked to the framework programme (FP) only became the object of specific reflection and assessment, in terms of their effective capacity to articulate the production of scientific knowledge and its potential

social uses, from the 2010s. It seems that a clear connection between the social principles promoted by the FPs and the capacity to develop other forms of research governance, with the ability to convert these principles into collective commitments, was only made at this point. However, odd this may seem, the European Commission only recognized the need for true reflection on possible modes of governance for research and on the underlying paradigms in the wake of problems and challenges identified within the 6th and 7th *Framework Programmes for Research and Technological Development*, alongside the adoption of RRI in the *Horizon 2020 programme*. This resulted in the creation of the Governance for Responsible innovation (GREAT) project in 2013, with the aim of “developing a model (...) of the role of RRI governance” with the capacity to inform political decision makers regarding the integration of responsibility or responsible innovation in future research activity. We shall now attempt to trace the history of this change.

In 2009 and 2010, the team responsible for evaluating FPs 6 and 7 highlighted three aspects for improvement, all of which concerned different facets of research project governance. The first concerned the limited involvement of industrial actors with regard to the articulation of knowledge production and technological innovation practices [EVA 09, p. 46–47]². The second aspect took account of certain progress that had already been made to encourage female participation in research, but noted that current results in this domain remain unsatisfactory³. The third aspect questioned the transparency of the knowledge production process and innovation practices.

2 See the following extract from the assessment of FP7: “FP7 aims to bundle together all research-related EU initiatives to boost growth, competitiveness and employment. Innovations are the key elements to achieve these ambitious goals. As a result, the Framework Programme has to cover the whole innovation process from basic research to demonstrators. Companies are the major drivers in bridging the gap between research results and innovation. Yet, despite the acknowledged importance of both large companies and small- or medium-sized enterprise (SMEs) in this role, *industry participation, whether as a share of funding or number of participants, has been declining continuously for 15 years*”, [INT 10, p. 48], our italics.

3 Once again, see FP7: “The FP6 Ex post Evaluation recommended the continuation of Gender Action Plans (GAPs) in FP7, but this advice was not followed. The FP6 Ex post Evaluation concluded that there is a need to ‘substantially increase the participation of female researchers in FP projects’, and further suggested that data should be more rigorously collected to provide a best possible basis for policy” [INT 10, p. 45].

Once again, further progress is needed⁴. Moreover, the FP evaluations did not simply highlight the progress needed in terms of transparency in knowledge production, but also indicated the need for *education* techniques in order to make knowledge accessible to all stakeholders [INT 10, p. 76]. Although significant progress has been made in this area, while maintaining a position of excellence in education, the “research, education, innovation” triad needs to be more deeply integrated into the heart of the FPs.

Looking closer at this critical analysis contained in the evaluations, we note an imbalance between the central principles of the FPs and their implementation. In fact, while the European Commission remains at the forefront in encouraging education and innovation, industrial participation in the process of knowledge production and innovation has decreased in the last decade. Note, too, that while all of the FPs aim to increase the percentage of women participating in research and innovation programs, the results of the implementation of these objectives are disappointing. On careful examination of the FP evaluations, we note significant differences in the implementation of the principles intended to provide structure. Principles have been implemented with greater success in some projects than in others. The key question is to identify not only the ways to better guarantee the successful implementation of principles in projects with practical results that may be below expectations, but also ways to guarantee *harmony* in the ways of applying different structuring principles in FPs. The only way to address these issues is to take a more systematic approach to the different modes of governance selected, as these are the only factors with the potential to explain both the significant variation in obtained results and the considerable reductions in quality in the implementation of principles, seen notably in the form of weaknesses in terms of transparency and participation. Thematization of modes of governance as a specific issue for analysis finally started in 2012 in response to this difficulty⁵. Before 2012, while the term

4 “A *transparent process* for priority setting which is in line with future market demands has to be implemented. Industry and Research bodies should be deeply involved in this process” [INT 10, p. 50].

5 See a brief, critical extract from the evaluation of FP7: “Most of the basic procedures connected to the development of research themes and the selection of projects (elaboration of calls, conduct and probity of peer review, monitoring of gender balance, oversight of ethics) work as well as could be expected. Some thought is needed about the governance of research and about whether there would be advantages in having a sharper division between strategic decisions and implementation” [INT 10, p. 67]. As we can see, the evaluation team recommends an analysis of research governance, something which had not been done in the period 2002–2010.

“governance” featured in the evaluations of FPs implemented between 2002 and 2010, it was used to denote the articulation between different key themes of the FPs, or between different types of actors involved in practices of knowledge production and innovation. No critical analysis of the *specific types* of articulation covered by the term was provided, making it impossible to carry out comparisons and make choices on the basis of determined models.

In response to the problems and challenges identified in the ECs 6th and 7th *Framework Programmes for Research and Technological Development*, and to the increasing demand for democratization in the development and application of technological research projects [GOU 14, p. 32], the Commission decided in 2011–2012 to adopt *RRI*, giving it a central role in the *Horizon 2020 programme*. More specifically, the commission adopted a conceptualization of RRI based on six principles: engagement, gender equality, science education, open access, ethics and governance. The last principle acts as an “umbrella” under which the other principles can come together [LEA 12, p. 4].

1.2.2. Introduction of explicit reflection on governance theory

Let us now consider the way in which this first shift toward governance questions led to the introduction of a more systematic approach to these questions and allowed approaches constructed in terms of governance theory to come into play. As we have seen, the emergence of underlying models of governance as objects of reflection was made possible by the imbalance between the structural principles of the FPs and their implementation in research and innovation practices. The desire to specify the conditions of an RRI policy and to define guidelines arises from an *explicit reflection* on modes of governance, which is, all too often, absent from research projects and their modes of operation; this shortfall was highlighted by the thematization of governance.

The publication of the pamphlet “Responsible Research and Innovation: Europe’s ability to respond to social challenges” in 2012, announcing the adoption of RRI and including the first presentation of the six key points, followed on from three key events in 2011: two commission workshops and

the publication of an article by René von Schomberg containing a new definition of RRI. In 2012, another important article, by Richard Owen, Phil Macnaghten and Jack Stilgoe, laid down a second definition of RRI. These two definitions are the most widely cited and provide a conceptual starting point for the majority of the Commission's bodies involved in RRI. Together, these three publications and two workshops laid the foundations for effective reflection on modes of governance, something which is still ongoing in the context of the GREAT project.

The two workshops took place 1 week apart, in May 2011, the first in Brussels and the second in London. There was some overlap in the aims of the two workshops, which brought together both academic and political experts. In both cases, the key goal was to provide a definition of RRI. In Brussels, the focus was on the creation of political recommendations, while in London, priority was given to the distinction between RRI and the conceptions of the science–society relationship underpinning the previous FPs [OWE 12, p. 752] in order to prevent RRI from becoming simply a new label for “business as usual” [OWE 12, p. 757]. The conceptualization of RRI has been the subject of special attention from the moment of its adoption by the Commission, with the aim of overcoming the insufficiencies observed in previous FPs with regard to the public acceptability of innovations (now considered impossible to guarantee [OWE 12, p. 752]), and to the responsibility aspect of innovative practices. Previously, responsibility was conceived as a matter of looking backward to attribute blame; due to the Collingridge dilemma [GOU 14, p. 32], effective direction toward the future was impossible [PAT 14, p. 17–18]. We also see the beginnings of a real turn toward reflection on governance: Gilles Laroche, representing the Commission, announced funding for research projects over the remaining duration of the 7th FP aiming, among other things, to develop “governance frameworks” [OWE 12, p. 752].

Traces of most of the principles that emerged in 2012 can already be found in Hilary Sutcliffe's report on these workshops in 2011 [SUT 11]. There is a strong focus on social engagement and the inclusion of the greatest possible number of groups and individuals in the orientation of research, and on the ethical implications of RRI activities. Openness and transparency were identified as key aspects of rebuilding public confidence in science. The subject of education was briefly mentioned in passing, and there was no reference to gender equality. Finally, with regard to governance, considerable attention was devoted to the types of surveillance

mechanisms that might be capable of anticipating both problems and opportunities. This approach to governance is a result of the two theoretical currents explicitly mentioned in the report and used as conceptual sources: anticipatory governance⁶ and adaptive governance⁷. At this stage, while the concept of governance is visible, it is not yet considered as the object of specific reflection; the fact that RRI involves governance practices is taken as a given, without sufficiently explicit and thorough treatment of the connection between the two.

An influential article by René von Schomberg was published in the same year. It begins by offering a definition of RRI⁸, alongside three normative reference points for the evaluation of new products: ethical acceptability, sustainability and social desirability. In terms of *product* management, the author provides a very rough indication of the interest in moving beyond the governance of risks to consider the governance of innovation. Moving on to the management of the innovation *process*, von Schomberg notes the relative lack of adequate forms of governance [VON 11, p. 12], and highlights the need for further research in order to develop normative models of governance [VON 11, p. 13]. On this point, he refers to a text by Stephen Rainey and Philippe Goujon, within the same volume [RAI 11], which establishes theoretical bases for Goujon's later empiricotheoretical work within the GREAT project. This text also marks the first appearance of the "Louvain School's governance theory" in RRI literature.

Owen *et al.*'s article also identifies anticipatory governance as one of the theoretical sources of RRI, alongside technology assessment, sociotechnological integration and the engagement of the public and stakeholders, and "midstream modulation" [OWE 12, p. 752]. The three authors identify three characteristics of RRI – the democratization of governance of intent, the institutionalization of responsiveness and the reframing of responsibility – and four key dimensions: anticipation,

6 The main representatives of this current within the workshops were Risto Karinen and David Guston [SUT 11, p. 5, 17].

7 Again, Sutcliffe refers to a text by Karinen and Guston in relation to this theoretical current, which is less widespread than that of anticipatory governance, both in this report and in academic texts on RRI [SUT 11, p. 16].

8 "Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products in order to allow a proper embedding of scientific and technological advances in our society" [VON 11, p. 9].

reflection, inclusiveness and responsiveness⁹. These four dimensions have been widely used in the documents generated by the Commission's projects. For the authors, governance is primarily linked to democratic participation in the choices made regarding the direction of innovation. They also highlight the need to reflect on governance frameworks, although this task is not considered to be one of the key elements in subsequent developments of RRI.

These elements preceded the publication in which RRI was defined using six key principles. In this document, governance was presented as a three-part overarching structure, an “umbrella” aimed at harmonizing the other principles. This document, presented by Máire Geoghegan-Quinn in April 2012, constitutes the main basis for a series of projects funded by the Commission involving RRI¹⁰. The principles are not always used in a homogeneous manner: sometimes governance is absent [RES 14, POL 15], while on other occasions the six principles become eight with the addition of sustainability and social justice [IND 15, p. 18–40]. The fact that governance forms the central pillar of the other principles is not called into question; nor is the idea that governance models need to be redesigned in order to respond to new challenges¹¹. True reflection on possible models of governance, alongside the subjacent paradigms, only started with the GREAT project.

⁹ These same dimensions feature in a more programmatic form in an article by the same three authors published in 2013. Furthermore, this article considers the concept of governance as the key framework for reflecting on innovation from the outset, in a more explicit manner than in the 2012 text [OWE 13].

¹⁰ Such as Engage2020, RRI-tools, ProGReSS, ResAGorA, PERARES, RESPONSIBILITY and GREAT.

¹¹ For example: “we begin our proposition with the governance criterion, because in good governance lies the key to success of all the other aspects of RRI, while bad governance may create obstacles for even the best analysis of criteria and how they may be indicated, monitored and used”. The document goes on to discuss an effective change in the understanding of governance: “In the expert report on the global governance of science (European Commission, 2009), governance was described as entailing ‘multiple processes of control and management’ and involving ‘directing or setting goals, selecting means, regulating their operation and verifying results’. However, 3 years later, in the EU report on ethical and regulatory challenges (European Commission, 2012), the focus of governance shifted to reaching a consensus in a network of relevant stakeholders. In relation to governance in the context of RRI, this development is reflected in the well-known definition of RRI by von Schomberg” [IND 15, p. 18].

Funding for projects of this type seems to be a direct response to the explicit inclusion of governance as a key principle of RRI¹².

1.2.3. Contributions of the GREAT project

Beyond the appearance of governance as a key principle of RRI – a concept always included in discussions in this area – the major development in this case, as we aim to demonstrate, is the move toward implementing a systematic and critical approach in terms of governance theory, in such a way as to create clear epistemological waymarkers between different possible orientations and their operational variations. Different schools of thought have moved beyond the use of certain minimalist descriptors, such as the inclusion of private, public, or even community actors in shared action structures, to implement shared experimentation processes to solve problematic situations; they have created distinctive pathways, selecting different opportunities for action, leading to very different outcomes. Seemingly basic terms such as partnership, participation, commitment, transparency, responsiveness and shared experimentation may be used to refer to very different practical realities depending on the selected theoretical orientation. It is not enough to simply consider former modes of government in order to highlight differences; instead, we must establish cognitive distinctions between the different pathways that structure all claims to innovation. This operation is complex, as the field in question is in its infancy, and lies at the meeting point of several disciplines. Descriptive solutions, however, fall far too short. In the field of RRI, the first steps toward an approach in terms of governance theory were made by the GREAT project.

The aim of the GREAT project was to “develop an empirically based and theoretically sound model of the role of responsible research and innovation governance”¹³ in order to inform policymakers with regard to the integration of responsibility or responsible innovation in future research activities. To do this, the project was divided into seven work packages: (1) project management, (2) a survey of current theory and practice, (3) the context of RRI, (4) applied analysis using case studies via an analytical framework constructed in deliverables D3.3 and D3.5, (5) a second analysis, responding to the gaps identified in the empirical analysis, (6) the preparation of

12 The GREAT project was financed by the 7th FP and was intended to run from February 2013 to February 2016.

13 See the general presentation on the GREAT Web site: <http://www.great-project.eu/>.

guidelines and recommendations and (7) their dissemination. The project thus involves an exploration of the processes and possible organizations of research and innovation in the light of two main concepts – governance and responsibility – in order to identify concrete mechanisms able to respond to the challenges resulting from the combination of innovation (technological or otherwise) with democratic participation.

From this first theoretical survey, two key elements are apparent and remain so throughout the GREAT documents: first, the need to reconsider responsibility, both in its own right and in its articulation with governance models, and second, the need to take into account the contextual limits of constructing and applying norms in order to go beyond the proceduralism encountered in many earlier approaches. Four main theoretical sources were central to this approach formulated in terms of governance, all of which supported the full trajectory of the GREAT project and served as the main references when creating the analysis grid for the case study. The first is found in the work done by Marc Maesschalck and Jacques Lenoble on power of norms, whose main goal is to found a contextual pragmatism founded not on a formal logic of universal ethical principles but rather on attention paid both to the ways that norms are experienced by the actors to whom they are addressed, and to the operation that allows a social group to act on itself by for collective regulation [MAE 01, LEN 03]. Three other sources were also called upon to construct this approach. A second major theoretical source comes from Pierre-Benoît Joly's approach, which analyzes four ideal-typical models for the governance of risks [JOL 01]. Work done by Bernard Reber and Sophie Pellé on the plural nature of moral responsibility, whose analysis must not be limited to either relativism or monism, constitutes a third theoretical source for the GREAT project [REB 16a, REB 16b]. Fourth, and finally, the deliberative theory of governance played an important role in the wake of Reber's analyses, providing a critical perspective on the way the concept of deliberation was mobilized in the context of RRI approaches [REB 16a, GIA 16]. Goujon, Gianni, Reber and Pellé introduced a classification using four governance paradigms¹⁴ and four governance

¹⁴ Technocratic, ethocratic-normative, epistocratic-cognitive and democratic-inclusive paradigms.

models¹⁵ via a presentation of schematizing, intentionalist and mentalist (SIM) presuppositions, and a brief analysis of the importance of reflexive construction of context in relation to the construction and application of norms [JOL 01, p. 12–15].

This initial theoretical work was followed by a two-stage process of inquiry. First, Pellé and Reber exemplified the established typology via a rather schematic analysis of seven EC projects [PEL 14]. Their approach consisted of five steps, including an outline of the selected governance tools, the general connection with the context, the use of tools, the SIM presuppositions involved and, finally, the governance model. Barbara Grimpe and Marina Jirotko then produced a more detailed analysis of five projects in order to determine the attention devoted to anticipation, participation, transparency, responsiveness and reflexivity, and thus to the five key elements/pillars of RRI. Following the formulation of a working hypothesis concerning the governance model in question, the research and innovation aspect of each project was analyzed using a seven-stage process: (1) identification of governance tools, (2) characterization of the relationship between governance tools and the broader context, (3) specification of the *aims* of governance tools, (4) identification of possible instances of reflexive governance or collective learning, (5) identification of at least one ethical challenge and the way in which it was managed by the consortium, (6) reconsideration of the working hypothesis and, finally, (7) a contextualization of the approach to the project, in connection with the EC program to which it belonged [GRI 14, p. 17–24].

Based on this enquiry, Gianni was then, in the 5th WP, able to return to theoretical aspects in order to create a framework for the evaluation of theoretical approaches to RRI. As there is no consensus concerning the definition of RRI¹⁶ and as the configuration of tools for future research projects depends on its formulation, the authors identified a need to create an instrument to measure the capacity of these various formulations to fulfill their assigned roles. Among other things, they noted a degradation of key concepts in actual

15 Standard, standard-revised, consultative and co-construction models. Note that while there are clear connections between the two classifications, the authors show that one-on-one mapping is not possible. For example, the standard model, while essentially based in the technocratic paradigm, also includes elements of the ethocratic and epistocratic paradigms [GOU 14, p. 40–44].

16 A summary of the nine conceptions of RRI, as identified in one of the documents of the GREAT project, may be found in [TIM 14, p. 17–31].

implementation: for example, responsibility has a tendency to be limited to liability, and ethical problematization is limited to research methodology, without considering the possible impacts of a technology on society [GIA 14, p. 11]. While Gianni insists on the need to adopt RRI as a form of governance, stating that “institutions need to prefigure structures and processes that could facilitate changes and developments according to societal developments” [*Ibid.*, p. 42], he also highlights the importance of accounting for context in the implementation of RRI. Considering the dangers of a fixed model of governance, he then chose to integrate the reflexive and reactive aspects of RRI into this model [*Ibid.*, p. 30].

Following the publication of a handbook of recommendations for policymakers [GUI 16], the GREAT project may be seen as a first instance of systematic and serious consideration of the decisive role of the conceptualization of governance in moving toward research and innovation practices with an increased respect for public wishes and greater anticipation of societal effects. In this examination of governance models and their epistemological foundations, the authors of the GREAT project took an important third step in the reconfiguration of research structures – the first of which was the non-thematized use of the concept of governance in the decade preceding funding of the project, and the second represented by explicit thematization in 2011 and 2012.

1.2.4. Reasons for the delayed shift

How, then, are we to understand the time needed for this reflexive shift toward governance theory in the context of research and innovation policy to take place? How are we to understand the apparent difficulties involved in this passage toward a more reflexive approach to operating frameworks, with the capacity to reinforce the social responsibility aspect of research and innovation processes?

The first reason that may be given for this state of affairs concerns the research required to support such a new approach, especially with regard to the governance of research and innovation. A significant dissociation exists between the domains of research governance and innovation governance, but also between these two domains and that of governance theory. Questions concerning innovation governance have also been widely appropriated by the field of managerial literature, with a strong focus on method and organizational strategy. Finally, questions of research governance are

generally found only in carefully delimited areas of R&D within the private sector; firmly wrapped up in issues concerning the reform of public research, which is increasingly marginalized (particularly in the humanities), or tacked onto agendas established by the private sector. With the reform of thoroughly obsolete peer-based evaluation models, the need to take account of social impacts on potential beneficiaries, and the need for reorganization, using a network model for the sharing of knowledge and best practice, all within a sector that is still based on the outdated model of learned societies, academic research governance is faced with a problem that cannot be solved on this level alone. This problem concerns both the reform of the university system and public research policy, alongside considerations of integration into an international research market. The almost total lack of resources to support theoretical work on RRI governance in this area is not, therefore, surprising.

However, a second, more fundamental reason may also be given. Posing questions specific to RRI in terms of governance theory requires an epistemological shift; the necessary conditions are far from clear in the various sectors concerned by these issues, such as research ethics and technology assessment. The best treatment of this type of question may be found in the area of corporate social responsibility, but a conversion for other sectors is still required, and must involve prior identification of the specific implications of the problem in question for these sectors. This type of preliminary assessment does not yet exist, as, once again, it an epistemological shift is required.

In a corporate context, the passage toward governance questions happens spontaneously, as the organization of a company in terms of precise functionalities is already recognized by researchers as an epistemological element. The emergence of a more general theory of governance arises precisely from an extension of these aims, requiring other actors to be involved in the reflection process, breaking the mold of the traditional approach to corporate governance [COB 97]. However, using the company as a starting point, we may continue to work on this “additional” dimension by broadening the field of concepts and methods using an approach based essentially on a material extension of reasoning. We thus move from considering the interests of *shareholders* alone to a more inclusive consideration of the interests of *stakeholders*. The idea of a patrimonial approach to society, envisioned as a firm with the aim of satisfying the majority of minority stakeholders and integrating activities into a broader social plan, is a simple extrapolation [ORL 04]. The concepts of

neighborhood, locals or even community-based third-party entities concerned by an activity provide a convenient means of reconsidering the traditional articulation between internal and external aspects.

The situation is different in sectors with fundamentally different theoretical references, for example (and at best) a theory of public services and the management of public interest activities within the context of an administration¹⁷.

However, the crucial issue of the epistemological shift does not lie in the differences highlighted by a sociological consideration of private and public institutions concerned with the organization of research and innovation. First and foremost, it resides in the rational operation required by the shift, i.e. a change in perspective with regard to the duties and purposes of this action. This change in perspective cannot be separated from the list of tasks that must be organized and carried out; on the contrary, according to Donald Schön, this is only possible in the course of action, drawing out attention to the specific challenge of acting on an action that is currently being carried out [SCH 83]. This aspect of institutional change is clearly central to learning theories, which address the action of learning to learn, or of learning to evolve in relation to ongoing learning processes, i.e. while learning. However, the challenge of an epistemological shift in governance is not limited to the development of a reflexive perspective on what a person is involved in doing. It lies, more precisely, in the way that the systematic and continuous organization of this type of reflexivity involves a different position with regard to the organization and monitoring of actions, alongside different modes of leadership, participation and the identification of risks.

While institutions are often quick to launch new organizational approaches, using incentives to promote, for example, networking and the exchange of best practices, the way in which actors are involved, adapting their identities and action structures for this purpose, often seems to take a secondary role or to be susceptible to selective filtering of best practices via a benchmarking or co-design effect. This is not the case for an approach in terms of governance theory. Without a shift in identities and action

¹⁷ In this limited context, the fundamental elements of a renewed approach to RRI governance must clearly be found in terms of public management. The more fundamental question of governance theory applied to this sector is only touched upon through practical choices made in order to support new organizational recommendations, generally relating to the known axes of accountability, transparency, participation and output legitimacy [SCH 08, p. 103–104].

structures, organizations are doomed to a cycle of *repetition* arising from the privileged reference to representations induced by secure images resulting from an idealized self-identity.

Clearly, this level of challenge to existing practice cannot be made spontaneously without, at the very least, opening the black box of a governance supposed to adapt automatically to the constraints imposed upon it. The key issue is to explore the epistemological presupposition that accompanies those rules of action that we count on to ensure the emergence of new behaviors in ongoing practices. One might wonder whether such rules of action exist, and whether they are already known to experts. In this case, would an expression from the outside be enough to ensure incorporation and consolidation in practice, or do they still need to be created within practice itself? In this latter case, to what extent may these rules effectively modify the organization of these practices? Will they be able to prevent recuperation phenomena leading to the repetition of existing practices? If an external authority encourages the creation of rules but is not involved in their specification or in the prevention of repetitions, what guarantees will it be able to offer with regard to these rules? Will third parties concerned by behavioral modifications be permitted to contribute to, monitor, check or evaluate these processes? It will not be possible to respond to any of these questions, among others, until an epistemological shift has been made toward an approach in terms of governance theory applied to RRI.

Given the situation in other neighboring domains, also involving institutional learning connected to actors concerned with the social responsibility aspects of their practice, a third reason may also be put forward to explain the lack of an approach in terms of governance theory in RRI. On this subject, we feel that an epistemological shift may only be envisaged in a sector with a clear understanding of its own issues, while accepting that this cannot be dependent on prior mastery of the field, in which case a shift of this type would, necessarily, already have taken place. In this case, the question concerns the operation of a shift toward a “conceptualization” of a “pre-existing practice”, to use Canguilhem’s terms [CAN 88, p. 108]. If this conceptual conscience of what is at stake existed in the field of research in the social sciences, the researchers involved would make the effort required to confirm or disprove its supposed interest. Evidently, this point has not yet been attained; the key question, now, is why.

1.3. The case of neighboring fields

In order to gain a better understanding of the fundamental obstacles to a governance theory-based approach to RRI, it is useful to go beyond our first hypotheses in order to compare this state of affairs with other, similar situations.

Throughout our professional activities in terms of long-term support for research programs (5–7 years), we have observed situations in which governance questions are ignored, despite the potential to gain genuine added value from the questions resulting from this type of orientation.

Each situation presents specific characteristics, but a number of common themes may be identified with a brief overview.

We shall begin with the case of biomedical ethics in a hospital context (in France) [BOI 12, BOI 14]. Our observations were based around a university center specializing in ethical intervention and associated with a hospital. The dominant tendency in hospital management is for a mixture of delegation and broad guiding principles provided by an external and arbitrary entity, i.e. in “command and control” mode. Using a top-down mechanism, the ethics center acts as a convoking entity, attempting to set up groups of volunteers to work on different themes. The type of question considered by these groups concerns forms of leadership, participation and the transmission of the groups’ reflections to those concerned, and the institutional framework. While the initial schema is purely delegatory, this operation produces managerial benefits, insofar as care quality indicators take account of the existence of these practices within the institution. However, their continued existence, along with their short- and medium-term impact, is a subject for discussion and appears as a condition for developing participant loyalty. Similarly, questions also arise concerning the mode of convocation, the representation of professions and the decision-making structure associated with these professions, calling the true sense of recommendations into question. It thus appears that a longitudinal study of the development of these thematic groups and their impact on the quality of care in a hospital environment cannot take place without considering the issue of governing these experiences, both in terms of control and monitoring and their possible impact on decision mechanisms for which they do not, in fact, have any legal status.

Having identified this question, in fact, there is a total absence of discussion concerning the modes of governance of these practices. They are designed to adapt to the routines of reproduction of a vast Fordist management system, guaranteeing a standard quality of mass-produced results for a hospital ship. This vessel requires performance indicators in order to identify its position with relation to the mass medical market, but no link is made between ongoing ethical experiments and this need for measurement. The very idea that the question of governing hospital ethics, which experience has shown to include the responsible exercise of care, could lead to a new approach to hospital governance as a whole is simply and completely inconceivable. This inaccessibility non-relevance of the question applies as much to hospital directors as to local actors voluntarily involved in focus groups. For us, it is the *political* dimension of what takes place in terms of reflexivity and institutional participation, in a situation where exchanges may be used to increase knowledge, which is, in this case, inconceivable.

A second real-world example concerns the education sector (in Canada) [BRA 13]. In this context, the issue of home education has the capacity to present a radical challenge to the existing status of the sector, undermining the republican dominance of public institutions in the field of education. The most widespread reaction to this phenomenon – which corresponds to a fundamental right of parents, recognized by many republican constitutions – consists of criminalizing the parents and resisting these practices by all possible means of control or even, effectively, by hounding the families. The parents themselves then enter into combat mode, with a risk of demonizing the power of the State over the private sphere. This ideological standoff constitutes a clear example of a blockage to be overcome. However, before embarking on a research program alongside Sylvain Bourdon, we found no studies attempting to consider this problem in terms of governance. On the one hand, questions of governance of the sphere of education already appear to be relatively fixed, with a classic formulation in terms of goals relating to accessibility (social, geographical and ethnic), positive discrimination, social mobility, fitness to work, civic education, etc. The civics aspect might be expected to attract particular attention as a focal point of the ideological combat between the public system and home educators, as this is the area in which parents seem least able to fulfill their duties. In this case, the expression of research questions in terms of an alternative governance of home education, tackling issues of participation and identification, might already be seen as taking sides. However, this is not strictly true, as, for the

parents, this approach is perceived as a manoeuvre to force concertation and assimilation to the dominant model.

In this sector, governance-based approaches appear to be primarily limited to reproducing institutions and incapable of producing solutions using even slightly cooperative mechanisms. The debate seems to be permanently limited to a standoff between a pedagogical ideology, on the one hand, and the respect of fundamental human rights, on the other hand. The institution refuses to consider anything other than authoritarian government of recalcitrants, and home-educating parents consider that their salvation lies precisely in their right to ungovernability. Neither group seems able to justify a shift in political position.

The approach taken in this case was particularly interesting in that it made use of a local governance of group, before attempting to share this experience with institutional leaders, presenting them with the results of the approach in order to create the conditions for a “governance of governance”, supporting practices of self-management in groups of home-educating parents acting as proponents of one of many educational projects within society. The final aim is, in some sense, to permit a process by which educational expertise is recognized for the benefit of the children involved. The main difficulty of the chosen option lay in understanding the experimental potential of an approach expressed in terms of governance. Once again, no literature was available for this approach. What remains inconceivable in this case is the possibility of co-constructing the conditions for social experimentation.

Our third example brings us back to a corporate context, which, as we have seen, is more open to approaches in terms of governance, notably via the material extension of reference models. In this context (in Belgium, this time) [XHA 11, XHA 10], we were able to consider “interorganizational partnerships”. This term covers not only cooperation between private and public actors, but also between actors in civil society, such as unions or chambers of commerce, with the aim of producing solutions to market adaptation problems. In our specific case, the concern related to flexibility constraints in adapting production equipment to demand, and to job security constraints, with the aim of bringing an end to precarious employment and providing standard working contracts, following the norms applied to their sector. The issue involved framing “mixed” employment contracts resulting from the combination of part-time posts in different sectors but on

neighboring sites, something which is entirely favorable to circulation of the workforce. An individual working the night shift on a part-time basis might, for example, take a second part-time job in the afternoons in a different sector.

In this case, we see that the partners concerned are interested in taking part in the problem-solving process and in participating in experimentation. They develop cooperative working practices and agree to devote the time necessary for the project. However, these parties are not interested in taking responsibility for organizing and monitoring, refereeing or evaluating these partnerships; they prefer to delegate responsibility to a third-party institution with the required competences and recognized neutrality. In this configuration, a hypothetical academic consultancy organism would seem best placed to fulfill the required functions, situated between the corporate world and public teaching and research missions. There is therefore a risk of governance being reduced to self-observation of choices and methods whose appreciation is based on the academic beliefs of the consultant researcher.

This situation is not without its problems; the fact that actors distance themselves from questions of governance has direct repercussions on the way that the researchers observing these actors will take on the question. The literature on the subject shows something which more closely resembles guiding on the ground initiatives, monitoring results and evaluation by the authorities concerned, showing the role of a third-party facilitator in guiding the modes of participation and exchange, managing conflicts and contextualizing risks. This final case is essentially partnership engineering. What remains inconceivable here is if a governance approach is not adopted, concerns the relation to a third party, considered as a point of balance, external to the process and, moreover, capable of ensuring its future.

1.4. Lessons to be learned

Although innovative practices, such as those described above, have been used and have resulted in operational success in specific contexts, their influence on general practices in other neighboring practices is almost null. This lack of influence, identified in niche theory, also appears to apply to innovation phenomena [MAE 13]. The different blind spots that we have identified enable us to better define these initiatives, anticipate risks and

bring out their full potential; however, they do not allow the creation of a common relation to governance issues. In order for these experiences to have a more significant impact, and for the spread of innovative practices to become possible, there is a need for conversion operators with the ability to apply the characteristics of innovation processes to different specific systems and their routines [MAE 13]. However, these conversion mechanisms can only be established if a set of conditions are fulfilled, directly involving governance choices on all levels. As long as the question of governance has not been identified and treated in its own right, conversion issues may only be treated indirectly via concrete tests in different contexts; they will also be limited to these issues, prolonging the situation in which innovation is limited to those spaces where it has provisionally succeeded in taking root.

The field of research ethics appears to be typical in terms of the lack of approaches in terms of governance theory [DOU 10]. In Canada, Georges Legault, a particularly renowned author in the field, is one of the few to have attempted the shift needed toward an expression of questions in terms of governance theory [LEG 07a, LEG 07b]. His approach highlights the difficulties encountered in a scientific approach specific to an analytical sector. The effects of these difficulties are essentially felt on two levels, and this division may be used to clarify the meaning of the aforementioned epistemological shift.

The first level concerns disciplines. The question of transforming ethical responsibility of research practices is approached according to disciplinary expertise that is supposed to correspond to the desired transformation. There is thus a need to distinguish between the applied ethics of law and morality, while attempting to characterize the forms of regulation that it might impose on the social level. The question of governance only appears after the event, in relation to the implementation of a specific type of regulation. There is therefore a need for dialogism as a separate characteristic of the mode of regulatory intervention concerning applied ethics [LEG 02, p. 182].

The second level is substantial and specific to research ethics. It concerns the delimitation of modes of transformation in the course of regulatory processes in order to highlight innovative trends on the basis of actors' expectations. This type of reflection is essentially aimed at legitimization. It allows us to understand the limitations of existing normative regimes, and the reasons for competition with other regimes. This applies, for example, to the combination of deliberation and coercion, the co-construction of

solutions with their imposition, participation and submission. In identifying these tipping points, it is also possible to identify conditions in which they can be best exploited within institutional practices. These conditions include institutional willingness to consider insufficiencies in existing practices, confidence in the potential role of the group of actors concerned to overcome these insufficiencies and the choice of problem-solving processes that enable participation and allow the necessary time [LEG 02, p. 189]. In a minor and less developed mode, we may see the characteristics of the “politico-deliberative” approach proposing the shared planning of change in a regime of uncertainty [INN 03]. Moreover, the authors of this work make a distinction between the narrative requirements of planned cooperative action [BRA 92] and institutional requirements.

However, Legault *et al.* leave a degree of ambiguity concerning this doubling of requirements or the presumed conditions of success in dialogical-cooperative processes. It is hard to tell whether these are truly conditions or effects. In any case, isolated elements provide excellent descriptors in terms of effects, with an intensification of work on insufficient elements, an increase in confidence in actor resources, modification of scheduling and an increased valorization of cooperative tasks. Are these simply the necessary effects of the desired process types? If we accept the implementation of what Sabel referred to as pragmatic tools [PIO 94, COH 97], oriented toward shared investigation, problem solving, benchmarking, co-design, and trial, error and elimination, are we not producing the cognitive conditions for another relation to collective capacities, which will produce the effects described above?

The question of governance has simply not been expressed at the right level. It is not enough to note that a Fordist or other approach to governance, using, for example, a “command and control” approach, has been dominant in the past, but is now faced with increasingly operational competition. Recourse to a sociological vision of the transformation of regulatory regimes merely legitimizes, with each iteration, a new regulatory process in the social sphere. In a complementary logic, aiming for integration with other modes of governance, this new process does not challenge the existing collective relation to the production of modes of governance; it simply turns this into a hidden condition (or absent cause) of a new action schema by which the collective is able to self-regulate. The question of governance theory cannot be reduced to an observation of the possibility of changing organizational modes or paradigms, and thus to abandon an obsolete mode of governance.

The decisive aspect is the relation to the activity of producing a mode of governance, something which is hidden from view by the repetition of a dominant mode, but also by the adoption of any new mode that also guarantees its own repetition. The epistemic relation to the activity of producing a mode of governance is masked by the use of simple segmentation of dominant modes of governance.

This is highlighted brilliantly by the situation of research ethics. Hubert Doucet notes that during the 1970s and 1980s, “the United States and Canada were set apart by their desire to develop a form of ethics prioritizing the sharing and balance of responsibility between the State, funding entities and the local community” [DOU 10, p. 13]. The author cited a document published by the Canadian Council for Medical Research in 1978, and a new version published in 1987, determining guidelines for research on human subjects [DOU 10, p. 14]. Lucie Brazeau has shown that in this sector, there has been a progressive evolution toward a more individualist approach to responsibility through the creation of professional charters and a desire to establish professional frameworks [BRA 12]. One of the author’s hypotheses concerns the need to rethink the conditions for ethical reflection within practices, rather than waiting for effects to be felt from the outside, as a result of the proclamation of high-level norms [LEG 07a, p. 33] that do not take into consideration the isolation and pressure felt by practitioners under the influence of productivity constraints.

In this neighboring domain, it took a long time for a “governance paradigm” to be taken into account. This shift was proposed, for example, by Legault and Patenaude, who clearly identified the need to address issues in research ethics directly, starting with the “unresolved conflict” between modes of governance in research ethics [LEG 07a]. This resulted in a first semidescriptive/seminormative approach, consisting of reinterpreting existing practices in relation to their ideal-typical presuppositions based on the models of normativity, institutional monitoring and engagement which they use. This method presents the advantage of highlighting the gains to be made by using another approach to these presuppositions, such as an “ethical governance” of research that would be better able to take account of value conflicts involving the interdependence of the actors in question. In this case, there is an unresolved issue concerning the reasons that should be given for preferring one type of rationality to another, above and beyond the practical elements involved.

An approach in terms of governance theory should go much further than a comparison of types of rationality; it aims to identify the biases that explain, precisely, the wide variety of similar modes of rationalization that all take a number of elements as given. This includes the relation to a power of symbolization of shared actions, allowing them to give coherence to shared norms and to promote a sense of authority, justifying a shared commitment to the attainment of objectives. However, it is precisely this manner of accessing the symbolic function of a shared action and the function of norms creating authority, alongside the legitimacy of reciprocal engagements, which should first be called into question in the establishment of a rationality of shared action. The first question in terms of rationality concerns the way that it articulates things that each type construction treats as separate properties. A governance theory approach would aim to avoid this bias, starting from a pragmatic concept of rationality, which aims to promote a coherent set of organizing principles, enabling the attainment of a goal based on the capacity for action of the human actors in question¹⁸.

1.5. Changing perspective

This brief overview of the situation of approaches in terms of governance theory in neighboring fields has shown that the shortcomings observed in RRI are not isolated phenomena. The reasons put forward up to this point do not appear to be decisive in these sectors, excepting the particular difficulty of an epistemological shift. However, the case of research ethics shows that these difficulties may have their origins elsewhere, for example in the need to maintain a multidisciplinary approach to a sector, or in the necessary recourse to a sociology of institutional transformation to interpret current challenges in governance.

This final point is emblematic of the problem that we aimed to highlight in this chapter in relation to the questions of RRI governance and of an approach set out in terms of governance theory. The main reason for the lack of approaches of this type does not lie in weaknesses intrinsic to the fields and research domains in question, but rather in a weakness in the field of governance theory itself. In fact, the difficulty in assessing the precise

18 For this approach to rationality, see the propositions made by the philosopher of science Jean Ladrière in *Les enjeux de la rationalité* [LAD 77a, p. 193–194], alongside his seminal article on the meaning of structuralism [LAD 71]. See also the use of political philosophy, as justified by Boltanski and Thévenot [BOL 91, p. 26–27].

impact and in calling on analyses set out in the specific terms of this theory is primarily due to a lack of *generality* in the field. When researchers from other disciplines come into contact with this notion of governance theory and the related analytical structures, they are faced with a plurality of approaches arising from organization theory, political science, economics, sociology, law or even social philosophy. These approaches all present their own advantages, but are also subject to methodological and epistemological specificities that make them hard to compare and almost impossible to combine. Once again, these approaches are purely symptoms, and not causes, of a situation. They indicate a lack of generality that each attempts to combat through rigorous implementation of their work from their own disciplinary perspective. The problem lies precisely in the capacity of these varied approaches to reconsider the generic relationship, which underlies them all, to a sufficient extent – i.e. the relationship with the activity of producing governance in the form of reflexive rational operations, potentially in competition, and each critical of the others. This generic relationship to governance is bipartite: on the one hand, there is a relation to action; on the other hand, a relation to norms. Considering the question of governance involves consideration of the power to act, founded on one's perspective of the social domain, and consideration of the normative function assigned to this perspective, with a subsequent effect on other forms of action in the social domain. This degree of generality in investigation is currently beyond the reach of the disciplinary “kaleidoscope”, which is generally used.

The Origins of Governance Theory

The idea that it might be possible to evaluate the ideal governance potential of a system is not inherently idealistic; it depends solely on the rational stance taken with regard to the action processes implemented in a governance regime. A governance regime covers all of the ways and means used to produce collective action, bringing together the preferences of different stakeholders in a problem via a process of alignment. In a way, these may be seen as mechanisms for risk assessment, conflict resolution and the direction of participative procedures, for the purposes of decision making, the assignment of roles and the allocation of means in order to create and implement a plan.

Different approaches exist for the implementation of these collective action regimes, often classified as “top down” or “bottom up”. In the first case, the processes of coordinating actions are carried out by a hierarchical command unit, which carries out the main functions of direction and monitoring the intended objectives. In the second case, implementation of the process is dependent on secondary alliances, constructed progressively by actors on the ground, in order to increase collective power and broaden its field of interest, extending the effects of this cooperative process. These two types of approach may also be described using the terms “voluntarist” and “emergentist” [MAE 08]. The first type of mechanism uses a coordinated action to impose the framework for analysis of a program and an agenda; one example of this is the mechanism used by the Intergovernmental Panel on Climate Change to combat global warming. The second type of mechanism makes use of different forms of cooperation between interested

parties in order to define priorities and modes of action within the context of international conventions, as in the case of commitments to the protection of biodiversity.

The theorization of governance operations has allowed for the progressive creation of a better taxonomy of these processes of aggregation and engagement of stakeholders. This theorization is based on the idea that an action regime is, in its own right, a form of organization of actions, guiding their institutionalization and their potential for self-transformation. Postwar social theory made use of a decisive contribution concerning these organizational questions from the Carnegie School [GAV 07] and more specifically from Herbert Simon [DEM 04]. Within this framework, the idea of “limited rationality” was specified in connection with organization theories allowing for the consideration of suboptimal mechanisms for the revision of change processes; their projections included possible deviations in relation to standard theories of optimization. In a seminal 1996 publication on governance theory, Williamson began by noting the role played by Simon [WIL 96]. According to the author, the decisive aspect lay not in Simon’s concepts, but more radically in his aim to produce a model capable of understanding administrative organization as an operating whole, and thus as an *action structure*, with operations, goals, decision-making capacities, a hierarchy of strategic levels and the ability to separate aims in order to permit a variety of degrees of satisfaction in the place of a monolithic ideal of success [WIL 96, p. 36–37]. With Simon, the economy of organizations was able to break free from hypotheses of perfect rationality and to include the possibility of incomplete action regimes, leading to the incorporation of revision processes, along with the ability to take account of *ex post* forms of rationalization, the anticipation of conditions of dependence and the contractualization of partial engagements linked to the realization of subsidiary objectives [WIL 96, p. 45–47].

The simple fact of attempting to refer to a *unit of action* and reconstruct institutional transformation processes on this basis already formed, for Williamson, the starting point for a new approach to economic behavior. Subsequent attempts to orient this unit of action in the ways described by Commons [COM 50] or MacNeil [MAC 80], separating it from microanalytical decision centers in order to identify direction structures capable of imposing and following plans or procedural standards are, finally, of lesser importance. The fundamental element here is the consideration of

an entity with the capacity to act on the uncertain dimensions of its behavior in order to reduce the effects of uncertainty by regulating its organization. With Simon, organization theory in a corporate context took on a “structure of governance” [WIL 96, p. 50], wherein the rational performances are dependent on the capacity to produce organizational functions with the capacity to anticipate or compensate for costs resulting from a lack of efficiency in implemented actions.

This idea of action conceived as a whole in the manner of a *structure of governance* operating in a regime of imperfect rationality is, according to Williamson, fundamental in guiding the search for more suitable legal solutions, notably implying a revision of contract theory. However, it also creates a research agenda for the economy of organizations, insofar as new methods are needed to systematically account for interactions between market constraints and the hierarchical constraints of organizations, or between the strategic consistency of the organization and the efficiency criteria of the market. It is already clear that new analytical tools will be required, such as those provided by the comparative approaches of benchmarking and co-design, but also those relating to sociological theories of change, which help identify the conditions for implementing this type of hypothesis concerning the alignment of institutional performance in accordance with governance capacities (reduction of transaction costs).

The development of these tools may have appeared to be of secondary importance, but would end up playing a decisive role in the neo-institutionalist development of governance theory. In fact, past the entry into a regime of imperfect rationality, beyond the choice of a unit of action able to organize organizational functions to contextual constraints, and beyond the priority given to contractual tools in these transactions with the context, the fundamental question in this new approach to the firm as a government structure concerns the process of implementation itself. It is not enough to consider the firm as an instrument of adaptation; we must also create the conditions to allow a traditional approach to break away from its own blind spots. In cases where the market operates with strong incentive processes, in an ultraliberal context, the productive organization of a company will require a weak incentive structure with strong internal controls. This asymmetry of constraints needs to take shape in the form of contractual mechanisms, which may be revised *ex post* and in a selective manner. To implement this vision, however, we need to step outside the

classic image of the firm as the simple ideal result of the will of an agent, maximizing the realization of their strategies, in order to consider it as an autonomous action structure forming a point of balance between asymmetric and conflicting requirements originating in different spheres of action (markets, State, environment, work, finance, etc.). It is not enough to consider this point of balance as a type of node created by contractual operations. Going beyond contractual interdependence, the means of *learning* to relate, collectively, to this node of action is fundamental, notably for those who might, in this context, be able to profit from the asymmetry of information within the firm¹. A new understanding of the firm is required. What Williamson calls the “centrality of the contractual process” [WIL 96]¹, does not happen spontaneously of its own accord².

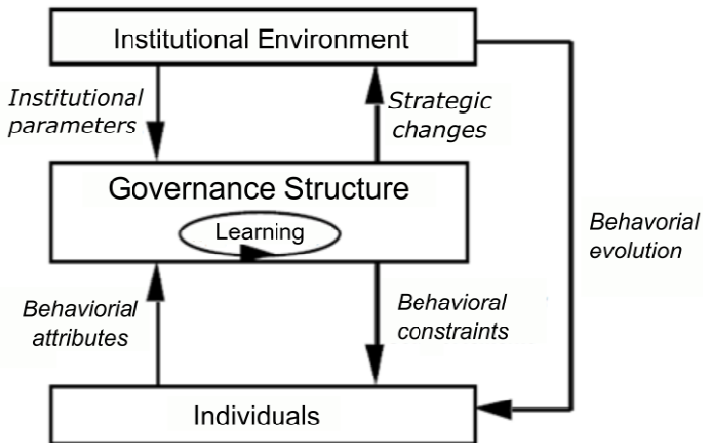


Figure 2.1. *The new institutional economy according to Williamson*

The capacity for change in institutions themselves is therefore essential to the implementation of Williamson’s program. Whatever the interest of developing a concept of the firm as a “contractual node” or collective action structure, organizational culture cannot be modified by a mental shift in the

¹ This is particularly true for management [WIL 96, p. 179].

² Figure adapted from [BRO 99].

rule of action alone, for example moving from an approach centered on a form of individual agent to another centered on transactions between different constituent parts of company activities. A more fundamental epistemic variable needs to be taken into account in order for a change of this type to be possible; otherwise, as several analysts have noted [SCO 02], it will always be possible to continue recycling existing approaches, simply adapting them to current circumstances³.

We must therefore avoid situations in which the question of institutional change is not treated in its own right, as if, in identifying the need for hypotheses of imperfect rationality, we still continued to consider change through the lens of an agency theory, as a question of *ex ante* alignment. The potential risks of this type of position were identified by North [NOR 05]. For North, the adoption of a new approach to the firm and the implementation of new governance mechanisms clearly depends on the possible evolution of the beliefs of individuals, and their capacity to reevaluate and redirect these beliefs; however, it depends still more on the way in which institutions address this major evolutive factor and organize themselves accordingly [NOR 05, p. 72–73]. What sort of institutional environment might be favorable to creation? How can we integrate different knowledge acquisition systems while reducing the costs of interaction between these systems, maintaining a balance between relevance and variety, while retaining the option of testing new approaches? North's question, in fact, concerns the modalities of organizational learning. A framework capable of managing the capacities for change is one which is able to learn from the situations in which it operates and from the difficulties it encounters. This framework must be able to produce evolutive knowledge of its own action, which can be accumulated and grow increasingly complex [NOR 05, p. 73].

This focus on learning is a key element in the development of new approaches to governance and their extension beyond the corporate domain into the field of public policy and administrative management.

3 For example, limiting the rigid aspect of centralized and uniform decisions via maximum modeling of implementation procedures using quality circles or the establishment of communities of practice.

2.1. Old and new governance: a first shift

While many researchers have attempted to define the new elements involved in approaches constructed in terms of governance, the epistemological aspect has often been overlooked. From a descriptive perspective, the observed practices contained certain ambiguities, notably in the field of public policy. While it may seem easy, in observational terms, to differentiate between routine behavior in a Fordist-type company and experimental behavior in a company using innovative managerial dynamics, this type of distinction is much harder to obtain in the case of bureaucratic institutions stemming from a centralized parliamentary nation State. Description quickly comes up against the effects of political rhetoric and the strategic appropriation that may occur following any attempt to open the field. There is thus a major risk of confusing attempts at deep-seated redirection and adaptation of government practices in line with current fashions. In this case, we note an alternation of hard and soft law, the prevalence of consultation procedures, an increase in comitology and framework programs leaving more room for negotiation and the implementation of objectives. These practices may appear to be simply a new form taken by methods that are, in fact, compatible with the extension of bureaucratic practices, including their tendency to sectorialize. Interest groups acting on different levels of the decision process seem to have most to gain from this strategic redressing, which reinforces their influence; these groups also contribute to legitimizing the position of the level of power by which they are brought into play.

However, as Scott and Trubeck [SCO 02] noted as early as 2002, these descriptions are too short, in that they still focus exclusively on adapting, rather than challenging, existing power mechanisms. They ignore the point of imbalance targeted by these new institutional processes, which seem, for now, to produce effects on rhetoric and strategy alone.

The key question concerns whether or not the opportunistic reaction of existing interest groups is sufficient to explain the orientation chosen by public institutions in modifying their relationship with their context of action. In seeking new partners to implement objective-based management, and thus, redefining the conditions of participation in public policy, the institutions in question are not simply redressing an approach already known to interest groups. The challenge entails involving new actors, breaking down barriers between levels in the decision process, involving the indirect

beneficiaries of public actions, and thus broadening the social dialog, sharing power across a basis with different parameters.

This process does not simply consist of using mobilization in order to optimize chances of success. It is, more precisely, a form of social experimentation, including the production of knowledge and collective deliberation with regard to the means used to obtain new results. At first glance, these new procedures may seem vulnerable to opportunistic calculations by existing groups; this is essentially due to the fact that they are designed to be flexible and open to modification as a function of the collective experimentation, which they are designed to promote. Just as a different contractual culture underpins Williamson's notion of a company change, a different culture of rule use directs the transformation of public institutions in a regime of new governance. However, unlike in Williamson's ideas, and following North, the fundamental aspect in this process of change is its capacity to include mechanisms to shake up existing routines in order to support behavioral changes during the course of action⁴.

As Eberlein notes [EBE 04], we must go further still in the way of determining the change process operating in new governance mechanisms. These mechanisms possess specific characteristics, such as revisability and flexibility, and prioritize the extension of partnerships to include new actors, integrating different levels of power. They focus on deliberation and knowledge exchange in order to reduce informational asymmetry and promote the emergence of new hypotheses. Furthermore, these mechanisms are integrated into a decentralized control system, constituting an intermediate level of learning between formal decision units, on the one hand, and microlevel units in contact with the specific interests of each of the groups concerned.

However, this mode of operation could be limited to a new way of aggregating different interests faced with a shared problematic situation. In this case, the focus would be on improving the decision process in a context of interdependency between multiple actors with differing interests, as in the form of institutionalism defended by Scharpf [SCH 97]. Another possible form of interpretation would be to focus on the benefits one might hope to

⁴ We, thus, make a clear move away from a definition of learning as recording, which consists of favoring modes whereby behaviors become routine via repetition and accumulation (the idea of adaptation by selection).

draw from deliberative procedures in the reformulation of debates, rather than on the actors themselves. In one case, there is a focus on diversifying decision “nodes” in order to produce agreements between players; in the other case, coordination procedures are used to allow differing positions to come together in order to increase their capacity for legitimization. These interpretative options, limited to aggregation and coordination effects, fail to consider the cause of these effects, i.e. the inclusion of a destabilizing mechanism that enables new learning. Moving beyond the pursuit of shared objectives through the use of flexible and revisable frameworks, using iterative forms of partnership within an extended partnership framework, new governance is, first and foremost, the background for multilevel and multiactor learning, oriented toward performance, and not equilibrium, requirements. It involves creating the conditions necessary to overcome obstacles through cooperation and the acquisition of new knowledge, escaping from solutions imposed by the pathway constraints specific to different actors. In a way, we move from an adaptive rationality to an innovative or creative rationality, embedded in the action structure of the institution [LEE 03].

	Old governance	New governance
Effects	Hard regulation Centralized decision unit Shared framework Comitology Consultation Autonomous regulator Hierarchical order Rule-based management	Soft regulation Polycentrism Iterative process Partnerships Deliberation Shared problem solving Coordinated diversity Objective-based management
Causes	Aim to create routines Adaptation by selection in relation to situation constraints Repetitive and cumulative knowledge Supervision structure	Aim to “break” routines Production of new behaviors, promoting the convergence of objectives Evolutive and innovative knowledge Experimental structure

Table 2.1. *Old versus new governance*

Taken to its fullest extent, an analysis in terms of old and new governance provides a clearer definition of the specific roles of learning mechanisms in the shift, which new approaches to governance aim to produce, with the explicit condition of moving beyond the descriptive stage

in order to identify causes, going, as Williamson indicated, as far as the *action structure* itself, formed by the institution put into practice as a learning collective.

This approach is also interesting in that it retrospectively indicates which notions of institutional evolution have been called into question by the use of new approaches to governance and the role of institutional learning therein. New governance precludes a conception of institutional evolution reduced to the properties of adaptive rationality, which prioritizes routine efficiency and consists of selecting behavioral properties to repeat and accumulate in order to guarantee, *ex ante*, a sufficient margin of success. Following from North [NOR 90], a different notion of learning is promoted, in which the function of models is integrated into a broader dynamic, including the possibility of deviations and breaks via the use of non-typical references. The idea of a first, repetitive loop is considered to be useful but insufficient, leading to the creation of a second loop in which the basic hypotheses underpinning repetition are called into question. In this case, we no longer select elements from known behavioral properties; instead, we must envisage other types of behaviors and compare the possible results. The capacity to identify and multiply successful behaviors is thus key to the success of an experimental support structure.

The central role of the question of learning is thus evident. This includes not only a new way of relating to the function of institutional learning, but also a new form of institutional engagement in order to produce the necessary conditions. The institution itself is called into question in terms of its position as a stable entity within participation and collective problem-solving procedures. The table given above, based on the notions of old and new governance, is still insufficient to understand the full stakes involved, insofar as it does not fully display the essential elements of the question. While it highlights a shift, and, up to a point, indicates the reasons for this shift, the moment at which the shift occurs is not analyzed in its own right; it leaves aside changes in institutional behavior and the *modification of the culture of learning*. A number of researchers, such as Scott and Trubeck, have observed this shortcoming and have attempted to provide a context-based interpretation. However, this is simply another means of discussing the shift without fully defining the problem.

Scott and Trubeck note the complexity and uncertainty of the socioeconomic context, the effects of irreducible diversity of preferences and

an administrative structure in crisis [SCO 02]. The interest of their hypothesis lies less in the content of the external reasons that they put forward to explain a change in institutional stance than in the spontaneous operation that they undertake. They consider that by creating a representation of the context of action, it becomes possible to attempt to explain the process of change in institutional governance. Accepting this operation, we might consider that a specific form of learning loop is required in order to explain and support the shift toward new governance. The balance between repetitive stability and the power of deviation can only be brought into question through a specific operation, which requires a better understanding of the fictional relationship between old and new, without prior judgments in favor of either adaptation and continuity or innovation and discontinuity. This question is related to the field of action theory, rather than the philosophy of history. The problem is not to be found on the plane of representing transitions, which can be sudden and violent or gradual and progressive, but rather on the plane of explaining what causes them, and the ways in which it is possible to support the emergence of new forms of learning.

2.2. The neo-institutionalist hypothesis

The first version of change in the context of action theory comes from the neo-institutionalist school. According to Williamson and North, French researcher Eric Brousseau imagined multiple ways of approaching a response to this question [BRO 99]. Brousseau notably worked on different models of institutional transformation of modes of public regulation from coregulation to forumization [BRO 01, BRO 10]. With regard to our question, this work is interesting in that it continually directs attention to a way of representing institutional change that involves pairing this change with the context of action.

According to Brousseau, while neo-institutionalist theories do identify a form of retroactive loop between the institutional environment and the choice of governance structures within an institution, they presuppose the existence of a dynamic framework that is never fully analyzed. In fact, the choices made do not simply constitute an adaptation to a static reality, but are integrated by the operators themselves into their calculations and predictions of future conditions of coordination. These choices, therefore, have a destabilizing effect on the institutional environment itself. This

dynamic aspect, left aside in neo-institutionalist approaches, is at the heart of evolutionist theories. The idea of a selection process allows us to understand the way in which behavioral properties may be promoted, accumulated and multiplied, so as to modify the rules of coordination between individuals and their institutional structure. This process occurs via specific work on skill-based resources (sorting, storage, valorization)⁵, away from immediate market pressure and dependent on the cooperative capacities of individuals. For evolutionists, the dynamic nature of a selection process lies in the fact that the presumed retroaction between coordination choices and the institutional environment is simply an effect of another plane of retroaction, connecting the decision rules followed by agents to the institutional process of directing these decisions. The role of the institutional process is to validate and record the operations carried out by agents, while limiting these operations in two directions: retrospectively, the open possibilities constitute a finite set of discrete choices; prospectively, options chosen for the future should minimize the costs of adaptation to a context in constant evolution with regard to technology.

Combining institutionalist and evolutionist hypotheses in this way, we obtain an approach to institutional learning that is better able to combine its dynamic nature with the feedback effects of governance choices on an institutional environment. We obtain a double cycle of retroaction, allowing more precise identification of the characteristics of an organizational learning structure in its relationships with individuals, themselves considered directly as agents of this learning.

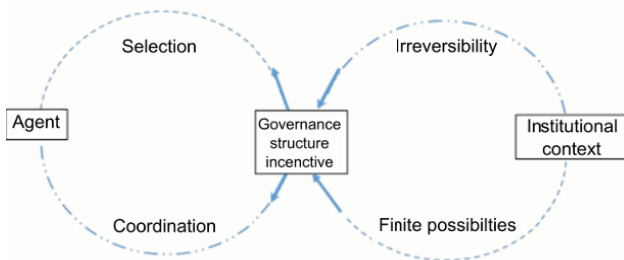


Figure 2.2. *Double retroaction cycle of neo-institutionalist governance*

⁵ Or on the management/circulation of information concerning working conditions and the sharing of available material resources.

The function of a learning collective, in this perspective, consists of directing a selection process and taking responsibility for action in relation to the frequency of behaviors and the translation of collective limitations to change onto the individual plane. This includes the limitation of possible choices (recourse to discrete choices) and the anticipation of the cost of future adaptation (context-linked technical irreversibilities). The evolution of the institution is thus the result of choices made away from direct market constraints and from actors' intrinsic motivation to innovate. Context dependency is thus limited by an institutional operator, acting in an incentive-based manner on the selection resources of agents in order to increase its capacity to adapt to an environment. In this incentivist approach, the central question of learning concerns the informational and cognitive properties [BRO 99, p. 207–208], which a governance structure may use to promote increases in agent skills.

Douglass North provided what is undisputedly the most extensive approach to this neo-institutionalist notion of learning [NOR 90]. His idea was that this notion itself results from a process of change in belief systems, which has taken place over millennia. The concepts of wellbeing and performance have been internalized in a very slow and gradual manner by human collectives. For millennia, these groups simply accepted that the primary cause for success lay in the opportunities presented by natural luck and the capacity of small cooperative entities to seize these opportunities, transforming them into collective benefits. The experience of the effects produced by long-distance trade cycles, modifying the perception of natural constraints [NOR 90, p. 119], and a developing awareness of the role of the human environment in turning these effects into collective benefits in the best way possible [NOR 90, p. 76], finally planted the seeds of a form of internalization of the rules of success. The means of collective organization used to guarantee and reinforce a system of impersonal exchanges, thus took the place of small solidarity structures in facing the uncertainties inherent in the physical environment. As this shift occurred, institutions began to take on a new role, not only in stabilizing exchange processes on the basis of formal rules of operation independent of the context of use, but also in reinforcing the confidence of actors in the capacity of these rules to reduce the uncertainty relating from the diversity of contexts of use.

Once again, we encounter the idea of a double cycle of retroaction: that of the institution on its environment and that of the institution on actor beliefs. The interest of highlighting this process lies in clearly defining the

dominant role of the institutional action structure in a context of change within human societies. Due to its flexibility, the institution allows for the combination of action rules resulting from the rational expectations of actors with constraints resulting from political choices made in relation to a state of the market on the basis of an analysis of a complex and unstable set of factors (from demographic effects to the anticipation of political majorities). For this reason, in this perspective, we may speak of the institution as an internalization vector. The decision structure and strategic responsiveness of the institution allow it to act as an interface between the rational choices of associated individuals and the bifurcations of a complex market environment, in which the long-term effects of institutional cohesion are crucial. Through the institution, the conditions of mastering change are modified. We are no longer concerned with guaranteeing short-term adequation between targets and results, as in a regime of natural solidarity faced with the hazards of the physical environments. We need to enable accumulations on a second level, not affected by immediate previsional calculations, able to derive benefit from the effects of retroaction between the institution, environment and actors. The institution thus becomes the milieu in which rules of action are produced, with the purpose of capturing the results of involuntary assemblies produced by the social and political environment, and thus acquiring new cognitive resources in terms of a capacity to amass seemingly heterogeneous options.

The whole process described by North is particularly rich in terms of institutional structure, directed by the fundamental rule of reducing transaction costs in a dual process of retroaction. The institutional structure may be able to internalize the function of mastering change on two conditions: (1) a shift in expectations of results in terms of cohesion effects and (2) a modification of the representation of externalities: second-level results thus produce benefits in terms of cognitive capacities, and these results may be the product of an aggregation of economic choices with independent constraints. On this basis, the theory of incomplete contracts, as defended by Williamson, takes on its full meaning.

How, then, is learning treated using the neo-institutionalist approach? The internalization of the contractualization rule as a function for reducing uncertainty produced both by external market factors and actor beliefs concerning the short term is sufficient to define this idea. Essentially, actors are encouraged to revise their beliefs and to realign their preferences according to the expected effects of institutional mastery of change.

However, this central notion of learning in neo-institutionalism seems to be limited, not so much by an assumption of transforming the intrinsic motivations of actors in reviewing their beliefs, which is not examined as such, but rather in the way that the role of the institutional structure is defined in this procedure of revision and realignment. It remains, implicitly, in a *position of external direction*, as if the modification of rules alone were sufficient to incorporate a change in orientation.

2.3. The nodal governance approach

In a neo-institutionalist regime, the governance of social change is based on a rule of belief revision, applied from the outside, via a broader form of contract theory. Representing the institution as a contractual node in constant quest of balance allows us to move beyond simple calculations of interest optimization, taken as given, to promote different regimes of adjustment according to the appropriate economic components. In each regime, the decision revision process should be guided by an evaluation of the acceptable degree of contractual uncertainty according to the flexibility required from the context of exchange [WIL 96, p. 180], particularly with regard to informational asymmetry. Following this approach, the decisive element lies in the representation of the governance structure, seen as an action structure enabling constant revision of the balance between the institution and its context of operation. Each technical tool used by the institution in exchanges with the context is, in fact, a structure of this type, and needs to be evaluated in terms of the priority accorded to either the internal cohesive movement of the institution (at the risk of reducing flexibility) or its external adaptative movement (at risk of reducing organizational performance).

This representation of change broadly corresponds to that developed in classic organizational theories, being a mental sequence of the representational type, or a frame, ensuring the adaptation of behaviors according to their situation of application. In the case of neo-institutionalism, considering a financial tool as a transactional structure enabling a revisable balance to be created with a member of the institution is one way of producing a frame for the adaptation of behavior, enabling dynamic coupling between the institution and this segment of its activity. The strength of couplings of this type also lies in the production of new information,

increasing transparency with regard to the organizational costs resulting from these balances.

However, governance theory has evolved toward a less externalist approach to change, notably with the work of Drahos and Shearing [BUR 05]. Neo-institutionalists presume that the actors in question possess the necessary resources to adapt their representations and to act accordingly in complex environments, characterized by both the instability of these environments and by the imperfect state of information. Drahos and Shearing specifically considered the way in which actors engaged in complex systems may mobilize knowledge and abilities in order to intervene in the course of events. They, thus, take a more internalist stance with regard to the conditions of change. It is not enough to provide the agents in question with a rule for representing the action structure in order to create change. In addition, these agents must be in a position to mobilize this knowledge and to find the resources required in order to influence the course of events. Nodal governance attempts to define the conditions needed for identifying these points of convergence between available opportunities and agents' capacities to act. For neo-institutionalists, the representation of the contractual nexus as an action structure is key; in nodal governance, this place is taken by the notion of insertion into the action structure, since it internally reinforces the capabilities of agents acting in complex environments.

The new element introduced by this theoretical approach therefore lies in its endogenous perspective with regard to social change. Its supporters attempt to avoid hypotheses based on separation of the environment and the action in order to consider a cyclical process of reciprocal influence, concentrating on the fact of integration into a whole, producing different results. In this case, the focus is shifted away from a representation of interactions between a company and its environment, and onto understanding how we may derive maximum benefit from insertion into a complex whole, which transforms the nature of its environment as well as that of its action. The key issue then becomes one of identifying ways of increasing the capacity for intervention in this whole, according to insertion modalities for the continuous process of result production. In this case, one might consider any process that aims to increase the capacity for mobilization of knowledge and aptitudes, in order to gain the greatest possible benefit from the results produced by a system, to represent good governance. However, this affirmation requires the addition of an underlying endogenous perspective. In fact, good governance is only possible if it is

integrated into the precise points of the system where the increase in results is produced, the point of convergence of different levels of information, coordination and engagement.

The action that allows us to benefit from spontaneous concentrations of events that modify ways of thinking, influential capacities and the quantity of resources available for an action is thus endogenous to the network nodes of a result-producing system. The background hypothesis that guides this approach is that complex systems inevitably produce points of contact and intensification of interactions. These include, primarily, all points of institutional aggregation intended to regulate and maintain relationships, for example a company, an association or a State. This is followed by a group of second-level aggregations, i.e. groups of companies, States and associations. Finally, a third level of aggregations attempt to reinforce or correct second-order aggregates, whether via critical experiences linked to systematic dysfunctions or in the form of voluntary aggregations intended to anticipate new problems. These meeting points may appear via the creation of meta-levels (transnational institutions and conventions) or through the construction of “subpolicies”, intended to reduce the distance from practical realities (e.g. territorial decentralization of healthcare provision). In all cases, the challenge for nodal governance lies in its capacity for insertion into this nodular system, and to benefit from its properties so as to direct resources, aggregated by network effects, toward other aggregates, effectively adapting action to the nodular strength of networks.

The economy of transaction costs involves acting on the corporation by modifying its theoretical representation and using the idea of a contractual node, which is multiadaptable and revisable in terms of components. Nodal governance involves inserting aspects into a network dynamic specific to complex systems in order to benefit from the effects of aggregation and connection associated with this approach. This may be seen as a naturalization of the neo-institutionalist nexus: the function is produced by adaptation to environmental characteristics.

A nodular law must therefore be followed, and this is not without risks if the characteristics and constraints involved are not fully mastered. This law operates in opposition to coordinated and centralized actions; it favors invasive and discrete processes based on frequent fluctuations and reorganizations, disseminating resources and knowledge. It, thus, acts by dissemination using incomplete and revisable structures and with unstable

aggregates. The advantage of this type of dynamic is that it can easily be appropriated in a provisional manner at a local level. On the other hand, however, its appropriateness depends on its accessibility, raising questions with regard to its capacity to prevent opportunistic profiteering.

By multiplying discrete interventions across a wide spread of nodal points, it is possible to obtain aggregation effects that promote an orientation of preferences. These effects may be further reinforced by creating new nodal points in order to partly connect the disseminated results. Thus, it becomes possible to increase influence in a complex environment while making savings in terms of the costs associated with coalition strategies. Moreover, nodular dynamics offer the advantage of being easily able to aggregate local resources, adapting to their specific context, in order to transform them into an intervention structure and allocate the necessary resources to give them legitimacy in the complex environment.

Using the resources of nodular governance action based on strategic improvisation and adaptation rather than systematic planning, the line separating opportunist profiteering and the promotion of shared interests depends on a *criterion of attention in relation to the possibility of appropriating the nodular dynamic*. Drahos recommends testing the relevant network nodes for representativeness, accessibility and deliberation. This critical test would allow for the orientation and legitimation of the knowledge, capacities and resources concentrated by network nodes in relation to a policy of public interest. This function could, moreover, be conferred on specific nodes, such as public agencies responsible for tests of this type, in order to maintain the nodular dynamic.

These efforts to prevent opportunistic use of the nodular dynamics found in complex systems highlight a limitation inherent to the endogenous perspective found in nodal governance. By adapting to variable preferences and their spontaneous aggregations, including in regulation processes, this perspective aims to identify a means of establishing a certain distance in relation to the aggregative dynamic that it claims to adopt wholesale. In fact, the nodal governance approach is led to extrapolate the use of its proposed dynamics in order to guarantee a balance of interests, accessibility for all and the capacity to hold up a point of view according to its rational value.

This extrapolation can only remain within the governance action if it, itself, forms part of the nodular dynamic. This is the reason why a test or

reflexive loop formulation is used to provide feedback on a node with regard to general criteria for governance of the public interest: legitimacy, representation and accessibility. The purpose of this test is to enable monitoring of the procedural quality of established mechanisms. The process operates as a reflexive loop, providing feedback on the course of events on the basis of more general axiological requirements concerning the mobilization of the capacities and knowledge of participants. By focusing attention on the interest of all stakeholders, procedural control ensures better handling of local obstacles to accessibility and participation. It also presents benefits for conflict resolution mechanisms, confidence in local problem-solving capacities and, consequently, enhanced subsidiarity.

The fundamental issue for monitoring is to ensure that local gains are able to stabilize and expand via the nodular model of assembly and dissemination. In reality, the main challenge for local experiences concerns connection to other levels of aggregation, in parallel networks using other resources and other types of knowledge. According to Drahos and Shearing, in this case, the heart of the matter lies in encouraging stakeholders' capacity for self-development, rather than in the formatting of complex systems via high-performance engineering. However, this endogenous strategy requires a particular form of nodular vigilance based on a form of "normative agenda", including three key questions [BUR 05, p. 55]. Who has access to the network's nodes? How can a better distribution of nodes be promoted? And how can the demands of democratic arbitration be met in a way that avoids reproducing inequalities and maintaining dominant interests?

In an ideal world, this normative agenda corresponds relatively closely to an idea of "agonistic pluralism", fueled by the increasing power of network nodes. However, it also seems that this increase in power will not inevitably occur on its own without some form of protection, regulation and support, from internal and/or external sources, to avoid opportunistic profiteering and the use of this concentration of power to promote specific objectives. The authors were able to partially identify these risks, but more in terms of identifying fragile points at which these breaks may occur than in terms of identifying solutions. As such, we will speak in this case of *weak internal reflexivity*. Nodal governance promotes a better understanding of the way behavioral changes occur in a complex collective action environment, but it does not clearly define the way that these changes can become

self-supporting, in the course of their production, without the use of an external overarching regulatory ideal based on issues of social optimality. The endogenous dimension of the approach remains limited to the means of applying and implementing general norms for the reduction of social inequalities, according to the nodular dissemination dynamic. However, the endogenous application of vigilance, and consequently responsibility with regard to the nodular dynamic, lies solely in a process of opposition to, or prevention of, practices that would reduce or contradict general norms, which might limit the accessibility of the process, arbitrarily concentrate power in certain nodes, or marginalize considerations of the public interest.

Finally, the only positive indication provided in support of nodal governance's self-regulation lies in the power of local resistance created by nodal governance, which enables the creation of new coalitions, capable of counteracting opportunistic practices at reduced cost [BUR 05, p. 57]. However, this support remains problematic in that nodal governance is only able to combat one form of opportunism with another, continuing to act in a negative optic via a resistance mechanism. It thus limits the guarantees of openness offered by nodular dynamics to a coalition strategy, undermining the original vision of a means of moving beyond the classic hierarchical processes of power construction.

Nodal governance, thus, provides a new way of envisaging the governance of social change, but it comes up against problems with regard to the implementation of reflexivity, intended to guarantee the dynamic identified in this way from the inside. However, the main benefit of nodal governance lies in appreciating the necessity of an endogenous view of change and in identifying, from this perspective, the role of a monitoring operation to ensure vigilance with regard to the process on the basis of the process itself and during its implementation.

2.4. The move toward democratic experimentalism

Researchers making use of pragmatism have provided another approach to the governance of social change, which is able to overcome the challenges faced by nodal governance. The benefits of pragmatism lie in the vision of social enquiry as a means of collective problem solving [SAB 12]. In this case, we speak of an experimental approach in reference to shared work on

the conditions of action, during the execution of the action itself. We no longer apply a form of vigilance dictated by overarching values at a higher level than the interests involved in a problematic situation and based on resisting opportunistic exploitation of the problem-solving process. The experimental aspect lies in the combination of multiple solution attempts within a critical testing framework, following a set of pragmatic mechanisms. These mechanisms are pragmatic insofar as they run alongside actions in order to analyze both beliefs and expectations and their expression in the form of mobilized capacities and operational rules. The mechanisms in question allow actions to be sorted through comparison with other actions, carried out simultaneously, aimed at solving the same problem: it becomes possible to compare results, designs, and efficiency in terms of adaptation through self-correction [DOR 98, p. 286–287], as well as capacities for simultaneous engineering and for error detection, information sharing and collaborative evaluations (including those able to accept independent approaches).

This process of self-experimentation in seeking solutions is founded on decentralization, polyarchy and deliberativism. It results in a form of reflexivity, which is more operational than that envisaged by nodal governance. Monitoring is no longer based on reference to external and generic values, but rather on the *construction of a learning pathway*, which consists of cross-referencing a range of simultaneous actions within a framework of information sharing and reciprocal evaluation, with an incidental increase in the responsiveness of the implemented process. Following this experimental perspective, we do not simply strengthen collaborative capacities using mutual enrichment mechanisms, playing on the exchange of information and sharing best practices. The advantages of shared cooperative actions may well be defined in terms of pragmatic presuppositions for the actors involved (sincerity, transparency, integrity and authenticity) and in terms of institutional monitoring for organizations [INN 10, p. 35]. However, the scope of experimentalism goes beyond the advantages conferred by deliberative developments concerning the procedural quality of mechanisms. The primary concern of experimentalism lies in the capacity for self-guaranteeing provided by pragmatic collective action mechanisms. Experimentalism is set apart by its *reflexive* power: its inherent organizational mode reduces the uncertainty associated with the opportunistic exploitation of mechanisms. Traditionally, vertical integration is presented as the safest mode of response to uncertainty generated by collaborative procedures; experimentalism offers another approach via the

use of pragmatic cooperation mechanisms. These mechanisms reduce the uncertainty of collaborative approaches by acting on the alignment of interests [DOR 98, p. 447] in collaborative action units, mobilized with regard to concerted problem-solving objectives.

The different pragmatic points all involve the organization of a new sharing of resources, information and knowledge, disconnecting the required actions from routine processes: the action unit defines its own operating mode, objectives and means according to the problems to solve. The action structure that characterizes an institution is no longer the contract, nor a node for the acquisition and distribution of power, but rather a collaborative entity, a team defined by a shared commitment to measurable objectives with the potential to modify all of the institution's processes. The team forms a deliberative node that allows for an increase in shared understanding of objectives, mutual evaluation of the contributions of each participant and their reliability, a reduction in informational bias through increased transparency and the traceability of exchanges, and a constant challenge to interpretative habits, the main source of error repetition [DOR 98, p. 469]. The intensification of interactions between cognitive resources and different skill sets, in a perspective of self-monitoring of mutual collaboration capacities, increases not only the number of possibilities to explore, but also the quality of the selection process used to identify the best options. This form of mutualism (an action beneficial to all parties involved) creates long-term shared responsibility with regard to the production of results.

The alignment of preferences is a result of this shared responsibility in team-based exploration of possible actions. The rules of engagement adopted by actors in the experimentalist process lead them to anticipate the individual costs of participation as part of the expected shared benefits. These experimentalist behaviors, therefore, promote a situation, comparable to a Nash equilibrium, that incites individuals to continue to participate [BOW 09, p. 60] and align their beliefs in such a way as to stabilize the activities in question.

While the *reduction of informational asymmetry* is at the heart of this process, its capacity for self-protection against opportunism is not limited to this characteristic. It also arises from its intrinsic *revisability*, which is the result of a provisional starting point, efforts to detect impasses and blockages in the creative process, constant attention to self-evaluation and monitoring, and the enlargement of the field of possibilities, correlated with a rapid

selection of the most advantageous options. However, while the pooling of methodological gains and error detections allows for a rapid accumulation of the advantages associated with the multiplication of experimental pathways, a third factor is also involved in limiting opportunism. Information sharing and the discussion of results do not only guarantee rapid accumulation of scattered advantages, they also elicit translation efforts in order to bridge isolated forms of expertise. This process reduces the areas of ignorance associated with the borders between the various disciplines involved and, simultaneously, drastically reduces the interest in exploiting these areas to gain influence [DOR 98, p. 472]. The role of translation in reducing the risk of opportunism is not limited to the instrumentalization of zones of ignorance between different disciplines; it is also apparent in the “de-specification” of technical resources, which may then applied in non-standard sectors, according to the shared problems to solve.

The permanent exchange of information, continual evaluation of results and transferability of learning constitute an advantage in the search for solutions, and allow us to imagine partnerships across a much broader basis than that of immediate profitability. A partner may be able to strengthen collective learning capacities in a shared search for solutions [DOR 98, p. 475] by creating new possibilities for experimentation. At the same time, the risks of having to work with incompetent or unreliable partners are limited by the controllability of the process, based on permanent comparison of information and results, guaranteeing rapid readjustment in a very short sequence of creative steps.

The mutualism directing the process, its controllability and the opportunities it creates to build participants’ interdisciplinary translation skills also constitute incentives to support the collaborative mechanism rather than taking the risk of renegotiating responsibilities and gains [DOR 98, p. 473]. All participants have the permanent possibility to evaluate the differences between the real and expected performance of current projects in order to revise their level of commitment with regard to the next stage, without undermining the collaborative process as a whole, due to the supplementary elements added by the continuous exchange of information, result-sharing and the transferability of learning. The calculation of interest thus takes into account the added value of collaborative practices and the additional short-term costs resulting from the increase in possibilities for experimentation.

The specific form of reflexivity put forward by democratic experimentalism and the way it promotes public interest governance remains to be seen. For critics of the experimentalist option, the key to the process lies in the decentralization of policies and in the multiplication of *ad hoc*, private solutions, rather than in the pursuit of approaches based on individual rights and in the centralization of public decisions [SUP 08]. From this perspective, the market's operational mode is what impedes a structured process of agreement between parties in order to collate interests and adopt a common program. In reality, however, the experimentalist proposal is more nuanced. It aims to combine two types of effect within a single process. The first effect does, effectively, lie in the dissemination of experimentation in order to increase research intensity and broaden the spectrum of possibilities. The second effect, however, is directed toward monitoring and selecting practices via obligations to share information, resources and results, generating a considerable reduction in terms of chances for opportunistic or suboptimal behaviors. This is a polyarchic or, to quote Vincent Ostrom [OST 97], polycentric model, which produces a federative-type connection between the different participating entities. This federative connection takes concrete form in pragmatist institutions, i.e. institutions that embrace the provisional character of the normative regimes in which they operate. They thus operate reflexively, and their actions include a revision of the rules that they follow, in connection with increasingly inclusive participation [SAB 12, p. 38].

This particular characteristic of pragmatist institutions constitutes a first form of *full reflexivity*: an internal relation to the rules of action being used, including an action on the rules themselves, based on their implementation in a process of increasing inclusion. This inclusion requirement is inherent to the experimental process that aims to extend the possibilities for solution seeking, while intensifying the mechanisms of exchange and mutual checks. This combined dynamic of expansion and contraction means that the process becomes increasingly accessible and easier to appropriate for third parties, who will then modify the conditions of implementation. This process is only possible through constant revision of the rules directing an action in the course of the action itself, progressively reconstructing the normative expectations of different parties. This creates a living, non-principalist approach to inclusive democracy; the process strengthens itself by becoming increasingly easy to appropriate and, simultaneously, ensuring its own transmission and adaptation to requirements.

The reflexivity involved in democratic experimentalism appears to be a result of maximally extending decision processes to local entities and their specific interests, which appears to correspond to a principle of decentralization. However, this interpretation springs from a misunderstanding of the nature of the extensive process involved in experimentalism. Just as it is based on non-hierarchical co-development of ends and means, its decision processes encompass the whole and the parts, the universal and the specific, as co-evolving elements. A problem that appears to be local and specific to a group may, at another moment in time, be significant for the process as a whole. On a medium timescale, the intensification of local efforts to innovate and self-correct promotes the transferability of learning. In order to complete this extensive and localist model of cooperation, suitable institutional procedures – pragmatist institutions – are needed to guarantee knowledge transfers and the sharing of best practices. The fundamental issue of translation operations comes into play on this level. Locally, the intensification of collaboration allows us to develop solutions and adapt procedures using shared, implicit knowledge, which depends on the collaborative habits and tacit knowledge specific to an environment. The power needed to transfer and valorize local potential for innovation can only be obtained through the requirement of mutual checks, the exchange of information with distant federated entities, and the formulation of tacit knowledge for collective validation⁶. Reflexivity is therefore an institutional guarantee operation that leads us to reconsider pragmatic evidences associated with local successes, in relation to an unknown and external perspective, checking the extent to which these successes are totally dependent on their context. Translation acts as a pathway between the normal application framework of a solution and a non-normal framework, showing the potential for transfer and thus for learning. This means that there is no more “guaranteed” knowledge of the whole than of a part; knowledge that is not collectively validated by the whole may display problems, which cannot be predicted due to its situation in the complex order. The discrete reflexivity process underlying the translation operation aims to anticipate this element. As the zones of ignorance and potential blockages in a complex whole cannot be defined in advance, the modes of action need to be self-modifying, increasing their own capacity to anticipate obstacles. In translating a practice, it not only becomes transferable, but also allows us to move beyond the obvious elements associated with what is

6 “The fundamental problem today seems not how to preserve or foster creation of natural communities, but how to encourage sufficient explication of tacit knowledge to make exchange and learning among ‘strangers’ possible without undermining the conditions that foster informal dealings and reciprocity” [SAB 12, p. 42].

taken for granted within its context-dependent efficiency, which present a long-term danger to the innovative power of the practice.

Taking the experimentalist perspective, an innovation may be considered responsible if it is able to withstand the translation operation, i.e. to be expressed in without reference to suitability for an environment and to move beyond this “indexical” dimension [CEF 98]. The transferability test does not simply involve a shift in position, from “mine” to “his”, from “same” to “other”; it represents a detachment from spontaneous references to the educational (or enunciative) environment in order to measure the potential fluctuation of proposed meanings from a third-party perspective, and thus measure the conditions of appropriability, which depend as much on risks of opportunism as on those of the neutralization or dissolution of innovative proposals.

Far from being a ready-made object [BRI 11], an innovation can be detached from its context of creation by overcoming its indexicality.

2.5. Institutional change and reflexivity in governance theories

Three types of relation to change have thus been constructed on the basis of governance theories since the publication of Williamson and North’s work. The first calls upon an external perspective, consisting of a representational schema envisioning the institution in relation to the constraints of its environment as a unit of action. Modification of the representational schema leads to a revision of the contractual mechanisms used by the institution to exchange with its environment. The second type of relation to change consists of adopting a point of view situated within the complex environment and its various bifurcations. Institutional changes are thus subordinate to the capacity to break through the nodular dynamic that characterizes the transformations of the environment, and to profit from these characteristics, while attempting to reduce levels of vulnerability to opportunism. The third type of relation to change aims to incorporate the reduction of uncertainties resulting from opportunistic behaviors into the process of mobilizing nodular resources within the environment. In this case, participation is organized using collaborative mechanisms that simultaneously permit quality control of respective engagements and the identification of shared risks. It therefore deviates from the first, internalist formulation of nodal governance in two ways: in terms of the mechanisms

used to integrate the specific dynamics of complex environments (not simply profiting from the proliferation of resource concentration points, but creating a structure for collective enquiry); and in terms of the monitoring and prevention of opportunistic behaviors (guaranteeing the quality of participation by considering stakeholders, focusing on the effects of the mechanism in terms of information and result quality). The internal requirements of a learning collective also simultaneously act as a mechanism for the selection of efficient behaviors.

The desired effectiveness is, therefore, defined from an internal and reflexive perspective, considering institutional action in a complex and evolving environment. Whether or not the proposed means of producing reflexivity and the conditions provided are sufficient in and of themselves remains to be seen. For now, the proposed theories have approached the reflexivity requirement as a secondary mechanism, implemented in order to compensate for excessive vulnerability in the nodular dynamic, or as a type of cumulative gain, produced directly by the pragmatic mechanisms used in organizing the collective enquiry process. In both cases, reflexivity appears to form a necessary part of an internal perspective on change, but is only derived from a posture of control or from self-guaranteeing processes that are supposed to produce the necessary conditions for collective vigilance. In the case of nodal governance, there is an *incentive* to exercise vigilance in order to protect the local motivational force of the dissemination process, supporting its inclusive properties and an equitable approach to the distribution of power. In the case of experimentalist pragmatism, there is an *incentive* to exercise collective vigilance in order to guarantee the quality of pragmatic exchanges enabling learning, and, consequently, the production of innovative solutions.

It remains to be seen whether the presumed incentive mechanism is sufficient to develop a reflexive operation as complex as the participative processes to which it is supposed to apply, or whether the presumed reflexive operation is still too ill-defined to effectively and efficiently fulfill its assigned function.

Exploring Reflexive Governance Theory

The origins of the idea of reflexive operations, with the aim of creating a self-guaranteeing governance process, were explored in the previous chapter. This operation is directly connected to the collective exercise of responsibility by directing institutional change, adapting to complex environments and co-creating innovative solutions. However, the production of collective vigilance within processes of this type has yet to be clearly defined in terms of operativity, i.e. the conditions for implementation and the type of mechanism that is actually involved when speaking of reflexivity.

Two main types of reflexive operation have been put forward. The first consists of extrapolating the form of a general interest from specific situations, and making efforts to prevent certain participants from monopolizing access to the process, thereby excluding other interests, either intentionally or inadvertently. This approach involves anticipating a general form of common interest allowing a shift in existing procedures, submitting them to a form of hierarchical coordination, without restricting their nodular efficiency. The idea is to translate these requirements of openness with regard to the general interest into points for vigilance within the participatory dynamic of the resources in question. This vigilance relates to accessibility and the distribution of power, following a principle of symmetry between different interests. The reflexive element lies essentially in this translation operation, resulting from the extrapolation of a more general interest. This operation is said to be reflexive in that it operates by induction from an ideal framework, including all possible interests, which it attempts to transform

into a procedural capacity to maintain openness with regard to the identification and participation of these interests, even those not yet in sight.

The second form of reflexivity concerns a second-order operation, which does not act directly on the nature of the existing procedural mechanisms, but rather on the operations produced during the implementation of these mechanisms. The contribution of experimentalist pragmatism is not limited to the more circumstantial approach of a set of mechanisms used to organize collaboration for the purposes of collective enquiry in order to produce innovative solutions. It also provides the means of monitoring the cognitive operations produced within this framework. It aims to guarantee the quality of the operations produced by verifying the performance of information flows, mutual responsiveness in light of results, the co-construction of new knowledge by overcoming the barriers between disciplines and the sharing of new skills. In this way, learning is achieved through checks on the epistemological quality of coproduced operations.

Evidently, there are many ways of learning and many ways of representing the learning process. In the case of democratic experimentalism, the issue of learning relates to the mastery of cognitive exchanges, be they in relation to the choice of methods, use of disciplinary assumptions or the manner of evaluating results and margins of error. The main task in relation to learning consists of clearly setting out, for others, the way in which a solution hypothesis has been reached, or deconstructed for the purposes of reconstruction. The proposed reflexive operation undergoes a shift in relation to the one proposed in nodal governance (and concerns cognitive exchanges within mechanisms), and now acts on two levels: the effectiveness and the efficiency of exchanges. It is intended both to guarantee the quality of interactions in terms of information and to ensure that the transfers carried out in this way offer the possibility for co-constructing solution procedures via the *explicit specification* of hypotheses. In the first case, the proposed reflexivity lies in a transposition operation, moving from an idealized requirement relating to principles to the control of a procedural opening mechanism in order to guarantee inclusive properties. In the second case, the node of the reflexive operation relates to learning in the form of the transmission and elucidation of informational content; information must be produced and, at the same time, the utility of the content for the purposes of co-constructing the resulting problem-solving

practices must be guaranteed. In both cases, a transfer occurs, but in the second case, the transposition (from an extrapolated ideal level to a practical level) is less important than the bidirectional disappropriation/reappropriation movement that enables the explicit specification of cognitive hypotheses.

The evolution of governance theories thus displays a presupposition of reflexivity, but further definition is needed regarding the actual fundamental workings of this element. In the theoretical versions examined thus far, a variety of subtle distinctions appear. The neoinstitutionalist model takes a representational approach to reflexivity, seen in many theories of organizational learning: the thinking process consists of modifying mental frameworks, testing them against new perceptual data or divergent cognitive models. This “reframing” process is dependent on reflexive loops, based on observation data or on deliberative challenges to interpretative habits. The destabilization of beliefs or foundational hypotheses used to configure a practical field, or encounters with new events, which sometimes occur simply as a result of applying routines in non-standard fields, leads us to explore new hypotheses and to modify basic beliefs accordingly. For North, the difficulty with frameworks of this type lies in understanding the evolution of complex belief systems, combining rational and irrational elements, overvaluing experiences of success, relatively resistant to change, but also resistant to centralized attempts at coercion [NOR 05, p. 84–85]. The key issue in this perspective relates to mental schemas, which should be the object of reflection.

In nodal governance, the problem is shifted toward a more organicist and cybernetic model of reflexivity. The separation between a unit of action and its environment is left aside in favor of a new model, in which the unit of action is one element among others within the developmental dynamics of a complex system. The insertion into this dynamic determines the possible meaning of a system’s action on itself, as the proliferation and interaction of nodes is the key to its power for dissemination and to treat different information. This model’s limitations appear in its efficiency when reflecting on its generalization as a theory of public interest. The uncertainty of the system is offset by its relationship to a fixed point outside of the system, which is metastable and constitutes an ideal in terms of equity for access and the distribution of power, and acts as a guide in reinforcing or

redirecting from within the nodular dynamic produced by the system from the inside.

The third form of reflexivity is more homogeneous, as it does not assimilate systemic properties into mental properties; like the second approach, it has the advantage of remaining within the boundaries of the self-development process of the action system, without abstract decoupling of the unit of action and its operating environment (the representationalist postulate). The experimentalist form of reflexivity is different to the pragmatic mechanisms used to promote collaborative solution seeking, and focuses on the cognitive operations resulting from this collaborative organization. It thus acts on a second level based on the implementation of pragmatic mechanisms. It operates alongside the control function, targeting certain specific qualities of exchanged information in order to guarantee a shared innovation effect. Through the medium of discussion centers, it operates, essentially, by opening the “black boxes” of solution hypotheses, making it possible for all partners to reappropriate and/or reconstruct them, independently of the original indexical marking (discipline-specific assumptions, shared action cultures, preexisting skills, organizational logics, etc.). Information is “liberated” using a process of deliberatively evaluating the data exchanged during the search for a solution.

In each case, the fundamental problem in terms of governance theory is the way that this assumption of reflexivity may be triggered and put into practice at the correct moment in order to produce the desired effects. The representational model makes it the exclusive preserve of experts, who attempt to select those representations that enable the best possible understanding of adaptation to environmental constraints. In the naturalist model, a higher level element is needed in order to move beyond the indeterminacy of the process and hold it up against common goal criteria, requiring prediction calculations able to incorporate interests outside of the immediate sphere of impact of the process in question. In the experimentalist model, the reflexive element lies in the construction of a self-regulating, intelligent collective, in which the need for participants to learn from each other in order to innovate generates a need for a shared control mode, focusing on the quality of exchanged information.

There is thus an increasing internalization of a third element, supported by the presupposition of reflexivity. This element was initially localized in

the function of an academic expert, attempting to direct the managerial vision of action units. It then shifted onto the role of a shared culture of process equity requirements, determining the conditions of implementation of a public interest policy. Finally, it came to be seen as a form of deliberative skill, created within the construction of intelligent collectives mobilized by the pragmatist project of shared solution seeking. In this last case, the relation to the third element is created collectively, where individuals allow others to appropriate the information that they transmit concerning their attempts to solve a problem.

Within reflexive governance theory, attempts have been made to clarify this implicit relation to a third party via the concept of “terceization” [LEN 09]. The reflexivity which is presupposed by existing approaches involves a certain relationship with a third party. The common point uniting these different relationships lies in a form of “terceity”, which enables reflexivity. On the one hand, the consideration given to an external perspective makes it possible to operate a shift in an action schema and to reformulate it without reproducing solutions dependent on the beliefs that underpin the mode of action in question. In this case, the perspective concerned is neutral. On the other hand, the experience of the third party as an external perspective can be taken further, itself creating the possibility of broadening the established relational field in order to envisage a reconfiguration, either in abstract terms, with imaginary reference to a “missing” or excluded viewpoint, or by working on a viewpoint that is known, but trapped within a function known to participate in failures or excluded from the set of possible solutions. A considerable difference exists between the “neutral” third party and the potential or real third-party partner. Even between the imaginary and real third parties, this difference is huge, and the modes of working on the two types of element have little in common. In this sense, we can only speak of an effective effort at “terceization” in the latter case, when considering real work on the function of the third-party partner, even though it remains, at the end of the day, an exteriority. In this case, the critical function of terceization is as follows: the academic third party does not involve any work being carried out on terceity, as it is the sole element implementing the required action according to its neutral status (e.g. as a consultant). The use of an imaginary third party, on the other hand, necessitates work on terceity, as the third-party function is shifted onto a mediation function in the production of solutions; however, work on terceization itself is not needed,

as the relation to the third party, lying outside of the unit of action, is unchanged. When the third party is conceived of as a partner, however, terceization must be involved, as it requires us to act on the way we act in order to allow for a different relationship to the interests of others concerned by shared problems and to establish collaboration. However, even this work refers back to an external third order as an agent of action.

Academic third party	Neutral/external	Expertise	Recommendation
Imaginary third party	Work on terceity	Precaution	Ethical extrapolation
Third-party partner	Work on terceization	Collaboration	Deliberation

Table 3.1. *Integration of the third party in governance models*

3.1. Reflexivity and the academic third party

The reflexivity of academic knowledge lies essentially in the operation of shifting representations that it aims to direct. To do this, it highlights the shortcomings of older representations and the advantages of a conceptual shift, enabling the configuration of a new action framework. It is, first and foremost, a question of focus. However, the notion of focus itself needs to be constructed, insofar as the role of the academic third party consists of shifting pre-existing forms of attention in order to reimplement them on new foundations.

This process of shifting attention was considered in detail by Donald Schön [SCH 96]. Schön hypothesized that a form of attention may be seen as a selection process, feeding into a system of representations, used to confirm or overturn interpretations. The only means of modifying this process would be to reconsider the interpretative habits underpinning the system of representation. There is therefore a need to challenge a still more fundamental relationship of belief with the properties of the practical field in question. The primary role of academic knowledge lies in the specific theoretical operation of reconstructing or reconfiguring a set of fundamental beliefs, from which representations of action structures may be formed. These representations may then be tested (focused on) in the practical field. We must therefore consider the selective operations of attention in relation to a set of representations, resulting from more fundamental hypotheses that define the horizon within which those events selected for priority treatment may play out. The role of the three-level diagram proposed by Williamson,

illustrating the notion of the firm as a contractual governance structure [WIL 96, p. 223, 326], should be understood in this light. This schema is not purely descriptive, but forms the backdrop for a new way of representing actions to oneself and orienting attention. The connections created between different levels allow us to reassemble the pieces of the diagram and to locate possible points of attention for reflection. In this approach, the institutional environment is seen as a set of background conditions, determining the rules of play specific to a given market context (contract law, standards, conventions, customary practices). This macrofunctional level provides a horizon for action, and is connected to a microfunctional level where economic agents attempt to promote their preferences. The action itself takes place at the interface between the macro- and microlevels, through the creation of different contracts, integrated into the economic organization in its role as a management unit.

The New Institutional Economy according to Williamson (1993)

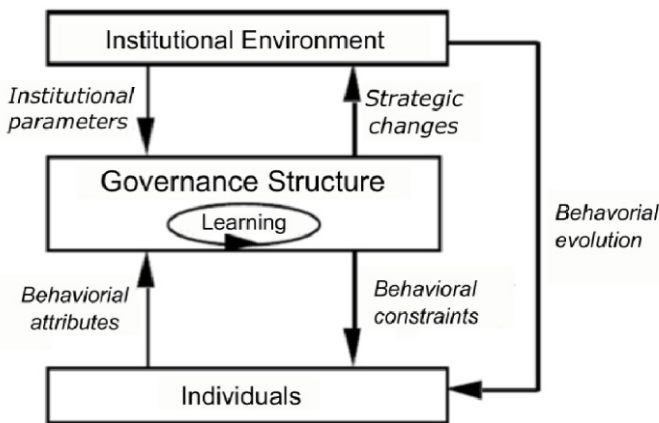


Figure 3.1. *Williamson's neo-institutionalist model*

Figure 3.1¹ shows a bipartite effect converging on the center, the environment in which the governance structure emerges, resulting from the coaction of context rules and behavioral attributes. From the center, focused on the governance structure, we may consider two forms of retroaction, seen

¹ Adapted from [WIL 96, p. 223].

as secondary effects. The central structure is the only element with the capacity for *sui generis* self-reinforcement, which may be analyzed in its own right within the context of remedial action. It also has its own form of autonomy, including codes of communication, routines and deliberative capacities [WIL 96, p. 228]. The convergence phenomenon reflected in this structure results in the creation of a model of adaptation between two poles, dependent on both the strategic capacity to respond to environmental modifications and the cooperative capacity to inspire trust in order to reduce opportunistic behaviors by agents and to take into account the limits of their rational anticipation. The whole process focuses attention on the way in which transactions are aligned with the environment and with the transformations of governance structures. This approach to a private or public economic institution, seen as a unit of action, points toward a flexible management of system risks, prioritizing the indirect role of actions affecting partial mechanisms and a small number of key elements in organizational structures [WIL 96, p. 325].

Williamson's aim was to focus attention on an action node, able to consider the risks of adaptation to evolutive environments, without losing sight of risk limitation, leading to an evolving management of those risks via a permanent and exclusively partial construction of confidence between different stakeholders in the institution. However, Williamson does not just construct the representational framework used to focus attention on the corporate action structure; he also attempts to consider this construction in terms of the development of economic science [*Ibid.*, p. 323]. Once again, the objective is not strictly descriptive. The challenge is to consider the way in which neoinstitutionalist construction may prolong and inflect efforts that have already been carried out via the addition of a new type of reflexive guarantee. Neoinstitutionalist knowledge corresponds perfectly to the proposed reflexive framework. It therefore attempts to inflect the economic perspective toward the role of organizational structures, but without claiming to approach them using a general theory of institutions. Instead, it approaches institutional action indirectly, reflecting on the basis of adaptive capacities, considered to be a partial aspect of the whole set of functions. These capacities allow for the creation of incomplete guarantee mechanisms for distributed exchanges according to the different components of the institution. Finally, it is this indirect relationship reflecting partial mechanisms that characterizes the contribution of academic knowledge, seen from the perspective of, and produced by, neo-institutionalism. It creates a new space for reflexivity in relation to the action structure of institutions

within a market. In return (via the self-justification process), it aims to be seen and approached following the conditions of production. For this reason, the relationship constructs itself as a node in the development of economic reflexivity.

In an ideal world, the reflexive production framework for this relationship would correspond to the representational framework it proposes in order to focus attention on the action structure of institutions. It is located at the point of convergence between two causalities of different natures. The first is that of the epistemological context formed by the development of economic science, and the second is made up of individual choices of analysis, partial mechanisms of selective attention that orient research questions. Neoinstitutionalism aims to offer a structure for action on the border between these two causalities, as an incomplete form of shared knowledge, which allows us to establish a limited number of governance mechanisms in order to measure the advantages, both in relation to the key questions linked to the epistemic context and in relation to the specific recommendations formulated through applied research.

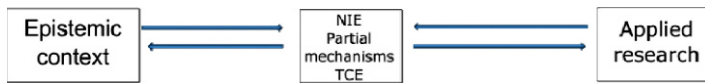


Figure 3.2. *The reflexive production framework of neo-institutionalism*

The reflexive loop offered by the academic third party can only be integrated up to this point due to the fact that it is constructed from its own capacity to intervene in representations, as a source of truth. Its effect on existing causalities is considered to be based on the performances of its semantic productivity. It can only deviate from existing action schemas by connecting its attempt at refocusing to a secondary, more theoretical schema, or “deep story”, which validates its own semantic effect in its field of origin, i.e. the field of producing semantic frameworks. The academic third party must therefore act on two levels simultaneously, concerning the practical validation of its results and the theoretical validation of its perspective, so that the two processes become mutually corroborative. The destabilization of the theoretical focus is intended to support and trigger destabilization of the practical focus. The shift in the focus of selective attention thus results from a bipartite reflexive loop. The first loop consists of accepting the truth of a

neoinstitutionalist approach from the viewpoint of economic reason, while the second consists of implementing this viewpoint as the external focal point of a narrator, shedding light on market events. The full schema, from the reflexive perspective of an academic third party, is shown in Figure 3.3.

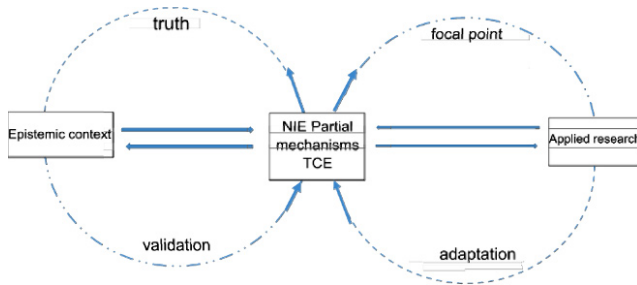


Figure 3.3. *The two reflexive loops of academic third-party intervention*

These two reflexive loops, determined by the external focal point of the academic third party, allow us to articulate the production of a source of truth with the process of partially adapting governance structures to the causalities affecting them. North goes even further than Williamson in this reflexive articulation, according a dimension to the “deep story” of the development of economic reason that justifies neoinstitutionalist reason, which largely surpasses the immediate interest of the theory [NOR 05, p. 163]. The main consequence of this extension is a deepening of the representation of institutions’ context of action, highlighting the acceleration of an interdependent world, and the intrinsic volatility of accumulated stocks of knowledge, due to the mixing of attempts at rationalization with irrational beliefs in response to particular situations. On the other hand, North insists on the fragility of individual decision-making processes, particularly due to the lack of knowledge concerning the ways in which creativity may prevail over dogmatic reflexes [NOR 05, p. 167]. He thus supports the idea that the decisive term in the adaptation process lies in the institutional medium. This diverts attention from the polysemic role of beliefs, focusing instead on the way that the institutions themselves are already, through their history, holders of skills that prioritize the capacity for prediction and the identification of margins for action that may be collectively exploited. There is therefore a truth associated with the role of the institution that must be

appropriated in order to append a new type of governance freed from an “ergodic” representation of the world [NOR 05, p. 162].

3.2. Reflexivity and the imaginary third party

Nodal governance approaches issues of reflexivity from a starting point very different to that used by the neoinstitutionalists. The two positions may even be seen as opposites, since the imaginary third party involved in nodal governance operates internally, while the neoinstitutionalist academic third party operates from an external focal point.

On the whole, the reason for this inverse situation is simple. Nodal governance is intended to operate internally, within the developmental dynamic of complex systems. While Williamson only used the nodular metaphor in discussing the evolution of economic reason, nodal governance makes use of the organic process of node development to describe the operation of complex social systems [BUR 05, p. 34] and to attempt to understand both the meaning and the specificity of rational actions on this operation.

Attempting to define the metabolism operating in social systems in this way, nodal governance follows both a principle of spontaneous organization, characterizing the dynamic of system development, and a principle of enaction, building on the potential for the rational adaptation of the concerned parties in order to increase their influence and their performance in terms of the realization of their preferences within the network structures. The key to this “social epidemiology” lies in framing the nodular process, exploiting the possibility of contaminating the whole by working on local resource pools. The mobilization of local resources allows for the connection of discrete accumulations of competencies and skills that would not be detected in a generalist organizational plan. However, optimal rational adaptation to the nodular dynamic does not simply consist of promoting the creation of new meeting points. It is also dependent on the capacity to structure and maintain these meeting points, so as to harness other resources and influence the distribution of power within the system as a whole [BUT 05, p. 37–38].

This governance action presupposes organic intelligence in the system in which it is to act. It tends to describe itself as a function within a

spontaneous organizational dynamic in which the role of information technologies and the performance of network structures are already integrated. However, the crucial element of the action's relation to reflexivity is not found on this level, but is instead linked to the fundamental question of original indetermination of the organic spontaneity model on which it is based. Can such a nodal dynamic model help to create a policy of general interest, consisting of reducing inequalities, guaranteeing the broadest possible access to all parties with a possible concern in the matter, and avoiding the monopolization of power and resources by particular interests?

The nodal governance approach offers an answer to these questions through reference to a set of ideal conditions with the function of guaranteeing the procedural quality of the processes of socially mobilizing resources. These conditions should be seen as a "normative agenda" [BUR 05, p. 55] with the purpose of improving the democratic character of nodal governance through the effects of progressively selecting good practices.

This position differs from the notion of an ideal communication framework, as proposed in Habermasian deliberative approaches. In the case of nodal governance, the set of questions making up the normative agenda directly concerns the current process and must be treated in the course of that process. Problems relating to the degree of accessibility of a meeting point, the distribution of power between meeting points or the democratic character of decision making, notably with regard to the distribution of resources, can only be posed in the case of full engagement with the nodular dynamic. The gains made in terms of internal adequation with the nodular dynamic are offset by losses in terms of theoretical elucidation of the meaning accorded to the ideal of general interest. The idea here is to guarantee as much as possible that the participation effect performs as desired, promoting the development of a culture of self-checking and arbitration that systematically favors the extension of the process, notably through its procedural qualities.

Let us consider the reflexive operation used by nodal governance for the purposes of self-guarantee in greater detail. Setting out questions for use in evaluating an ongoing process, the operation consists of two key elements: first, determining criteria of inclusivity for the participatory process, and second, simultaneously attempting to prevent situations where an imaginary partner might be excluded, and their interests ignored. The questions used for evaluation are therefore posed alongside a negative form: a question such as "who can access...?" comes within an implicit negative counterpart, "who

cannot access...?", or "who might be excluded in the current state of the process' accessibility?". The articulation of the two elements permits the extrapolation of an imaginary third party, who must not be excluded; this state of exclusion must be prevented by continuously increasing the inclusive qualities and the capacity for symmetrizing interests in the ongoing process. This extrapolation from ongoing experiences does not relate to a form of substantial exteriority, which would always remain beyond reach. Instead, it concerns a risk of exclusion, counteracted by constant attention to the potential limits of the current process. The reflexive operation therefore operates with reference to an empty exteriority: that of the "other", which must always be included by preventing the risk of exclusion.

We therefore have a new type of reflexive activity, which strengthens the qualities of inclusion and symmetrization of an ongoing process by pushing back the empty form of exclusions to avoid. It demands reflection on the requirements of inclusion, without simply accepting a given state of practice; the status quo, in this regard, is constantly held up against the notion of exclusion as a risk inherent to the indeterminacy of social processes. Reflexivity is a feedback operation for ongoing processes based on an imaginary incentive force, which deconstructs the idea of a perfect process and focuses attention on strengthening the rules of inclusion.

This second-order reflexivity combines the action of governance with self-interpretation, allowing for the production of rules for self-evaluation and the symbolic establishment of the inclusive force of the project.

3.3. Reflexivity and the real third party

Neoinstitutionalism makes use of a first-order form of reflexivity, which consists of focusing on the central function of the governance structure as a unit of action, located at the meeting point of environmental and individual causality. To support the implementation of this reflexivity, it makes use of a form of external focalization, through which an academic third party validates the gains in rationality represented by this perspective in the development of economic reason through reference to an external truth. Nodal governance, on the other hand, uses a second-order form of reflexivity, through which the inherent risks of exclusion in a governance process adapted to the dynamics of complex systems may be evaluated from the inside. To implement this operation, nodal governance uses a form of

internal focalization, enabling actors involved in the governance of these processes to establish a critical distance with regard to an imaginary third party, promoting improved inclusivity.

A third form of reflexivity is used in democratic experimentalism, which we have characterized as relating to a “real third party”. As in the previous cases, the idea is to face the limits of rationality by proposing new governance mechanisms. In the neoinstitutionalist approach, this limit was treated using the representational mode alone, leading to proposals for a new representational framework for intervention in the practical field, i.e. the contractual nexus formed by different economic institutions in the market. The “truth” aspect of this representation is said to derive from a history of representations, which while lying outside the practical field casts light on the practical field, although the logic for these representations lies outside of this field. Nodal governance treats the limit of rationality as a function of the indeterminacy created by the spontaneous dynamic of complex systems. It uses a process of permanent adaptation, starting from the inside, and aims to create a critical distance to enable effective evaluation. This critical distance is dependent on the relationship with an empty form, used as a tool for ensuring vigilance with regard to the risk of insufficiency in ongoing processes. We thus move beyond a representational framework, adopting an incentive procedure that results from the imaginative anticipation of what might occur if participation and power distribution mechanisms function suboptimally. The reflexivity used in democratic experimentalism operates on yet another foundation, using neither representations nor the procedural quality of procedures, but working on the collaborative engagement of different stakeholders. It focuses on the interaction created by experimental mechanisms, along with the effectiveness and efficiency of the shared solution-seeking process. In this way, this focalization is able to include all viewpoints; it is neither internal nor external, but total, insofar as it is based on the symmetrization of all collaborations so as to harness their capacity to generate interest for other participants.

This third type of focalization allows the collaborative process to be envisaged as a form of co-construction, or simultaneous development, resulting from the interests of all participants. It aims to ensure that all parties are co-authors of the interaction produced, and thus participate in solution seeking. Co-construction is not, therefore, the result of the abstract establishment of a point of view; nor is it the result of the extrapolation of an ideal procedural form. It is never guaranteed in advance, but is dependent on

the implementation of a self-monitoring mechanism, allowing the collaborative process to be validated by putting all of its effects on discursive display, i.e. by discussing and reflecting on all aspects. This particular form of social learning may be characterized using the term “indexicality”. It makes use of pools to discuss results and methods, which are exchanged as part of a shared research approach in order to identify any accompanying assumptions and the local indexation of the results and methods, making it possible to appropriate them in different situations. Reflexivity thus guarantees the appropriability of exchanges of knowledge and practice, elucidating their indexical implicit features. In the case of experimentalism, reflexivity intensifies collaborative co-construction, identifying indexical limitations of knowledge transfers, and is the key to producing new knowledge through self-confrontation.

Democratic experimentalism is the only approach to consider a transformation in the relationship to practical aspects for all partners, and for this reason, we are able to speak of a real third party. A new relationship to the indexicality of one’s own practices and presumptions may be constructed in response to the explanations required by other parties. The challenge here is to act directly on information biases while co-constructing this information and retaining learning. The co-construction operation specific to the reflexivity of the process may be made more complex by linking all elements of argumentational pragmatics, or by further strengthening reasoned deliberation using institutional monitoring requirements, implemented through the adaptation of leadership and decision making according to the role granted to collective deliberation [INN 10]. However, the essence of the reflexive process lies elsewhere, in the co-construction of roles which results from generalized interaction between parties. The effort devoted to “unpacking” implicit structures and to moving beyond the indexicality of proposed solutions also represents a progress in the redefinition of roles in the problem-solving process, involving working together on these roles rather than taking them as given. In this case, the type of reflexivity involved in experimentalism also affects the relation to identities that are at stake in knowledge and the transcription of information.

The specific problem in this relationship to identities is the obstruction it poses with regard to change, in terms of the repetition of roles that appear to guarantee the identity of actors, subtly intermingled with the indexical properties of solutions. The idea of capacitation found within pragmatism is, in part, directly linked to this relationship with actor identities. The

activation of capacity is the result of a reflexive operation that challenges the fixed nature of roles and introduces a process of exchange and mutual creation, through which a shift may be made to avoid repetition. The reflexive operation restores the non-identity of action that characterizes the creativity of parties participating in a shared research process.

Taking an experimentalist approach, the relation to a real third party supports the reflexive operation, i.e. the co-construction of a research partnership as a new unitary form with no preordained meaning.

3.4. The increase in references to reflexivity

The epistemological sequence described above, based on the elements identified in Chapter 2 and relating to the development of governance theories, shows a marked increase in the power of different reflexive operations. Although they generally remain implicit, these distinct ways of mobilizing reflexivity are necessary for the implementation of the different theoretical viewpoints they respectively underpin. However, they present certain common characteristics, and, more importantly, illustrate an increasingly pressing, recurrent need for reflexivity in attempts to increase theoretical performance from the perspective of governing social change. Based on this relationship to the presumed efficiency of social reason, explored using governance theories, there is now a clear need for a specific concept of “reflexive governance”, elucidating this essential orientation, which has not yet attracted sufficient attention in its own right [LEN 03].

Reflexivity is not a substantial quality, or a property to describe in the same way as an organizational mechanism or a rule of action. Instead, it is a mental operation by which rational attention directs itself, or its focalization capacity, toward the actions which it is currently producing, in the course of the action itself. This type of operation thus presents a form of efficient causality with regard to the actions carried out, in accordance with a “meaning-producing friction” co-generated with relation to these actions. It is possible to speak of adaptation or transformation of the course of an action according to the points of friction with this focalization of reason.

So far, we have concentrated on the way this focalization emerges via a relationship to a third party. The friction effect results from the connection of ongoing rational operations with a different dimension, making it possible to

challenge or even alter the course of action using a term that does not appear directly – or which is not directly available as such – within the existing relational order.

Moving beyond this formal background, which provided implicit guidance for our descriptions, other common points may be identified in the treatments of reflexivity discussed above. The first concerns a shared relation to an experience of something lacking. The recourse to forms of reflexive operations, whether in neo-institutionalism, nodal governance or experimentalism, is not solely motivated by the perception of theoretical insufficiencies that justify the efforts. The reflexive operations used by these approaches themselves include a relation to an experience of a lack. The challenge remains one of overcoming the illusion produced by the symptomatic impression resulting from something that is lacking in order to reimplement the capacities for action on another basis. The experience of something lacking lies in a relationship of powerlessness with regard to the self based on a set of assumed meanings. Consequently, we must move beyond this relationship to something we lack and accept the necessity of considering a form of shift, made by the parties involved in action processes, as the basis for transforming their interventional capacity: this is the second common point. Finally, the third common point relates to reflexive operations strong enough to provoke bifurcations with the potential to modify the repetitive dynamics that prevent ongoing processes from evolving. We thus obtain the following structure of action:

Experience of a lack → shift → bifurcation

The reflexive operation proceeds from the identification of that experience of something lacking (inherent to ongoing actions) and attempts to shift the analysis of this experience in order to enable a bifurcation in the course of action. Reflection on that experience of a lack should involve testing assumptions, and this creates a relationship to a new range of possibilities that may reorient choices of action. Reflexivity thus forms a loop based around action and leading to a shift.

These common elements do not only form an action schema insofar as they presume a certain perceptive relation to reality, the capacity to judge this perceptive information, and a theory of truth used to evaluate the results of judgments. The reflexive equilibrium present in this outline of judgment makes use of a certain understanding of reality as a reservoir of perception, a

means of judgment construction and an evaluative logic used to distribute truth values. Other implicit elements are involved in the operation of this idealistic judgment schema. First, there are possible variations between the modes of interaction on different levels; second, we must consider the activation of this process itself as a form of cognitive engagement, and thus as a belief in its own effectiveness as a means of solving problems, and not just as a perceptive process. Using a spatial metaphor of the physics of reflection (mirrors), the process of interaction depends as much on the construction of reality (the type of mirror) as on the angle of incidence (type of judgment). As we saw in the case of narrative theories, however, we must also take account of the focal point (type of focalization). The shared structure is therefore less static than one might think from the seemingly fixed schematic. Pragmatically speaking, attempting to translate these three implicit planes on which the effective dynamic of the proposed action schema is based, we see that there is a certain belief in an experience of something specific lacking from the produced actions (the mirror), which leads us to establish working hypotheses (choice of an angle of incidence) to test their capacity to modify initial beliefs concerning factual states (bifurcation of the produced image). The “Experience of a lack-Shift-Bifurcation” schema may thus be accompanied by a belief-hypothesis-test structure, which elucidates the reflexive dynamic mobilized in the course of action.

This second sequence is also interesting in that it draws attention to the particular connection that exists between the first and third moments: an unsatisfactory representation of reality is held up against the hypothesis of a more satisfactory reality. The challenge in this case is to evaluate the evolution of a degree of satisfaction, in accordance with tests carried out on an idea, modifying a certain relationship between factual states and a given knowledge regime.

Moving beyond these common points associated with the reflexive schema and dynamics, the proposed types of test are also significant, as each of the proposed directions allows the chosen implicit structure of reflexivity to be reconsidered using certain specific nuances.

The first form of reflexivity, encountered in neo-institutionalism, consists of acting on deficits in representing the connections between a unit of action and its environment. The aim was to shift focus away from this representational blockage in order to consider the construction of another action structure, offering new possibilities in terms of relationships with the

environment. In this case, the reflexive action was guided from the outside by the intervention of an observer, whose “external focus” permits both objectivation of the behavioral deficit and the formulation of a hypothesis for redirecting the representation of a suitable mode of action.

Using nodal governance, the dynamic of complex systems is approached from the inside, without attempting an abstract separation of an autonomous entity and a restrictive environment. This internal focalization leads to a different approach to reflexivity; in this case, a limit needs to be respected by extrapolating the risks associated with the indeterminacy of the process in which the action is involved. In this situation, the theorist acts more as a facilitator than as an observer. The existing collaborative/nodular force of complex systems must be preserved, and its motivational power should be extended, promoting imaginary self-interpretation from the higher level perspective of an ethical requirement of inclusivity.

Democratic experimentalism abandons the idea that a stance on focalization, whether internal or external, needs to be determined in order to engage the reflexive operation. In this approach, we are neither identifying a representational deficit in relation to preconstructed knowledge, nor facilitating a developmental dynamic by introducing a principle of self-limitation. In this case, the reflexive operation needs to position itself within the relational matrix in question, without separating elements and without imaginary projections, but rather based on the terms of the relationship, i.e. in relation to the roles involved in the relational matrix. The reflexive process involves abandoning spontaneous attachment to these roles, in such a way as to elucidate their functions and to make them appropriable in situations other than their native environment.

Ultimately, the question to be answered concerns whether or not these three approaches provide exhaustive coverage of what might be hoped for from reflexivity. From a pragmatic perspective, this seems to be the case. The neoinstitutionalist approach is based on a representational *theory of truth*, and highlights a means of overcoming representational shortcomings, proposing an approach to confirmation via genealogical reflection and a shift executed using a strategy of paradigmatic change. The nodal governance approach is based on a systemic and holistic *theory of reality*, and illustrates the interest of a principle of enactment; its immanent stance is accompanied by a second-level principle of self-limitation. Finally, the experimentalist approach favors a *theory of method*, acting on the border between reality and

reinterpreted truth, which provides an environment for testing how well beliefs and ideas line up in a “satisfactory” way. Following the ideas set out in Dewey’s article on James’ seminal 1908 work on pragmatism [DEW 77, p. 98], all of the ingredients for an approach to action based on the method of social enquiry are present here: truth, reality and method. Reflexivity may act either through the structure of representations, by the self-limitation function of practical procedures, or by the coevaluation of subjects involved in action. The third approach clearly includes a dimension that is radically different to that shared by the first two approaches, in that it clearly defines the effects of engagement in action which are presumed in the first two cases. At the same time, however, it remains dependent on the other two forms insofar as it is situated at the point of objective disjuncture between representation and action, where informational asymmetries occur spontaneously due to disciplinary boundaries and practical habits.

In this respect, experimentalism might be seen as simply a meeting point, necessary for the implementation of lessons drawn from neo-institutionalism and the collaborative reason found in nodal governance. It would render their diagnoses, regarding the logic of institutional action and the systemic reality of the application environment, subjectively operative. Social learning might only be a means of collectively carrying out what we are all (as singularities or natural collective entities) lacking, i.e. the production of a shift that generates the possibility of bifurcation, or the testing of ideas that challenge existing beliefs. It would thus form a crossing point between knowledge and action, between cause and a desired real effect, and a means of overcoming the distance that prevents us, individually and collectively, from addressing the need for change. In this case, the approach would not represent a new means of understanding our capacity for change, but rather another way to deal with our shortcomings and their immediate effects.

3.5. Reasons why this use of reflexivity is unsatisfactory

We feel that this manner of using reflexive operations in the construction of governance processes is unsatisfactory. Representational reframing operations, self-monitoring of inclusive dynamics or cross-evaluation of information exchanges ultimately have only two clear functions. Their first function is to make collective action problems constructible, rather than taking them as given. By recreating the challenges encountered, an action collective may consider them to be “reflectible”, i.e. open to both analysis

and transformation. By reconstructing a problem – concerning the interactions between an institution and its environment, the development of a complex system or the diagnosis and cooperative resolution of a question – the reflexive process adapts its “truth” to reality, contextualizes knowledge and modifies practice. Furthermore, by committing to this reconstruction process, it also modifies its own requirements in terms of satisfaction, finding a new object for satisfaction in the mastery of procedures. The second function of the process is to modify the relationship to the power of decision. The reconstructed problems are reflectable and transformable, but what gives them a decidable form is the capacity to (re)position oneself in relation to them. Decidability is not primarily dependent on the nature of a problem, but rather on the stance taken with regard to this problem. Things which may seem indecidable according to a set of given criteria and a bounded order of description may become decidable if we change our level of approach in order to confront the problem. This is the metastable level effect widely used by authors such as Aglietta and Orléan [AGL 82] in their explanation of monetary policies. Elements that cannot be resolved from the perspective of competition between system users may be resolvable from the perspective of a hierarchical authority, expressing the question of norms in a different way; anything which this authority is not able to resolve may be considered again from the broader perspective of an ethics of the common good, involving human collectives at an even higher level, above their hierarchical structures. From this perspective, the defining aspect of an international convention lies less in the disappointing characteristics of soft law than in the capacity for federation, above and beyond a relationship of authority and a system of sanctions. Another function of reflexivity is its involvement in giving meaning to a metastable level in decision processes. In this framework, however, its most important feature lies in redefining expected roles in accordance with this metastable level, identifying new responsibilities with regard to a common problem-solving power.

The use of reflexivity in governance processes thus fulfills two functions. The first consists of reconstructing the intelligibility of problems, making them collectively reflectable, making it possible to interpret them and to create common solution hypotheses. The second consists of transforming the relationship between participants and the decidability of the problems in question, so that a decision in favor of a problem-solving process is also a determination of a part to play in this process, the reaffirmation of a role to be played alongside others in producing solutions.

These dimensions of reframing and co-constructing solutions are fundamental. However, they also impose significant limits on the scope of reflexive operations, restricted to an action pragmatization function. The prevailing aspect in this case reduces the relationship with the content of facts to a belief, and reduces ideas of change to a rule for action, according to which what is to be tested are not facts, but rather shared skills. Our beliefs (and thus our relationship to facts) are considered to change along with our capacity to interact and to modify our collective capacities for action. Elements which we consider to be uncertain are those things that cannot be treated using traditional methods of problem solving; we must simply produce new capacities for action, while modifying the levels of intervention in question in order to reduce these uncertainties to an acceptable point [JES 03, p. 110, LEE 03, p. 16].

This use of reflexivity corresponds to a certain evolutive state of the understanding of knowledge and its relationship to the orientation of practice. It constitutes a model of suboptimality in relation to an uncertain environment. Reflexive operations allow us to consider different possible levels of stabilization for action processes, considering complex ways of constructing a common interest, unlike other microanalytical models founded on strategic calculation, balancing interests and cost/benefit effects. The capacity to share adaptive improvements is highlighted, rather than the capacity to take over dominant positions in order to fully benefit from opportunities.

However, this use of reflexivity is marred by an enormous blind spot: it takes the predominant roles of the two major functions for granted, as if they were sufficient to guarantee the capacity for change. We might wonder whether shifting beliefs and making a role in the bifurcation of problem-solving modes decidable is sufficient to direct change. The blind spot appears in the relationship to the power for change. It is as if treating this “need” for change as given is enough for a sufficient effort to overcome all resistance to change and kick-start the actual change process itself. There is a presumption that resistance to change is the result of an initial lack of capacity to change or to solve problems. From this perspective, once a means of activating the relevant capacities has been identified, the fear of failure disappears and the action becomes possible. The idea that the cost of solving a recognized problem would be too high, and that it might be better to live with the problem, would, in this case, be seen as an admission of weakness that might be overcome by simply proposing a less costly solution.

This notion underestimates the scope of resistance to change, which is not initially based on the insufficiency of means, but rather on a relationship to the certainty of a guaranteed identity, verified in relation to a set of non-reflected, but given, parameters, and which it is best not to challenge. The maintenance of a privilege or dominant situation of a national position within a confederated or unionized whole, for example, would be one of these imaginary guarantees. This resistance does not simply operate as an obstacle to change. As long as it is not challenged in its own right, it will remain present within the processes of change, for example when considering the utility of a less costly change or of an action that might prove less costly than inaction with regard to a problem. In this case, we concede the idea that it is possible to change without fundamentally modifying the guarantees offered by the original situation, recomposing these guarantees through the medium of the problem-solving process. Based on this hypothesis, the relation to the capacity for change is overdetermined by the expectation of a repetition effect, which directs involvement in change.

The two proposed functions of reflexivity do not affect this fundamental level of resistance to change. They allow for the development of capacities to change the course of actions by promoting cooperative problem-solving processes and thus, potentially, learning new roles. However, the action on the relation to change remains secondary: indecision or ambiguity that may inhabit actors' relationship with the utility of change is only affected indirectly through the development of capacities to reconstruct problems and to produce collective solutions. This way of using reflexivity, far from solving questions of resistance to change and of repetitive behaviors, simply favors their obliteration. Despite its best efforts, it blocks access to a more radical form of innovation on the postural plane, enabling actors to build within themselves the capacity for change.

3.6. What remains out of scope

There are more elaborate modes of reflexivity than those discussed thus far, which are explicitly developed in approaches making use of communicative action and/or neopragmatism. Intelligent cooperation must involve the construction of interactive collectives with the capacity to construct and process complex information, or even to coordinate solution-seeking activities. The reach of these reflexive approaches may even extend

to increasingly elaborate models of deliberative politics [HAJ 03]. These enable the classic approach to planning and public policy evaluation to be transformed, as in the case of shared territorial diagnosis, or of collaborative approaches to the solution of public problems [INN 10]. The advantage of an approach in terms of reflexivity is that it focuses attention on the mental operations that enable the capacity for innovation to be improved, going beyond reduced-cost adaptation to encompass goals of inclusion, resistance to monopolization, and skill transfer, leading to a democratic form of co-construction. Joëlle Zask goes so far as to state that:

“Only those social inquiries which are based on consideration of the point of view of the respondent (citizen, or simply man) and which develop under the form of cooperation and of the co-production of objects which may constitute pivots for the adoption of diverse political stances, may be considered compatible with the requirements of democratic life” [ZAS 04, p. 161].

This type of approach would, in practice, guarantee a form of convergence of varied opinions toward a co-produced “common” element, while “safeguarding both against tendencies to monism, as adopted in ‘identity’ politics” [ZAS 04] and against “that mechanical equality which runs contrary to the interests of members of a free and democratic society” [ZAS 04].

This point is both essential and problematic. Taking the dynamic of participative enrolment, to which deliberative and collaborative approaches both lead, as a given, if we consider that the inducement to test the effects of exchanging practices is stronger than the resistance to change, since the problem lay essentially in the method and rational imprisonment in a neoclassical theory of agency based on non-cooperative presumptions, the interactionist impulse should be sufficient to engage a shift toward new and collectively sanctioned bifurcations. However, it may not be possible to overcome certain resistances without attempting to modify fundamental beliefs relating to the expected benefits of participation or the effective costs of its implementation in a context of inequality with regard to the allocation of resources or solidarity between different roles. Even so, the many improvements that might be made in order to render the belief in the efficiency of participative dynamics more operational would in no way affect the initial presupposition, which is based, fundamentally, on a capacity for change that simply needs to be unleashed.

In this respect, the rational egoist postulate, seen as an initial bias and, as such, opposed by participative approaches, conceals a more complex problem, which a simple reversal of the postulate in favor of a plurality of possible attitudes does not allow us to glimpse. The choice of a stance that aims to identify all possible means of effectively and efficiently self-guaranteeing, in an environment in which possible agreements also, themselves, need to be guaranteed, proceeds from a more fundamental relation to the self that characterizes the starting point for human action, and without which the question of a capacity for change runs the risk of being missed. Action takes place in a temporality that is lived, and thus reflectable, and that also presents itself as the only thing we may know for certain, as it is based in fact. This is the relation to what is already given. Action relates to this “pregiven” aspect, not as a precise determination as a source of direction, or as content to produce, but rather as a unitary form; the relation to change is thus predetermined by a relation to the self as a *unity* of action. We refer to this notion as the “pregiven unity”². This unity may be approached in an imaginary manner through the desire of the other, or symbolically via the medium of fantasy. However, what is found at the source of action is a pre-given unity which constitutes any experience of identity, that of a living and feeling body, independently of the meaning it may be assigned in the course of the action.

This primacy of the “pregiven unity” cannot simply be set aside by referring to the simple destiny of the action. Bourdieu noted that, despite the experience of practical sense and its regularities, many approaches tend to give too much importance to the relationship with one’s “origin” [BOU 80], and to give way to a form of nostalgia for a “golden age”; this is not simply due to a schema focusing on loss or revisiting the imagery of the Fall. These mechanisms are themselves derivative, and arise from an unelucidated relation to the “pregiven unity” of action. It would certainly be possible to consider this unity as an empty starting point, simply marking the absolute beginning of an open series (following Kant’s interpretation of freedom). The first member of a series enables counting to take place, but must itself be counted in order to produce a measurement (like the zero on a measuring stick). However, the function attributed to the “pregiven unity” of action cannot simply be reduced to a formal principle determining a subjectivity’s relation to itself. It also constitutes a practical relation to this unity, an imaginary relation, which allows us, as Bourdieu suggested [BOU 80], to create an action schema. The

2 Analogy with the notion of the “ready-made object” in the philosophy of mind [BRI 11].

function of this schema would be to define the field of imaginary equivalences with the potential to exactly match the initial unity.

This more analytical approach to the “pregiven unity” of action is crucial in identifying the identity process taking place. Insofar as action can only reaffirm the certainty of the self on the condition that it is understood as emanating from a pregiven, imaginary unity – able to constitute both its formal rule and its imaginary principle: subject x as the I-unity of action – action is also marked by a constitutive fissure at its point of origin. In certain phenomenological perspectives, this is particularly strongly symbolized by the moment of decision. We thus obtain a bipartite relation to identity: on the one hand, the “pregiven unity” of action makes it possible to create an imaginary identity, in the form of an isolable and singular unity, on the level of action; on the other hand, this identity proceeds from a schematization operation, which incorporates an idea of the self into the unity, an idea which cannot be identical to the unity itself as it is not pregiven. There is thus, correlatively, a relation to the identity of the self and a relation to the non-identity of the self that, together, make up action. However, these two terms are not in a fixed state of equilibrium: an action’s relation to the non-identity of the self only appears as the background to a process that results in its disappearance, in order to affirm the action, in the same way as the signifier is eliminated in favor of the signified in the signification process.

Let us develop this schematization operation, which further links the idea of the self and the “pregiven unity”. In considering action as a structural entity with the potential to change or to act on itself while producing its own effects, we have already moved beyond a simple representation of an operation passing from one state of facts to another. This structural entity, considered to be potentially reflexive, is minimally present in the form of an imaginary relation to the self as an entity, i.e. a certain idea of the self. This primary form of relationship forms the basis of its operational identity as a power or capacity: whatever the primary identity of an action may be, it results from its operativity as an imaginary construct that the action creates for itself in order to take form as a structural unit.

How, then, are we to address this initial distance, inherent in any idea of an action’s unity? We might consider that the essential function of any action process consists of reproducing its power for imaginary construction through confrontation with the desires of others. A cooperative destiny emerges from this confrontation, via the requirement to limit the

imagination's power of repetition by a symbolic process of association. The problem of the relationship to the pre-given unity does not result exclusively from the considerations marked by a theory of the unconscious. Dewey also considers this problem from a range of different psychological bases in defending a situated theory of cognition and a behaviorist-type relationship with the environment. In *Art as Experience*, he periodically suggests a type of relation to emotion that would make it impossible to analyze its construction [DEW 10]. This tendency involves considering emotion as if it were, from the point of manifestation, an entity constructed entirely from the inside [DEW 10, p. 147]. This hypothesis, in Dewey's formulation, is particularly symptomatic of a representation of the self as independent of external stimuli, as fully constituted from within. A hypothesis of this type can only be meaningful if its projection takes an exclusively imaginary form: that of a self-identity predetermined as a form of the self and belonging only to the experience of discussion, unrelated to environmental constraints. As the self is simply a transaction structure that becomes self-aware through externalization, the sole function of the imaginary hypothesis is to define the moment of intermingling of the self and the environment in emotion; this does not assign a form of interiority to the emotion event, but, on the contrary, demonstrates the implication of the self in the given situation by the emotional composition produced by the self with its environment.

The limited attention that Dewey devotes to his own hypothesis shows the extent to which the initial dichotomy of subjectivity can be missed by a reflection on action at the precise moment at which it attempts to understand its own position in its constituent relation to emotivity. Use of the symbolic role fulfilled by the function of linguistic interaction and its way of accounting for the desires of others, while more subtle, ultimately operates in the same manner. It removes the influence of the imaginary moment, although this cancelation is slowed by the way in which the power of repetition is taken into account.

For this reason, two problems still need to be addressed in order for the initial division of an action to be acceptable. The first challenges the presumption according to which it would be possible to completely overcome the desire for repetition and for a fixed identity by applying a rule of limitation. For this to be possible, a symbolic relationship with the other needs to be guaranteed. The second problem concerns the privilege granted

to imaginary means of overcoming this splitting. Doesn't this privilege risk undermining the relationship to the non-identity of the self? This relationship might be at the base of a specific type of reflexivity, with the potential to orient an action process in new directions. By eliminating this relationship, we would lose a first-order reflexive mechanism, the cancellation of which has guided all of the reflexive hypotheses affecting ongoing action that we have considered so far. The neoinstitutionalist, nodular and experimentalist hypotheses all proceed from a shared presupposition regarding the reflexive nature of the unity of action, in the form of a relation to self that needs to be cast aside thanks to a third party in order to gain a capacity for change. Ultimately, the most problematic common point is the fact that questions of resistance to change, rooted in the *reiteration potential* found within action structures, are left aside.

Key Strengths of a Reflexive Theory of Governance

The critical discussion in Chapter 4 provides a clear definition of the fundamental epistemological issues surrounding a reflexive theory of governance. These issues are as follows: (1) the adoption of a theoretical position that attenuates the dominant force of reiteration that directs all collective action structures and encourages actors to maintain an imaginary relationship with the supposedly pregiven unity of their identities; (2) the development of the practical characteristics of a reflexive hypothesis that is coherent with this theoretical requisite.

First, however, we need to clearly define the meaning given to the term of reflexivity in this new context. Up to this point, we have simply described the mental operations allowing guidance, in various forms, of ongoing actions, while making use of the functions of a third-party element to enable *focalization*.

At the end of Chapter 3, an attempt was made to establish, progressively, another manner of proceeding. This approach was initially presented from a negative perspective by indicating a shortcoming of the method used previously. Considered from the outset as a mental capacity, reflexivity in all of its forms relied on a supposedly given form of action's unity, which it imaginarily incorporated prior to, in some cases, contributing to its deconstruction. The "pregiven unity" of the action did not, therefore, only concern the structure of action, but also, indirectly, that of reflexivity, as an operation incorporating this presupposition. It was referred to implicitly in the same way as an action with a predefined structural unity, but which still

required analytical decomposition through the observation of its operation. Reflexivity was thus itself formally and substantially connected to the pregiven unity of action. The critical examination of this pregiven unity allowed us to show the split self of action as relating to itself in two different ways: as an idea of the self and as pregiven. This highlights the possibility of another approach to the reflexive operation. On the one hand, the imaginary understanding of the identity of a self whose internal split has always already been overcome in its very constitution creates a potential for repetition, which is specific to the imaginative function. This function tends to show that the desire for identity is not, in the case of action, simply a support whose influence can be reduced to zero. The issue concerns the idealized possibility of a *sui securus* self, which may always be retrieved via an immediate understanding of the self as a starting point or a pregiven unity. On the other hand, this imaginary form of reflexivity, with no real object except for the power of reiteration it engenders, i.e. itself, is distinct from a form of reflexivity relating not to itself as an operation, but to the split between the idea of the self and that of a pregiven unity by continuing to define this undecided instance as the starting point for action, an operation that the power of repetition constantly threatens to dismantle. By constantly paying attention to the role played by the non-identity to the self, this form of reflexivity keeps open an expansion of the field of possibilities distinct from the power of repetition.

Developing this form of attention, which creates possibilities, we are able to gain a clearer understanding of the scope of a reflexive operation, one which is separated from the identity-related presuppositions of action and proceeds from its own split structure, which reflects the non-identity of the acting self and its reality.

We will thus progressively abandon the structure of *focalization*, based on a relation to a third party, in favor of a structure of *thematization*, based on a relation to non-identity.

4.1. Attention as “thematization”

In his *First Philosophy* [HUA 70, HUA 72], Husserl, the father of phenomenology, proposes a specific concept in relation to the reflexive operation of reason used to characterize the attention process employed by reason to support its own operations. Husserl's relevance in this context lies

primarily in the fact that his philosophical approach proceeds, as a whole, from a relationship to the non-identity of consciousness, i.e. the non-identity between the natural consciousness of the world, with its associated perceptions and immediate beliefs, and the critical consciousness linked to the construction of its operations. The critical process requires one to bracket what appears as obvious to the natural mode of consciousness. However, the arbitrary creation of a division between the two levels of consciousness is not sufficient to guarantee the independence of the critical process. The type of relationship created between consciousness and its meaningful content, within a universe conceived according to the determinability of ideas of reason, still needs to be elucidated. We must, therefore, consider a second-order rational relationship to the relation created in accordance with the non-identity of consciousness. This is the relationship that may exist between reason and the production of its own critical operativity. Generically, Husserl speaks of this idea as a special form of philosophy whose object is phenomenological reduction [HUA 72, p. 124]. Specifically, however, Husserl is also careful to determine the operating structure corresponding to the fulfillment of this intentional target in the form of a structure of attention by thematization [HUA 72, p. 138]. The reduction that establishes the possible independence of the critical regime in its non-identity with the natural regime, as an operation of reason, becomes the theme of a specific act of understanding [HUA 72, p. 141 *ff.*]¹. In this respect, Husserl speaks of a doxothematic act [HUA 72, p. 131–132]: the “I can” that directs any act of knowledge in relation to a belief structure (*doxa*), rather than any truth-adéquation, relates to the inference of a theme.

In this case, attention is not a selection operation, as in Leibnizo-Wolffian type rational psychology, consisting of concentrating the targeting process on particular characters and reducing the attraction of all other characters, which are relegated to the background. This traditional structure of attention includes an anthropological aspect that opposes and combines two tendencies, attraction and reflection. Attention is the result of a targeted increase in reflection (focalization), combined with a reduction in attraction. Husserl leaves behind this binary anthropology of reflexive and selective attention. According to his specific approach to the reflexivity of reason, attention proceeds first from the inferential production of a theme, and

¹ The question concerning how an object is given may emerge, progressively, due to the fact that the question of an targeting object's process may also become that of a targeting process dissociating a judgment of identity and a judgment of existence [BEN 98, FOR 13].

configures a horizon, which it then combines with an action process, i.e. with the relationship between an operator and an *operandum*. In this case, the theme is the difference between the supposed unity of the operator and the synthesis, which he or she attempts to produce through their targeted action. While reduction, as a rational operation, can still be understood as a certain relation between an intended meaning and a targeted term, the process also lies in the transformation of these two terms due to their connection. What reason must grasp, when considering its own operations from a critical perspective, is the reality of this relation that separates the ideal unity desired by the operator and the symbolic synthesis of reality. Thematizing attention, thus, builds toward the reality of the relation based on the non-identity of consciousness, creating a real mode of action from the interval between the imaginary and the symbolic.

We feel this Husserlian approach to be crucial, as it allows us to access a mode of action using a specific way of attentionally grasping the activity of reason. The real dimension of the relationship, cast as a theme, is the element that allows us to act according to action's non-identity². For certain commentators, the decision to approach attention as a thematization operation is partially linked to the idea of using an *iterative process*. Thematizing attention makes reflexivity iterative, considering it as an operation that accompanies the process of reason and allows integration of its recursive dimension. Hence, the overarching model of attention would involve identifying the rational operator by shifting it, then implementing operations while continuing to take account of the initial approximation from which they emanate. The thematization horizon of a rational operator would therefore never be definitively pre-given, but would broaden progressively over the course of successive approximations. Sebastian Luft goes so far as to state, in this regard, that the method for a critical observation is never defined once and for all, but develops through use by reflexive iteration as a progressive theory of method [LUF 02, p. 180].

The thematization operation thus consists of making space to take account of self-construction in the course of an action, like a horizon that broadens progressively from a primitive non-identity. In this way, thematizing attention allows us to shift away from the monist vision of an ongoing action, by simultaneously incorporating the power of reiteration at

² Sebastian Luft, in his commentary, goes so far as to state that: "ohne Ichspaltung keine Selbstthematisierung!" [LUF 02, p. 178].

play that constantly threatens to overdetermine choices and expectations. This brings us to the exact point that is absent from focalization-based structures, which simply presuppose a pregiven unity, whose implicit rule consists of attempting to perpetuate itself through use. Structures based on the focalization of attention presume the existence of the capacity to follow a predefined rule for self-guaranteeing a pregiven identity. This rule may consist of a representational shift, the extrapolation of general principles, or of overcoming the indexicality of exchanged information. In all cases, these rules require a reflexive capacity for action on the self, which guides their implementation and anticipates the benefits of their effect. In this type of framework, there can be no possibility of self-thematization of the reflexive capacity, nor can we challenge its simple identification with an imaginary power of reiteration of the self in the effect of the ongoing action.

This relation to change in the course of action is eminently problematic. It only permits two implicit attitudes. In practice, both suspend reference to an indeterminacy of the power to change, and to an action constructing an attitude that constantly adapts in relation to this indeterminacy. Worse still, indeterminacy may be completely externalized and considered as a totally independent factor, produced by uncontrollable external circumstances that can only be approached by a strategy aiming to reduce non-mastered risks. The first possible attitude is one of *voluntarism*. Change can occur only through the choice of a self-preservation action in an uncertain environment. We thus fall back onto the iterative power of a predefined certainty of the self, activating the given capacities for self-conservation. This leads back to an anthropology of instincts as functions of rational adaptation to an environment. The second possible attitude is *emergentist*. It consists of taking advantage of circumstances, relying on a second-order self-guarantee capacity, namely, a responsiveness to the environment in accordance with shared characteristics. In a way, emergentism naturalizes reflexivity, making it a property that may be incorporated and reinforced by rational action, as it is provided by a functional identity with a living environment. There is, thus, no need for anticipation or prevention using a specific reflexive power; instead, this approach operates by reinforcing and stabilizing a reflexive power, which is already present in systemic interactions.

These two attitudes are eminently problematic due to the fact that they both *beg* the question. The incapacity for change is never analyzed in its origin; on the contrary, it is the capacity for change that is assumed to be pregiven and ready to use. Evidently, it may then fail, change, or learn from

mistakes. However, the basic idea of change or improvement is never challenged, and the more radical idea of a fundamental resistance to change is never considered. There is, therefore, a risk of acting only superficially on a presumed force, whose orientation is potentially completely different, i.e. a power of iteration that may be imaginarily locked down in the form of a pregiven unity or, in collective action, a shared identity. In this case, governance would only govern an unspoken social reproduction that, worse still, is unaware of its own founding principle, denying the very power of adaptation, which it continually presupposes.

Every theoretical stance concerning changes to ongoing actions thus shares the same characteristic blind spot. This is the result of a presupposition, which is inherent in the targeted object, the idea that the object has already been prepared for the treatment it will receive, insofar as its construction is already in process and it may even undergo different degrees of analysis and evaluation. A presupposition of this type does not constitute a simple starting point for thematic attention, but rather for a focalization operation that adapts to this entity, approaching it as if it were an already constituted whole. The problem in the case of thematic attention is of an entirely different nature. Far from supposing a potential and iterative identity of the object constituted by the intended action, the initial challenge is to define the distance, at the moment targeted by the action, between the idea of the self, which it is able to establish and the imaginary relation to a unity that it does not in fact constitute. Thematic attention offers a problematic window on the future of an ongoing action, built according to its non-identity and relating to the social evolution that determines it. Action is an unstable moment, and not a ready-made object. It results from a dynamic and complex social process, which it stabilizes in the manner of a yet-unfinished object, which already carries, however, the possibility of being seen under a new light. It constitutes a crossing point between imaginary stabilization and a symbolic translation, which creates a form of joint through which thematic intervention may act to highlight this specific power of iteration using non-identity. This is the fundamental aspect: an attention able to thematize the iterative capacity of actions according to their non-identity, and not their presumed imaginary identity. Where attention through focalization only harnesses the *potential for reiteration*, which the theoretical relation to the pregiven unity of action imaginarily assigns itself, thematic attention opens a window onto the *iterative power* of actions in accordance with their constitutive non-identity.

4.2. Reflexivity in governance

Up to this point, proposals for the use of reflexivity in governance have concentrated on focalization processes, applied either to representation, to the nodular dynamic of complex systems and the extrapolation of meta-principles, or to problem-solving processes and the co-construction of knowledge exchanges. These processes never effectively address the hypotheses of role repetition and identity self-preservation, which overdetermine the effects of change and adaptation that they promote. In reality, they aim to promote and direct a propensity to change, which they simply take for granted. The power for reiteration and the power for iteration are considered to be the same thing, in accordance with an imaginary capacity of action to guarantee its primitive identity and guiding structure. The work of reflexive governance comes in later, as a translation attempt to create a symbolic realization in accordance with practical constraints. This can already be done imaginarily, but in an abstract or strictly fantastical register. This symbolic translation of the imaginary power of change is carried out by an expert, a reflexive practitioner or a community of practice.

This type of approach to reflexivity within a governance framework does not permit radical treatment of resistance to change in advance of the implementation of potential reforms; furthermore, it is also misguided with regard to the effective levers of change, which do not lie in the limitations of the imaginary's capacity for change, imposed by confrontation with constraints and attempts to rationalize behaviors. In reality, according to the strong hypothesis of reflexivity in association with thematic attention, the effective lever for change lies in abandoning the relation to identity as if it were an implicit rule of action, able to guarantee this identity through change and to secure itself in own realization as the developing unity of a pregiven self, if only as a preference, wish or desire. The hypothesis of reflexive governance aims to create this lever. It, thus, requires us to move past the implicit relation to a general rule of action realization and to thematize the operation type that simultaneously enables a dissociation of reiteration power and iteration power. Based on this hypothesis, reflexivity is in no way an operation constructed *post hoc* to correct the undesirable effects of a spontaneous dynamic of action. Nor is it a given capacity that is automatically activated as soon as action processes are triggered, a type of second consciousness of the ongoing action that we must simply learn to use and integrate better. Reflexivity is an operation of reason that is suppressed through its relation to itself as a pregiven unity. From the moment the

rational understanding of an ongoing action proceeds from a sort of reflection on a pregiven primary rule of realization, as soon as it is produced according to a relationship with the pregiven unity of its initial identity, this understanding can only mobilize the reflecting logic of a relationship to a phenomenon, in the manner of a response or a counter-phenomenon that must be internalized, interpreted, understood or even explained. This rational understanding of action definitively eliminates the possibility of another type of relation to the self and to the rules of action realization. In its first and most radical sense, reflexivity is an operation that thematizes the gap separating, from the outset and in all forms of action realization, the desired unity and the desiring power, the fictional starting point and the effective results, with their rules of production.

As complex and abstract as this radical notion of reflexivity may seem, it is crucial to understanding all of the rational processes that aim to construct a form of self-challenge of their status as rational processes, whether through self-monitoring or self-evaluation. Self-analysis processes must either proceed from a relation to an external element used to permit a process of indirectly grasping the self, or they depend, ultimately, on an operation that relates directly to a capacity connected with reason's relation to itself. Since what is at stake is nothing less than a means by which reason may act on itself and succeed in modifying itself within its mode of realization, an internal, inherent action is preferable as it maintains homogeneity with the realization process. Without this, change would merely consist of a process of functional adaptation to an environment, spurred by an observation external to its own choices. Finally, we end up with a situation in which reason's only task would be to believe in an external truth with the ability to provide a law for the conservation of its interests. But even this relation to a truth outside of the self, which needs to be integrated as a rule of operation, still carries traces of a difference that cannot be erased by this approach to reason: the idea that it can only guarantee itself, as reason, with reference to a law that transcends it. But this difference defines reason both as what it desires to be and as what it is not in fact, without using a rule to embody this desire. Approached directly from and in accordance with this difference, rational activity appears in a different light, endowed with new resources. It is this non-identity of the self with the self that highlights the inoperative character of rules outside of a prior construction process, and which indicates the possibility of a relation to the self, allowing thematization of the permanent divide between the iteration of capacities and a rule of identical repetition under any form.

The reflexive understanding of action thus applies both to the origin of capacity as an iteration power and to a certain vigilance with regard to those behaviors that might suspend this power in favor of an imaginary rule of repeating action's unity. Reflexive governance aims to incorporate this process of understanding action in the form of an institutional vigilance with respect to behaviors resulting from normative usage guided by governance processes. These governance processes can, in fact, be seen as collective mechanisms for mobilizing actions through different coordination and cooperation structures. As in Bratman's understanding of planned action [BRA 92], or the collaborative rationality model offered by Innes and Booher [INN 03], the issue is that of encouraging different agents to produce activities in a cooperative manner, reaching agreement on objectives, resource allocation and modalities of implementation (an agenda). In all cases, agents are presumed to have a certain pragmatic power, as in all deliberative and communicational models, and this power is directed toward a normative framework intended to guarantee the successful implementation of interaction between agents. Reflexive governance ultimately aims to diverge from this specific fundamental point: first, the power in question should not be presumed to be available as a ready-made and actionable unity, and second, no normative framework has the ability to guarantee the success of a proposed interaction plan.

Reflexive governance aims to develop institutional attention in two directions: first, a consideration of the resistances and obstacles that prevent a transformation of relations to action identities; second, a critical examination of overinflated expectations with regard to the power of norms to ensure or guarantee identity transfers linked to the redefinition of roles and functions. The simple idea that, in order to activate and orient a capacity for change, one should convoke all those involved or concerned (in the broadest sense possible) and organize interaction modes around, for example, shared problem solving, the reformulation of preferences, or even efforts to generalize interests through precise discursive procedures – this idea critically misses the backward-looking inferences produced by beliefs concerning identity, which drastically limit the scope of possibilities deemed operationalizable. As a means of maintaining their self-identity, the actors in question re-evaluate new possibilities through this backward-looking lens, selecting those that seem to promise a power of reiteration. This restriction by focalization, left aside in deliberative and participative approaches, is what reflexive governance aims to avoid through its construction of social attention.

4.3. Deconstructing governance narratives

One might wonder whether the elements to “govern” using a reflexive approach are the same as those that are generally only subject to *post hoc* sociological attention, with the aim of understanding the recurrence of actors’ identity rigidification or the ways in which it may be overcome. Several examples highlighted by Donald Schön in relation to intervention practices may, at first glance, appear to confirm this judgment. Schön notably considers the evolution of the relationship between professionals and their action identities, such as the action identity of permanent members of a consumer association or that of agents in a public health monitoring institution [SCH 96]. In both cases, one fundamental element of such an identity lies in a capacity for responsiveness and vigilance with regard to the environments, which these professionals are supposed to monitor or control, in order to defend either the public interest or the interests of their own mandates. Collaboration with the environments in question thus appears to go against this identity, as the primary aim is to achieve a distance from their existing practices in order to evaluate them from a totally independent position. The idea that cooperation might add value for all parties in question thus appears unrealistic; cooperation would imply improper collusion, adopting as one’s own the interests of those actors who are supposed to be subject to independent judgment and arbitration. From this perspective, collaboration with producers to improve quality labels for the benefit of consumers, for example, would be unthinkable without selling one’s soul to the devil. A concerted approach to defining accreditation procedures in association with government agencies, in order to increase the transparency and efficiency of information procedures for public policy decisions, would also be impossible. These roughly drawn examples are characteristic, insofar as they may lead to sociological readings of the relationship between groups of professionals and their identities. Different modes of fixation may be seen, which may evolve in a generational manner and lead to intergenerational conflicts, through which institutions appear to evolve despite these fixations, moving, for example, from militant intransigence to a proactive attitude promoting the diffusion of ethical values. Semantics are modified, the language of combat gives way to that of collective responsibility, criticisms give way to propositions, defensive attitudes are transformed into constructive approaches, etc.

Schön and Argyris [ARG 78, ARG 96], along with other authors cited above, such as Innes and Booher [INN 03] and Laws and Rein [LAW 03],

focus instead on acting on processes in the present, rather than interpreting them retrospectively along the lines of generational adaptations. From this perspective, a particularly decisive element in the cited examples is the thematization of attention through narrative focalization. A gap is depicted between a rigid attitude toward identity beliefs and the possibility of challenging these beliefs in order to experiment with another way of acting. In this situation, we are not overly concerned with whether this new way of acting might be better, automatically guarantee an added value, or produce more satisfactory results. The gap allows us to thematize attachment and detachment as two mutually dissociable functions, whereas the scenario based on identity and independence combines and confuses the two components: attachment to an identity seems to simultaneously guarantee the independence of action. Thematization raises the possibility of a more detailed history of what is happening in the course of action: the pathway of identity attachment is different from that which involves detachment from those beliefs that, along the first path, contribute to repetition. The gap must be thematized in order to intervene, and an awareness of a possibility of bifurcation, offering new modes of action, is also necessary. It is essential to differentiate between the moment at which we become aware of a gap and the moment at which new ways of acting are assessed; otherwise, the potential to work on these elements cannot exist without them immediately appearing as a favorable or prejudicial ideological choice. In analyzing these new ways of acting in this view, the issue is less with the legitimacy of a choice for cooperation than with their real or imaginary strategic contribution. These ways of acting may then be fairly assessed, without necessarily offering guarantees with regard to innovation and change.

For an approach in terms of reflexive governance, the thematization operation, which is highlighted in cases of collaborative rationality, deliberative policy analysis and even frame theory, does not simply relate to an external intervention with the power to generate awareness in those concerned and to engage actors in a process of self-analysis. The thematization process does presume the activation of a collective intelligence process, but the object of this process is not the creation of awareness as such, nor the production of a gap by narrative focalization, as mentioned above. Reflexive governance is situated on both sides of the gap. It has both a preparatory function and a monitoring function with regard to the thematization operation. The preparatory function consists of deconstructing the pregiven relation to an action identity on the basis of a perspectivist approach. None of the given roles is monolithic; each situation is woven

through with different social interests, and different perspectives and types of knowledge are intermingled. Actors participate in the balancing of an unstable plurality of action logics and are able to benefit from this equilibrium, something that often leads to a preference for conservation over taking risks on a new approach. In identifying and listing these plural logics operating through each actor, any univocal relation to action is suspended in order to create an intelligent context for constructing action balances. This is a means of putting the collective to use as a necessary operator for innovation in the production of modes of action. The monitoring function of reflexive governance lies in accompanying the institutional translation of operational consequences drawn from the thematization of a gap and a possible bifurcation of modes of action. This is the extension of an action on ongoing action modes at the level of collective programming and role distribution.

What still remains is the crossing point, which is located outside of the framework of an external intervention but depends essentially on the incentive framework offered by the preparatory operation. This crossing point depends directly on the way in which the institution governs itself, i.e. the space it makes available for the power of experimentation and for challenging existing practices. In this specific case, convocation, used alongside a rule of deliberation or concertation, would be utterly insufficient. The matricial function of language alone is not enough to allow for the adjustment of new regimes of exchange and cooperation. An enunciation can never be separated from given sets of references and a set of preconceptions, which limit the capacity for innovation. The challenge is precisely to destabilize this relation to the predefined matricial order whose functions of argumentation, justification and semantization simply constitute a trace and a translation in order to open up the pathway to a shifting power operating within a different, non-matricial or linear dimension. The source of this iterative power lies, in our view, in actors' relation to the self as a structure of subjectivation, and thus as an unstable and permanently incomplete equilibrium of a positioning power in a situation [MAE 15b].

To clarify, the reference to the matricial power of language is not limited to presuming – as in the case of linguistic individualism – that speakers possess a capacity for enunciation. Here, the presupposition concerns a much broader power of the space between the selves of those actors in communication; this power is suspended in order to retain the form of a framed interaction between linguistic units alone. However, the interself

power that both precedes language and goes beyond it forms the basis of actors' force of relationality. The power of iteration results from this relation to relationality. In the same way that the expected roles rigidify the interself power into a repetition of the same action scenario, the adoption of unexpected roles holds the key to emancipation from action scenarios locked into a process of repetition. In this case, that which we call the "structure of subjectification" is a manner of creating a relational linkage in a situation, allowing for identification with a position in favor of a common interest. There can, therefore, be no "common interest" without subjectification, resulting from a relational coupling.

The challenge for reflexive governance is thus to promote the creation of new relational stances, drawing on the interself power of the actors involved. The object of thematization is thus both the determining interest of the relational strategy and the place it takes in the ongoing action process. Using this thematization operation, we aim to gain a clearer understanding of the stance underpinning the production of relations, what is taken for granted to be at the root of these relationships and which leads to a logic of repetition, the certainties which orient retrospective anticipation, and the selection of behaviors that are believed to offer guarantees for the future.

Once again, sociological approaches are valuable for *post hoc* evaluation of the way in which certain relational matrices are established, but the question of reflexive governance is more concerned with ways of preventing or deconstructing these rigidification processes. The "structure of subjectification" emanates from the connection, which is created between a relational act and a position in relation to a common interest. The question of what means becoming a subject supporting a common interest is at stake. In this context, the thematization process highlights the limitations of binary models of association, which limit relationships to a correlation of terms, a form of addition in which identity functions are always taken for granted. Each term has its "other": inverse, opposite, complement, etc. In order to consider other modes of relationship, we need to break free of this mirroring process and indirectly consider the effect of a shift, which would modify the relational matrix. In reality, this matrix also has the capacity to dissociate and reassemble, combine, connect or even compose. The decisive question in this case concerns the "supplement" needed in addition to binary relational models, a decentering of attention toward supplementary terms in order to permit a redefinition of the whole relational matrix.

4.4. Examples of *post hoc* thematization of relational decentering

This type of decentering phenomenon may be observed in hindsight, notably in cases where an action identity expands and reassembles itself in response to the integration of an interest, which was incompatible with a binary approach to the function. In the history of traditional union organizations, for example, the relation to environmental questions has always taken a back seat in relation to a seemingly obvious identity function, the defense of workers' rights. However, even seemingly obvious elements are not immediately presented in useable form: the assemblage of workers' interests and the protection of employment was the result of a long process in an industrial context, where job security could only be assured in conjunction with the development of productive activities, seen to be more important than preoccupations concerning the risks to those living in the vicinity of the place of operation. Evidently, from a sociological standpoint, these identity fixations took place within societies based on the representation of measureable, and thus collectively controllable, risks. We might consider, following reflexive modernity theory [GID 94], that the modes of action changed when the consequences of this mode of development came to be seen as unmanageable, and the collective cost began to outweigh the benefits produced. However, are systemic constraints sufficient to provoke innovation and useful changes to a mode of action? Might we not, on the contrary, be tempted to persist along the same lines, attempting to exploit these constraints to our advantage? In practice, the attitude of traditional unions was not modified by the emergence of environmental awareness. The deregulation of the traditional economic system, the loss of traditional reference points in sensitive domains such as energy, water and transportation, and the modification of certain branch privileges in services and in public administration triggered change in traditional unionism [MAE 10]. Even in this case, however, creativity cannot be directed from the outside. In order to innovate in terms of a relational identity stance, we need to be able to project onto a new field of action and clearly envision the transformation of a relational matrix, instead of simply patching up and attempting to salvage existing models.

Innovative transformations may occur within very partial collective action sequences: for example, an organization may attempt to set itself apart from others, as in the railroad sector in France, notably in relation to a specific profession [BOL 99]; an organization may also attempt to harness the opportunities presented by a new piece of data, abandoning practices

linked to the unionism of public services to evolve toward a unionist alliance with users. Certain unions within the electricity sector in Europe have taken this approach [LEN 09]. Union types with lower social visibility may, as in the wood or water sectors, attempt to ally themselves with the broader interests of a population in order to act as catalysts for change, gaining greater visibility and renown. The difficulty of governing these partial sequences of collective action lies in the effective capacity of a new relational posture to catch on. Between the predefined identity and an identity that seems possible and potentially useful to acquire, a radical form of modifying the relation to relationality risks remaining beyond reach. It does not concern *what* one may do, or with *whom* it may be done, but rather the structure of subjectification that must take shape through this process of relational coupling, changing the manner of establishing shared challenges and defining a position. There is nothing easy about this operation of self-rearticulation through alterities newly endowed with a power of dissociation³. It is, however, the key element of reflexive governance, introducing the capacity to accord attention to an *interest for interests which are left aside*, or forgotten, in mirror-style fixation processes⁴.

From this standpoint, the most interesting rearticulations are those that attempt to build a bridge toward a blind spot for the action identity of the organization, for example, those that attempt to branch out toward the issue of quality of life outside of work from the standpoint of the quality of life at work; those which aim to connect sustainable regional development with sustainable development in a localized production activity; those which destabilize productivist planning to the benefit of a short-loop approach and local participation, etc. However, efforts of this kind can only really become generalized and stable within new equilibriums if their governance is able to

3 Unlike “other regarding” unionism, which may still consider itself to be a major agent in social dialog, and count on a ripple effect on secondary actors as a result of these demands [OFF 03].

4 Christophe Dejours’ research indicates a genuine breakdown of solidarity with regard to the sufferings of others in the course of evolutions in the world of work; this point is very close to an aspect which we have approached from a different angle [DEJ 10]. Negatively speaking, it draws attention to a loss of interest in common elements, which has opened a gigantic rift in the relational matrix of solidarity previously present in the world of work in France. Dejours also puts his finger on the difficulty for a determined identity structure to self-manage the transformation of its traditional modes of attention and to create a new form of concern for work-related suffering. In this case, there is a fundamental omission of action on *interest for that interest*, and this gap cannot be filled by reforms in employment law, which is simply the translation of interest for that interest once it has taken shape.

support and maintain the required internal reorientation and redefinition work. This issue does not, therefore, relate to partial and sporadic initiatives, but rather to processes transforming the modes of entering into relationships: a rearticulation of the power of social innovation.

David Laws offers, in our view, one of the best identifications of a process, which is characteristic of this type of rearticulation [LAW 03]. Laws focused on defining the conditions of its semantic emergence based around the central issue of understanding how, at a given moment, the argument of “ecological racism” in the United States came to be commonplace [LAW 03]. This event is connected to a very specific context, that of the geographical distribution of toxic waste across the territory of several American states, and the consequences of this choice in terms of public health and discrimination against certain populations on the basis of their revenues and origins. It gradually became clear that there was a disproportionate installation of these waste dumps in socially and ethnically marked – poor, black and Hispanic – populations. Furthermore, the health risk evaluations carried out were shown to be unsuited to the real risks to already-fragile populations. Environmentalist organizations were the first to note these risks and to attempt to raise awareness. However, without the involvement of civil rights movements, the fight would never have gained the same amplitude and obtained the same level of federal attention. Its success resulted from a double transformation of identity. Laws approaches it in semantic terms: the construction, by militants from both camps, of shared meanings, an increased capacity for interpreting situations and problems thanks to a novel heuristic framework, and a redefinition of the meaning and objectives of the combats carried out on each side. This meeting between the two groups was by no means easy or bound to happen due to the level of initial differences. However, the necessity of finding points of contact between researchers and environmental investigators, on the one hand, and a population generally motivated by other issues, on the other, allowed elements to be named differently. However, Laws also notes clearly that the issue is not purely semantic: identities were rearticulated in order to act from a new shared foundation. The blind spot in Laws’ analysis lies precisely in the pragmatic process of transition, which is not simply produced by the constraint of seeking common language, but by the space accorded to *an interest for the unseen interest* on both sides. This thematization of interest is crucial, and the groups and discussion methods that may result from it are secondary. Focusing on this specific moment, we move away from the encounter between environmentalists and civil rights activists in order to consider, in this scenario, the place of the population, which ultimately

dissociates the two orders of action (environment and civil rights) as they are not affiliated with anybody. In order to attract the population to the common cause, a connection must be made to the public order, changing the level of action. The problems of language and semantic creation are posed according to this action. The tipping point is thus situated, very specifically, in a moment of governance where each organization is able to take account of *a relationship of dissociation with the public, without associating it with a competitor, but considering the power of this public within a space to which access is conditioned by a new type of partnership on the plane of action.*

This dissociation creates an opening for other action-related content, creating links with other collective actors, and it also leads the power of those concerned to deploy itself in varying fields, as this power is in no way related to their mandates. Returning to the example of unions abandoning their culture of public service in favor of an alliance with users in a new context of regulation, we must also consider a more radical tipping point within this sequence: the dissociation of a union identity and its traditional object, i.e. productive activity and the jobs which it generates, to the benefit of interests situated outside of the labor market. These interests are those of a public of users, viewed as consumers more than clients, who are indirectly dependent on the development of healthy and durable competition in the sector for their safety and well-being. A union identity may evolve through this operation of dissociation; it is no longer limited to the performance of an isolated activity to be preserved from the hazards encountered in a context (as in cases where workers' organizations support the continuation of an activity through public assistance in order to preserve employment), but is, instead, concerned with acting in favor of integrating their activity into a more general development plan, taking into account the interests of the majority and of the weakest elements. The object of negotiation used as a basis for union identity is no longer the protection of corporatist interests, but rather the integration of an equitable approach to sustainable development [MAE 10]. Without governance of this element of rupture in the action identity, corporatist interests would take over once again. This issue is recurrent, as it plays out in different sectors following successive attempts at deregulating and "re-regulating" practice.

One particularly interesting example within the union context is that of the banking sector. Following a series of financial crises, public authorities made a number of attempts to improve regulation, notably through the justifying prism of ethics and transparency in the implementation of stricter

deontological codes. The reaction of administrators was immediate: the inflation of ethical regulations has a significant transactional cost and could be expected to lead to job losses in the sector. The expected response from union representatives was to pass on the risks presented in works councils to their organizations following the European injunctions. Multiplying control standards to promote good practice appears to be a particularly daring policy in the context of global economic slowdown, and faced with the choice of a deflationist policy pushed through by the central banks. However, a doubt remained with regard to the approach to take: should majority shareholders be supported in denouncing policies of sectorial control, at the risk of losing all credibility in the eyes of the public, which already considered the sector to be mostly responsible for the existing situation? In any case, the economic situation already required the implementation of restructuring plans and job losses. How, then, should public opinion be mobilized in relation to this consequence of the crisis on the banking sector and its workers, while working with directors to minimize the new monitoring constraints? In this case, dissociation was clearly essential, but would a distinction between owners and workers, the annuitants benefiting and the employees suffering from the crisis, be sufficient to produce this dissociation? A strategy of this type might be fatal with regard to the salary-related and financial advantages previously negotiated within the sector. The challenge was not to obtain a dissociation from the sector and its directors, but rather to dissociate from the self as a social stakeholder in the sector, on the basis of other social expectations than that of the protection of privileged jobs without consideration of the social cost of these positions, which was previously dominant. A shift in attention was needed in the governance of union representation in the sector toward interests, which had previously been ignored but which proved essential for the activity to durably persist. These interests may be symbolically attached to a positive or negative public image of workers in this sector, but the desired change in attitude was primarily dependent on the capacity to translate the interest of increased control of the sector, and thus the consideration of norms to “clean up” the activity, into terms of union action, as in the context of environmental norms. The element undergoing transformation was therefore the way in which the norms in question formed part of an action identity, as was the case, at one point, of social law for the protection of workers’ rights in specific sectors and branches of activity. In this case, norms are no longer responsible for protecting and developing the effects created by the activity; their function is more to protect the collective from these effects, and even, up to a point, to

protect the activity from itself. While the first type of norms (redistributive) can be easily integrated into cost/benefit type calculations, this is not the case for the new type of norms (preventive, but seen as being linked to external elements) whose consequences are less direct and result, first, in a transformation of collective practices, via the effects of preference alignment, before bearing fruit. There is thus a need to dissociate, within the union context, from a relation to norms as a guarantee of results in a real context, and to accept the uncertainty of mediation by the common interest. The governance of these dissociation processes is crucial.

While many questions were raised in the early 2000s regarding new collective action modes – related especially to social networks, but also action modes aimed at shaking up old bureaucratic structures inherited from the social state and the world of industry, and those concerned with direct action or actors' need for proximity – what arose as significant was less the collective capacity to vary action modes and forms of resistance than the way in which these elements are governed, i.e. directed and incorporated into organizational processes with the potential to modify modes of social reproduction in the long term. From this perspective, the question is not limited to issues of self-structuring actions with seemingly innovative modes of production. Critical thresholds of interaction with the existing system are reached, and appear to always involve strategic choices between different available rules of action: maintain a position of radical dissent and denunciation; only ally oneself with similarly radical groups; reach an agreement with the existing powers in order to access the levers of decision; aim to work through positive influence rather than disagreement; demand a piece of the power in order to represent divergent orientations; cooperate in order to redefine an overview of mechanisms giving a recognized position to the challenges in question, etc.

On this point, Daniel Cefaï [CEF 07] cites a conflict within the ATTAC alter-globalization movement in 2006, relating to the election of an administrative board, over whether the intention of the group should be to create an entity capable of participating in political campaigns at a national level, or to prioritize internal pluralism, with a more flexible, open structure. Party logic appears, in this case, to be in opposition with consensus logic; Cefaï goes as far as to draw a parallel with the opposition suggested by Sheldon Wolin in 1960, between the sect as an emerging movement and the Church as an “authority structure” [CEF 07, p. 343].

Meanwhile, Callon considers the HIV crisis and the creation of the interassociative TRT5 group [CAL 01, p. 255]. Once again, there is an opposition between rigid identities and cooperation with power structures. According to Callon, the opportunity created by the establishment of an independent administrative control agency (the ANRS) was required in order for associations to overcome these tensions and to reach a state of coordination, especially when faced with the power of the pharmaceutical companies. He compares this decisive moment in the social response to the AIDS epidemic with the process of institutionalizing myopathic illnesses' struggle for recognition. In the second case, the negative reaction of public powers to the creation of a space for debate slowed the process of federation among the associations in question, and led the Association Française contre les Myopathies (AFM) to act in isolation through the media in order to gain legitimacy [CAL 01, p. 259]. For Callon, the implicit rule of action is clear: "It is pointless to organize debates or to launch collective research processes if there is no available mechanism through which actors may leave their private sphere, if no space for confrontation may be accessed" [CAL 01, p. 260]. It seems evident that an administrative agency might play this role by promoting the alignment of preferences in pursuit of an accrual of collective benefits.

However, considering the TRT5 process, as described by Janine Barbot [BAR 02], along with its position in the ANRS as an interassociative work group, certain governance issues that have not been picked up in retrospective interpretations become apparent [CAL 01, p. 270]. The cost of governance for the different organizations confronted with TRT5 was non-negligible. Some adapted and reorganized themselves in order to occupy the new space; others went through an internal crisis, breaking away from the movement, as in the case of the Positifs association [CAL 01, p. 245]. For those organizations that were able to meet the challenge, such as Act Up, the organizational model chosen by Positifs – the use of a community of experts and experimenting patients [CAL 01, p. 246] mobilized around a molecule such as tetrahydroaminoacridine (THA) – was seen as obsolete. At the same time, however, the connection with militant doctors and the paramedical contexts involved in Positifs was, more globally, modified in favor of increasing the presence of the pharmaceutical world and setting up discussions on the approval of molecules and the organization of therapeutic trials. The characteristic element of this situation seems to lie in the fact that the only governance choices, which were actually implemented, were those concerning patients' rights organizations, showing the strategic consequences of certain identity-related obstacles in cases where more flexible and more open options

appeared to guarantee better results. Janine Barbot's results remain ambivalent in this respect, as she clearly highlights the interest of maintaining a plurality of identities, allowing for a diversification of interactions with existing powers, some directly focused on the state, others on the private interests defended by pharmaceutical companies.

However, these identity anchorings also have direct consequences on choices relating to research framing, on ethical criteria which must be applied, on patient interest, on the transferability of large-scale clinical tests, and thus on other countries with very different public health and economic situations to those encountered in France or the United States [CAL 01, p. 248–249]. It is, thus, surprising that the other side of the question of governance, that of public and private correspondents, has not been addressed. The work on identity that threads its way through these transformations of social problem solving is fundamental, to the point where it may either impede change, or promote a higher quality of interactions in public, private and community logics; why, then, is it not also brought into question in terms of the identity transformations required on the part of public decision makers and private actors? The governance of identity transformations is decisive with relation to the associations concerned, as, even within inter-associative groups, their fundamental contribution remains linked to the common orientation, which they maintain in their intervention with other partner associations; furthermore, it is also decisive with relation to the public and private actors who are confronted with new capacities for proposal and influence, coming from those actors who are directly concerned and the solidarity networks that they create, on a basis different to that of traditional social concertation, with its defined roles and functions. It seems that, on the contrary, it is necessary to envisage co-construction processes for communication mechanisms that would allow actors to mutually adjust their community identities in order to act with other action identity structures, which themselves need to adjust. The specific question of governing this identity variation process remains, in our opinion, untouched by these "*post hoc*" sociological analyses.

4.5. Shortcomings of thematization

As we have seen, a detailed observation of the process by which action identities change and roles adapt is not enough to fully understand the specific requirements of reflexive governance. Multiple observations allow

us to represent transformations and to go back over the evolution of roles in the course of action, particularly in terms of their contribution not only to the solution of a problem, but also to the manner of solving it. Often, this involves highlighting the particular contribution of groups of activists, or associations of private individuals concerned by the problems in question: through their action, they may succeed in destabilizing expert knowledge and redefining the place of non-experts in evaluation, analysis or even knowledge production mechanisms. However, the issue lies less in knowing whether or not an active minority may force the solution of a problem through its strategies and even contribute to innovation, and more in knowing what type of governance of problem solving may allow us to move past a deficit in the strategic and cognitive capacities of established collectives, reconstructing them in accordance with the situation. Rather than counting on the often tragic heroism of active minorities, most of which are unknown because they have abandoned the cause due to a lack of means or of perspicacity, it would be better to inverse the question, taking the blind spot indicated by a small number of successful and sociologically recorded experiences as an alternative starting point.

In an article on transformations of associations connected to AIDS, Janine Barbot briefly noted that one result of the interassociative grouping (TRT5) was the “subversion of the pedagogical relationship which their interlocutors wished to establish” [BAR 01, p. 62]. This remark is particularly significant, as it indicates not only the presence of learning within the associations in question, but also a swing toward governance objectives on the part of the public operator and participating private companies. According to Barbot, the creation of an administrative control agency was not only intended to create a space for coregulation allowing, following the French model of higher monitoring bodies, for the production of “hierarchical coordination” (the Coase Theorem), but also aims to produce a consensus regarding controlled therapeutic tests and access to new molecules, retaining mastery of methodological rigor as a reference framework for discussion. This also implies using the coordination space created with the interassociated workgroup to “instill – following an educational approach – the imperatives of methodological rigor” in participants [CAL 01, p. 246]. In effect, science is used as a tool for constraint and as a basis for consensus, as in engineering strategies in the electrical sector. A rule for the optimization of collective solutions is thus taken as given for private and public actors, and determines the governance

of the established concertation mechanism, the contribution of what Barbot called its “educational function”.

In this case, the key question concerns public and private actors’ blind spots that need to be compensated for or corrected. It relates to the fact of governing research as if a pre-given rule could ensure the success of a social intervention, with no attempt made to adapt prevalidated general knowledge to the contribution of specific knowledge resulting from a new distribution of roles between truth holders and solution receivers. The challenge is to create a framework for the coproduction of solutions on the basis of the plurality of viewpoints involved. There is therefore no predefined solution rule, and this must be co-constructed in relation to each specific situation. Above and beyond this mental preparation for shared solution seeking, and beyond the promotion of attention with regard to the identification of contextual markers (actors, points of view, divergent interests), the issue lies in the governance of the co-construction process. This does not mean that a meta-rule of action should still be used as a last resort; in the absence of certain determination with regard to required acts, however, the reflexive approach offers the only means of orientation, through a form of practical inference, working step-by-step to combine confidence in the power of resolution with hypotheses treated as indices of possible progression. The challenge is to test the possibility of progression on the basis of sequential links between beliefs and ideas. This linking operation is a synthesis, and the progression toward a solution for reflexive governance results from a sequence of syntheses. By following the construction of this sequence, we may seize the opportunities offered by moments of dissociation or by swings within the interaction between roles, rather than simply noting beneficial or hindering effects after the fact.

As an example, consider the public health case studied by Callon, Lascoumes and Barthe in Woburn [CAL 01]. The situation in question was dramatic, concerning abnormally elevated levels of infant mortality from cancer in one county in Massachusetts. Through the persistence of groups of parents, privately obtained expert opinions were able to identify the presence of trichlorethylene syndrome thanks to support from a program at MIT [CAL 01, p. 115–117]. For Callon *et al.*, this provides a perfect example of a hybridization process between “pure lay knowledge and pure laboratory knowledge” [CAL 01, p. 116]. In this case, lay knowledge forced expert

knowledge to leave its “sterile bubble” and to take accounts of events that had been ignored up to that point [CAL 01, p. 120]. The interest of these examples lies less in the new role adopted by the collectives in question than in the problem-solving process, or in the process of making problems visible and the “primordial accumulation of knowledge”, with the potential to create an alert. The example above is particularly interesting in terms of what would, in all likelihood, have happened without the opportunity created by the persistence of activists. The initial reaction was to eliminate the problem, considering that, on the basis of established knowledge and rules, it simply did not exist. *This reaction brings the governance process guiding the solution-seeking activity into question.* There is thus a risk of ambiguity if the example in question is treated by simply adapting the process, with the addition of an alert and consultancy function assigned to a new group of actors with whom the existing participants must learn to cooperate. In this way, it would be possible to benefit from the shared interests of the parties in question and from the detachment of experts, hence from elements of proximity and distance, in order to co-create new solutions. However, this approach may be seen to retain the function of expertise, revalorizing it through its capacity for translation; one might wonder whether specialized research can truly be “vascularized by lay research” [CAL 01, p. 150].

Callon *et al.* clearly offered innovative mechanisms for the organization of research in such a way as to enable new forms of cooperation between “lay” and expert knowledge. At best, however, they attempted to validate the role of lay knowledge, also reinforcing the popular belief in the performativity of expert knowledge and, furthermore, the idea that experts possess an intrinsic capacity for developing new rules of action, allowing them to adapt to the social consequences of new technical environments. Expert knowledge is characterized not only by its performance in terms of generalization (its impact [CAL 01, p. 150]), but also by its capacity for methodological innovation and adaptation to new forms of uncertainty. It thus retains a monopoly over the proposal of rules in response to the pressure of social demands, and redefines the models of rational choice and the rules of organization for problem solving, including those pertaining to fairness. This is a heavy load to bear for a form of knowledge with a known tendency toward willful blindness and whose ineffectiveness has only come to light through the heroic resistance of interested parties.

4.6. The five stages of reflexive governance in identity processes

We began by concentrating on the reflexive governance operations both upstream and downstream of institutional problem-solving processes. The main challenge is located ahead of the process, in the implementation of a “collective attitude of vigilance”, responsive to the contingent and transformable character of action logics, following a process of identifying the interests involved and acquired habits. In the wake of this process, the issue concerns drawing attention to monitoring operations resulting from the reflexive process, notably in terms of the redistribution of roles and leadership missions. The central operation of reflexive governance, directly regarding the dissociation effect and the rearticulation of action identities on the basis of selected relational structures, remains to be defined. Between a given identity and a projected identity, there is a way of modifying relational choices that can change the way in which common challenges are expressed, giving weight to the interself power by accepting the dissociating effect of otherness. To define reflexive governance, what we observe *a posteriori* must be constructed within the heuristic movement of its own performance, as in the decisive attempt to bridge out from the normativity of identity action. As we have already shown using various examples, this movement itself can only be approached as a series of steps allowing us to test the genesis of a new identity synthesis. This synthesis – the object of the test – must allow the relation between the belief in a common interest and the idea of a solution to identified problems to be built on different foundations.

The effective challenge for reflexive governance is thus to guarantee, guide and check a process of identity creation. Its institutional function consists of allowing the transformation of action identities to be supported, in such a way as to increase the efficiency of participative engagements in decision mechanisms, whether public, private or associative. It must, therefore, carefully follow a precise genetic sequence in order to guide the synthetic dynamic in both its global and discrete (step by step) aspects. Understanding the identity transformation sequence, as well as its synthetic dimension, is thus critical.

Using the examples presented above, we have already attempted to give a partial outline of the sequence in question. The action identity is modified according to a relation to reality. The first step, which plays a decisive role, is the identification of a reality that has been missed; this step lays the groundwork for establishing collective vigilance and identifying the different

action logics involved, including those that appear to be dominant or subordinate, alongside those that are obliterated, marginalized or ignored. There is no *a priori* logic for what is lacking, which assigns this issue to a minority logic. The key element is how the perception of what's lacking is distributed among the collective vigilance. How do we see what is lacking? And according to what distribution of the different identified interests? In this case, the idea of an ideal solution is dissociated from the perception of the common interest as a real element marked by something lacking. Known identities are related to, and attempt to become integrated into, this initial situation. This is the real synthesis of identities, the starting point for the creation of another possible identity, initially understood as a power of reiteration in response to something lacking.

The second step puts the perception of what's lacking in tension with the impossibility of its fulfillment. It involves identifying the precise imaginary constraints to which the identities of different actors are connected. All of the action rules intended to guarantee an equilibrium related to something lacking, and which refers back to the necessity of preserving a unity of action that must be possible to reiterate, arise from these constraints. This is the imaginary order of the status quo, including a defensive line that allows us to define different parties' adjustment power and to separate the negotiable from the non-negotiable, the acceptable from the unacceptable. It provides a second synthesis of an imagined identity with the idea of an equilibrium obtained through adaptation to something lacking and thus constraining.

The third step shifts this distorted relation to what's missing toward the cathartic function of a truth outside of the self. It makes use of a symbolic third party to formulate an economy of action different to that of the prior equilibrium, in such a way as to move beyond the imaginary relation to the real in which the action is trapped when it is carried out exclusively on a pre-given identity basis. The relation to the third party permits a first shift in identity, according to a recomposition of representations of the milieu. Symbolic translation opens up a complementarity of perspectives and the possibility of cooperatively using the different identities in question. This step results in a synthesis between the belief in a power of equilibrium in relation to something lacking and the idea of a cooperative transformation of constraints. This time, identity is no longer a power of reiteration, but gains awareness of its power of iteration.

The fourth step modifies the initial perception of the relational order, originally seen as a set of imaginary constraints to incorporate (step 2). It involves taking account of other interests with regard to their power of dissociation from one's own interests. The interests of other groups do not only appear as an element determining an imaginary posture toward a constraint, which must be satisfied or done away with. These interests have an internal impact on the iteration power of the specific position of the group that takes them into consideration. They create an internal distance in relation to the group's own interests and to their habitual interpretations. This reference, incorporating the relation to a dissociating collective, allows us to challenge the idea of a pre-given rule of interests, which must be protected in order to ensure survival. A new synthesis is thus created between the belief in identity's power of iteration and the idea of a supplementary element, introduced through a relation to other identities.

The fifth step is that of identity iteration itself, i.e. an attempt at repositioning within an action, in accordance with the mediation carried out by the uncertainty of a common interest. The belief in supplementarity may thus be connected to the idea of a new and novel solution, involving a modification of roles and the requirements that must be satisfied for each of the parties in question. This fifth step is decisive, in that it allows shared action to be "relaunched". This moment is not only the result of an accord or equilibrium between parties, nor is it a manner of adapting to a compromise through the revision of expectations, as these procedures, too, may simply constitute the means of repressing obstacles, only for them to reappear later. A relaunch of shared action, in the strictest sense of the term and benefiting from a process of identity iteration, is only possible through a synthesis of syntheses, i.e. a translation of the series of syntheses into the ideal form of a unified process, connecting belief in a shareable capacity for iteration with the idea of a process carried out together. This synthesis creates the power to renegotiate a new relational map, subject to testing in the course of action. It thus shifts collective attention from the transformation process itself to testing the results. This is neither a theoretical shift in representations, nor a transformation of the practical relation to specific interests: instead, the aim is to extract lessons, and thus to learn, in concrete terms, from a recomposition of the relational matrix that appeared to fix and guarantee roles.

These five steps create an abstract and concise working program in relation to a series of implicit actions that must be both untangled and

elucidated. Each implicit action present in an institutional collective searching for a solution participates in the formation of identity obstacles and in encouraging the repetition of known solutions. These need to be separated and interpreted in order to permit revision, then reorientation, before stabilizing the new capacities in a continuous process of reflexive governance of these resources.

Steps	Phase of intervention	Target operation
Step 1	Diagnostic phase	Connect perceptions of something lacking to the different action logics that may be present (defensive approach, preferential interests, etc.)
Step 2	Interpretation phase	Transform these perceptions into imaginary constraints connected to identities looking to preserve themselves
Step 3	Interpellation phase	Recognize the possible impact of a representation of challenges and possible strategies allowing for new combinations of existing interests
Step 4	Translation phase	Transpose the hypotheses of symbolic change identified in step 3 onto the level of imaginary constraints linked to identities; these hypotheses lead to a possible recomposition of the relational matrix, with a different distribution of roles in the collective.
Step 5	Engagement/renegotiation phase	Relaunch action via attention to the non-identity of the self, which allows us to test other relational matrices, without being subject to the self-guarantee rule of a pre-given identity

Table 4.1. *Five steps of reflexive governance*

Work is, thus, carried out on two transformation pathways simultaneously: the relation to the self, which constitutes the supposedly given identity or the interest in non-identity; and the relation to others, which constitutes a set of fixed roles or a redefinable relational matrix. At the same time, this process allows for the progressive construction of collective attention, which is necessary for the governance of the new type of commitment that it aims to infer.

In reality, this sequence of five moments of synthesis also plays a dual role in terms of attention in reflexive governance: first, it mobilizes attention; second, it transforms attention. Its operational objective, as a mode

of social intervention, is to implement social attention for the purpose of transforming it, i.e. allowing it to move from a first level capacity of concentration or focalization (playing on external or internal positions) to a reflexive level, that of self-thematization, or attention to attention, i.e. second-degree attention to the process made possible by a series of moments produced by shifting first-degree attention. Through this attempt at focalization, then shifting, attention progressively becomes a reflexive activity in the strong sense of the term, and is thus ready to support the specific test encountered in step 5, which examines the result obtained by the process of shifting attention to the self as a power of guarantee, faced with the perception of reality as something lacking.

Reflexive governance, thus, consists of a coordinated action relating to the construction of collective attention based on the problem-solving processes, which exist in organized groups, whatever the initial nature of the organizational modes of these groups, as long as they attempt to collectively produce solutions with regard to the constraints of their environment. This form of governance might be subject to an internal process of reform of the collective action modes of a group, or, equally, become a tool for the critical analysis of suboptimalities resulting from this process for beneficiaries or the members of the group in question. The approach in terms of reflexive governance is therefore decisive for taking on both habits involving non-reflexive internal adjustment modes and the absence of any capacity to support and examine adjustments imposed by new situations. It may create a framework for the practical reorientation of self-analysis methods, offering new proposals, or create the internal or external space needed to find new ways necessary to push through obstructed pathways. In a highly complex context, with long reform processes involving multilevel dimensions, referring back to different game strategies, reflexive governance has an integrative advantage in the long term, insofar as it takes into account background effects on the identities of participants and on their cooperative capacities according to indirect results, depending precisely on the evolution of behaviors across different levels of play. Reflexive governance thus allows us to shift attention onto preference alignment effects which lie outside of the standard framework of optimization and cost/benefit calculations. Instead of connecting these effects to questions of a coordination framework, regulating actor engagement from the outside, it promotes the identification of a process of work on the self by actors during the action, making good use of the way in which their beliefs and identity resistances are confronted. Actors are never, therefore, considered to be

permanently defined in the processes concerning them; instead, they are equally susceptible to change or to blockage and repetition when faced with involvements whose outcome is *a priori* undetermined. *Reflexive governance is fundamentally aimed at giving priority to the management of processes' indeterminacy, which arises from the non-identity of its actors.*

Let us return to the different examples mentioned in passing. Can we, then, issue an appeal for change to any given institution – unions, for example, as well as consumer groups, farmers associations, environmentalists, public action in any domain, private–public partnerships, etc. – as if it were possible to simply wave a magic wand? Clearly, the majority of actors, experts or otherwise, consultants or agents involved in these activities are not naive. The most intelligent position often consists, on the contrary, of identifying ongoing transformations and attempting to further some, modify others, or potentially put a stop to tendencies that appear to be potentially damaging in the long term. This type of stance is barely more effective than that which attempts to identify the pathways of transformation and adjustment of practices, in response to contextual constraints, on an *a posteriori* basis. Hindsight, applied to resistances that have been overcome and innovations that have succeeded, is not particularly useful, except in providing advance validation for current processes with similar characteristics. The fundamental issue relates to the way in which change may be effectively governed, without resorting to a process of so-called natural selection, even one which is weighted using other parameters of collective equilibrium (hierarchical or ethical elements, for example). An operativity of the social on itself is produced by the mediation of collective actions, as highlighted by the neo-institutionalist and neo-pragmatist schools. The way in which they aim to interact with this operativity should, in our opinion, be handled with care, as it is too permissive with regard to actors' pre-given dispositions to become involved in change in an attempt to guide it. *While we feel that we must interact with this operativity of the social on itself, we also feel that this particular form of reflexivity on action processes must be co-constructed and instituted with an eye on both the indeterminacy of these processes, and the reflexive stance that actors should adopt with regard to their identity beliefs.*

A posteriori, we may observe a unifying effect produced by certain mechanisms that offer pathways for exchange between actors who previously operated in isolation from each other, whether as a result of ignorance or a failure to recognize the other as a potential interaction partner.

These mechanisms may appear by chance, potentially being used for purposes other than those which were originally intended, and reinvented in the course of action. A range of more or less institutionalized concertation or consultation committees also exists in a variety of sectors and situations; some of these mechanisms have an aggregating effect, while others are directly cognitive, and others still may be normative. It is rare to find institutional arrangements that incorporate action identity transformation as a criterion for effectiveness, though this may appear in cases where the defense of special interests is delegated to specialists, as with lobbyists. In the latter case, the capacity for profit sharing is of higher priority than the transformation of identities and relational matrices. It is possible to go into considerable detail concerning concertational structures (such as shared diagnostic processes) or the construction of new common knowledge (such as transdisciplinary action between experts and non-experts). However, in the absence of mechanisms directed toward these processes' subjectification conditions, the processes themselves are only interesting and effective on an occasional (and ad hoc) basis. They are more participative than reflexive.

The question that we wish to address more directly concerns whether or not it is essential to develop tools to increase collective responsibility in research and innovation, providing governance mechanisms to ensure reflexivity from the outset, i.e. focusing on the way in which action identities can manage to evolve and transform themselves in accordance with modifications to their research and innovation practices.

Promoting Reflexive Governance of RRI

Over the course of the previous chapters, we have attempted to highlight the particular plane on which an approach in terms of reflexive governance may operate. The fundamental challenge is to shift the attention that directs reformative activism onto the production of a reflected and collaborative mode of piloting attempts at reform. This shift may be called into question by a form of reformative activism that itself views such an issue as of secondary importance. Other obstacles to this shift arise from a certain representation of the role of a third party, ideally played by such an attentional mechanism for steering reform processes. Reflexive governance, thus, appears as a theoretical proposition, which attempts to challenge the idea, underpinning governance practices, that the actors in question possess a pre-given disposition to benefit from intelligent processes that allow for an alignment of preferences and an increase in the collective problem-solving capacity. Instead of an essentially forward-looking selective attention to the desired results, reflexive governance insists on the role of retrospective attention, inherent in the capacity for anticipation, which is thus based on a backward-looking mode. There is thus a need for actors to work on themselves during the course of action in order to permit progressive detachment from pre-given self-guaranteeing capacities that create both a supposed action identity and a power for repetition. In this way, we reach an understanding of reflexive governance in which the essential object is actors' work on the iteration power of the non-identity of the self.

In the previous chapter, we aimed to outline, with as much precision as possible, what is at stake in an approach in terms of reflexive governance, highlighting the special connection that it tries to establish between mechanisms for increasing collective responsibility and the way in which

action identities may succeed in transforming and rebuilding themselves within these mechanisms. In our assessment, the key points of this approach are as follows:

1) The anchoring point of an approach based on the reflexivity of governance mechanisms for a collaborative action lies in the construction of social attention to action identities' need for reiteration in response to perceived uncertainties in processes of social transformation. The focus is thus less on the need for an internalist stance, consisting of acting on the current action, than on thematizing the representational distortions in the ongoing process, which lead to effects of repetition when faced with uncertainties. All of the actors involved in a problem-solving mechanism within a social context are driven by a need to guarantee the stance and the entry point that justified their convocation or request to participate. This involves the value of their perspective as a recognized element of the problem, in relation to an ideal closure of their *raison d'être* as an acting entity, i.e. their action identity. The attachment to this function of self-image repetition must be thematized.

2) The second level on which the reflexive approach operates relates to the cooperative structure of problem-solving processes. This activity aims to take into account a fundamental asymmetry that usually results in a bias in cooperative mechanisms. The different identity postures implicit in ongoing process anticipatively determine the meaning accorded to the constraints of interactions with others. This generates a particular form of action community that is both limited and thus accepted as a necessary means for finding solutions, but also always subject to bias, insofar as each desire to self-guarantee an identity is presumed to be relegated to the background, giving way to an objectification of the other's desire in the current process. By ignoring a supposedly pregiven identity on one side while objectively adjusting to the supposedly pregiven desires of the other party, we reduce cooperation to a mechanism for reproducing existing balances. The challenge for reflexive governance is to produce effects that shift the heart of attention away from the aim of producing results that fit within an interest-equilibrium model, and onto the transformation of actors and their relational potential. We must move away from the simple model of mutualism, which refers back to a structure promoting reciprocal benefit, in order to consider a cooperative model acting directly on the implicit asymmetries of the relational structure.

3) The third area of reflexive governance concerns the subjectification of mechanisms. It is directly dependent on the first two areas, in that it is based on a critical (re)examination of self-guarantee mechanisms, connected both with entry into a problem-solving process and with the supposed effects of preference alignment in cooperative interaction. This bipartite effect highlights both the limits and biases involved in identity repetition behaviors, and it produces within actors a new self-knowledge, which must then be worked on in its own right, as it constitutes the key to the subjectification process of an ongoing action. The disruption of repetitive dynamics does not relate solely to the issue of non-reiteration; it also allows us to consider the power of iteration in a new way: a shift in relation to action stances based on a principle of non-identity with the potential to incorporate new meanings and new heuristics for behaviors to adopt. In relation to the first two areas, we must now consider a process of self-confrontation, resulting from the possibilities created by the common interest identified in the process.

4) The self-confrontation process is only useful if it is integrated into a fourth area of work; this time it is directly related to the transformation of relational structures in ongoing processes. At this stage, the issue pertains to experimental work pointed at reconfiguring both roles and the relation to power within an ongoing process. The aim is not simply to work together in an innovative manner in order to produce new solutions. Such a method barely differs in its modes of capitalizing on knowledge and monitoring the ongoing process. The challenge is to work together on the relational matrix incorporating the problem-solving process, and to carry out a concrete re-evaluation of questions of direction, conflict resolution and risk identification. Additional tasks are created in relation to the initial process, and it is essential to work on these elements in order to account for the iterative power of the common interest. The required work shifts toward a reconstruction of the way in which the common interest is engineered, another form of management and planning of the solution-seeking process.

5) The remaining task is to incorporate these different levels of work into a sequence. This involves focusing attention on the attention process aimed at two major shifts: one in terms of the singular relation to action identities and the other in terms of the relational structure within which the different singularities interact. The first level concerns the release of a subjectification power, while the second concerns the opening of relational

structures to a principle of supplementarity. This process, as a whole, is fragile and subject to a number of different pressures, proceeding from both suppression and avoidance, or even diversion. Different figures of repetition pose a threat to the ongoing process, which can only continue by being constantly thematized itself as a process opening up new perspectives. It needs to be suitable for a tiered approach to stabilization for the purposes of reinforcement, and to be constantly applied to new areas in accordance with prior gains. This operation involves explicitly specifying the effects of reflexivity based on the general schema of reflexive governance. It directly raises the question of steering reflexive governance as a model for socially negotiating problem-solving mechanisms.

Let us now reconsider the question of reflexive governance of responsible research and innovation (RRI) on the basis of these gains, something which seems to be sorely lacking in debates, for reasons similar to those observed in neighboring fields. The tool of reflexive governance is little known, and often appears for those who know it as either secondary, considering the aims of RRI, or simply as having little relevance. This is not the case.

On the contrary, reflexive governance should be integrated as one of the main pillars of RRI, following the example slowly taking shape in biomedical or research ethics, or in sensitive areas such as biodiversity or the right to food [DED 14, DES 14]. The role of this pillar is fundamental, in that it affects how well the other pillars may be implemented, particularly in the decisive area of action identity transformation, i.e. in terms of the production of new action cultures related to the normative issues under the scope of reformative processes. Contrary to the idea that a culture of this sort may be acquired simply by operating differently or within different frameworks of constraints, reflexive governance focuses on the effects of repetition that underpin engagements and allow actors to reorient constraints in relation to their self-guarantee requirements. Without specific work carried out in the course of action, subjectification processes are limited to social reproduction, i.e. a permanent anticipation of the need to preserve a pre-given identity upon which the idea of optimality of collective processes is conditional. The prevailing logic in most cases is that of subjectivity's status quo or "running in place", by way of bracketing an identity so as to preserve it, thus privileging an anticipation of other parties' desire that would allow for an objective translation of the identity to repeat. This results in a fundamental obstacle to creativity in terms of the capacity to envisage new roles and to accept the uncertainty of a new relational matrix.

Any RRI policy must therefore include, as an integral and explicitly-thematized element, an acute vigilance aimed at its fundamental guiding principles.

We shall take the opposite direction to that used above, where we explored and moved beyond existing positions. This time, we shall start from the recognized need to establish transversal vigilance across all orientations of an RRI policy, in order to target two major shifts, one collective, the other subjective. The first considers RRI as a process of constructing new forms of relations between networks and research sectors, while the other concerns RRI insofar as it directly raises the question of singular research identities.

Approaching governance as a reflexive operation necessary for the implementation of all dimensions identifiable from the perspective of RRI is in no way reducible to the addition of a supplementary item, just one more indicator for external evaluators monitoring the correct collective implementation of RRI. The aims of our proposed approach are completely different. The issue is not to figure out how each action level intends to undertake, through subsidiarity, the implementation of participative mechanisms that include stakeholders in the collective production of knowledge. Instead, it involves the governance of an RRI policy as a whole, which should be directly included in the incitement and monitoring process. Consider, for a moment, the case of an unusual decoupling, in which the methods of classic governance via external control and monetary incentives must be used to promote the implementation of a new form of governance based on the participation of beneficiaries and the redefinition of roles. In this bipolar system, we might claim to be able to support the emergence of something new by using those tools that we are trying to move beyond, for example calling on “command and control” effects to help us to go further. In this scenario, the most damaging element lies not in the obsolete stance of the monitoring authority, but in the way it assigns transformational power to those actors’ targets by incentive policies. The confrontation with the beneficiaries’ external constraints provides the expected opportunity to activate existing capacities for self-transformation, to challenge interpretative habits and to create new partnerships for knowledge production. In this case, the complexity of the shifts required, the strength of resistance and the propensity to action identity repetition would be strongly underestimated, if not ignored.

Our thesis is that the question of governance is not, primarily, that of *how* assigned objectives may be implemented, but rather of the *activation* of reflexive vigilance, i.e. attention to the implementation of attention, and attention to the conditions of governance as a process with the potential to challenge the attachment to action identities and to lead to radical shifts in both relational stances and identity beliefs. Knowledge co-creation dynamics cannot be activated without deconstructing the obstacles that hindered previous dynamics, and which caused identity postures to become stabilized and reinforced as guarantees of success. It is pointless, for example, to investigate the capacity to create confidence, if this capacity is only used to adapt objectively to the desire of the other in order to save their action identity. The repetition of roles can always be co-created using a process of mutual reassurance.

In reconstructing the challenges of reflexive governance, our aim is to move beyond standard approaches to governance as a mechanism for the implementation of inclusive and participative network policies, propelled by independent administrative and regulatory authorities. We shall now reconsider the way in which its implementation may be promoted within the specific sector of RRI, starting from the culmination of its reconstruction, the transversality of an attention to governance operations (reflexive attention, or attention to attention), before moving on to the two fundamental shifts involved in this work on organizational attention, one concerning relational forms and one concerning identities. The starting point therefore lies not in an effort to reorient structures that are already operational in monitoring and financing research, but rather in a more fundamental question of general engineering, in which these monitoring operations are also involved. A new form of social engineering of research and innovation, including an RRI policy, concerns all stakeholders in a process of this type. This must be translated into contractual structures, in the chain of command and control and the organization of participation on the vertical plane of political decisions, and not just on the horizontal plane of producing the requested knowledge.

5.1. Co-constructing problems

In order to implement reflexive governance, it is not enough to simply organize means of directing collective attention at different obligatory checkpoints, as if these points were given in advance as the path necessary for

an implicit collective consciousness to keep an eye on vulnerable points. The fundamental challenge lies, on the contrary, in the capacity to co-construct problems for collective resolution. For this reason, the issues surrounding a form of institutional responsiveness to the needs and expectations of their operating environment is not primarily related to targeted objects, or to established partnership-based or participative methods, but rather to a collective stance in relation to the issues at hand, and the capacity to create this stance. This is what we previously referred to as “attention to attention”, or thematization of attention: making the mobilization of each involved party’s attention a theme in its own right, so that attention to both the self and others may contribute to a shift toward a novel form of co-created attention.

Certain authors have used the idea of social engineering in this context. Such an approach is less concerned with a set of operational recipes than with a collective engagement to guarantee the implementation of a problem-solving process. The advantage of this engagement-based approach lies in a leveling of different logics, supposedly pregiven and known to each other, with the double aim of reconstructing them according to the situation and shifting them with reference to a common interest. This common interest has no substance in its own right, but proceeds from a structural convergence connected to the situation and to its crossing point, although neither the situation nor the crossing point can guarantee the emergence of this common interest. This common interest may be treated procedurally by pooling resources to solve a problem as a way of cooperating and discussing to generate solutions. But this type of *ad hoc* operativity triggered by a social need does not cover everything. Above and beyond possible convocation processes, the most important element here is the response system attempting to take form. This system operates in an approximate manner by multiplying enquiry and problem-solving schemas. The significant aspect relates to the “structural proximities” of the different parties involved. They indicate the “zone of proximal development” of a common interest¹. The first specific task of reflexive governance consists of thematizing this “zone of proximal development”, sparking and maintaining the emergence of an intermediary culture and enabling a new form of learning related to ways of co-constructing the common interest.

¹ These are the main concepts of Russian primo-structuralism, as developed in and around the 1930s in the work of Jakobson and Vygotski (see [MAE 16a, BER 16]).

One might speak of valorizing the learning effects emanating from the establishment of a response system. A first, primordial task for reflexive governance relates to the plane of belief: a collective mechanism for attention shifting constitutes a learning platform, allowing each operator to broaden their problem-constructing capacity by including a redefinition of the common interest's vulnerable points. In terms of reporting, this issue means that any research mechanism following a process of reflexive governance should be able to express the way in which it intends, collectively, to respond to the vulnerabilities of the common interest, which are seen to be directly affected by its action. It thus produces its own intermediary culture of RRI, which not only constitutes a "zone of proximal development" within its own cooperative structure, but might also offer points of reference and interaction for other collectives.

It thus seems impossible to consider the reflexive governance of a research mechanism without explicitly putting to work the reference to RRI, i.e. without thematizing the attention required to research its social impact. This work cannot be reduced to the verification of indicators on a checklist. The issue of the relation to reality, underpinning this search for social causality, must be co-constructed. Such a search is nowhere near pre-given or ready to use. It poses a specific problem of project engineering, requiring the creation of a research culture with the ability to take on, and therefore construct, a role of this type. The elaboration of this culture operates via the creation of an intermediary development zone in which social learning can take place. This intermediary zone is dependent on the response system implemented when a project is faced with an identified problem that, itself, needs to be reconstructed. However, it also presumes interaction with idealizations of the common interest that are conveyed by the public will through the precepts of a "standard morality". Access to reality is fundamentally dependent on the capacity to transform these precepts into "hypothetical imperatives", which can be redefined by the course of action through the common learning it enables at the level of the network's intermediary culture.

Any governance that is not able to thematize this learning is blind and participates in the social reproduction of ideals, which are unable to render

themselves operational within enquiry processes². The key point to note here is that network projects are not responsible for recording the results produced by their responsible engagement, but only for producing them, before incorporating them into the specific dynamics of their own sector. The responsibility of recording thematic results falls to the authority requesting their creation. This authority has no other choice than to itself become involved in a reflexive governance of RRI, and thus guarantee its fluidity and continuous reconstruction through the work resulting from the appropriation of research networks. Above and beyond co-construction by actors, there is thus a decisive issue of recording the results produced by the “zones of proximal development”, which pave the way for new conceptualizations and, in the long term, allow for new tests and potentially even new falsifications.

5.2. Transformation of relational structures and negotiability of roles

Implementing an RRI policy entails *playing a part* in this policy, which in no way resembles a process of reaching compliance with criteria in order to obtain a label. We have moved away from the plane of redefining challenges in RRI in the form of the co-construction of shared problems that may be assimilated into a collective research program. What concerns us now are research operators and their capacity to produce a role able to support the social effects of RRI. One of the main challenges of reflexive governance lies precisely in the collective attention required for the necessary shifts to take place in order to leave behind supposedly pre-given roles and innovate.

In reality, for those engaged in research processes, the effect of co-constructing problems can be seen in the way in which roles are re-evaluated and renegotiated in the course of action. The response system for collectively established problems is an evolving one, as it concerns the production of a more efficient relational structure between the different parties in question, both in terms of knowledge production and the problem-solving capacity. A shift during the course of action is therefore required, and reflexive governance aims to produce the attention needed in order to

² On the contrary, a reflexive application of RRI should, within 5 years, result in a complete redefinition, considerably richer than the current formulation of the program that it aims to carry out.

monitor a shift of this type. The fundamental challenge in this respect is to move beyond the imaginary representation of the collective research process as one that optimally associates complementary roles. This representation is not only the result of the bias potentially introduced by an *ex ante* idealization of the intended collective process. The symbolic reference to self-correction mechanisms (*ex post*) is, in fact, most problematic in the mental schema that accompanies parties' collective engagement. The complementarity of roles is seen here as secondary, a result produced automatically by the process of mutual adjustment that occurs in the implementation of any collective process. Idealization thus shifts toward the process, ascribing a power of preference alignment to the cooperative interaction it sets up, through reference to its teleological power. The major risk is therefore the blockage of any reference to explicit work on the established relational structure, insofar as it is presumed to possess its own capacity for self-adjustment simply by being set up. The complementarity of roles is seen as an *ex post* effect of a self-adjustment process produced by the implementation of the cooperative process. The process's economy alone spares us the task of transforming the imaginary relation to roles. The cooperative process is presumed to contain, in and of itself, an effect of "deimagination" of the complementarity of roles.

The issue of the shift targeted by reflexive governance is of another nature entirely. It essentially aims to challenge the belief in roles as pre-given and ready to use, which must simply be combined in the best way possible, potentially using adjustment mechanisms. This issue of reflexive work on relational structures appears in any question relating to cooperation between different scientific domains, or even between individual engineers with different areas of specialism. It gets harder the less the researchers understand the skills, methods and objects of other parties, and becomes overwhelming in the absence of the classic standards of truth produced in a context of methodical and critical accumulation, under the control of a defined epistemic community. We see that idealized *ex ante* representations may be avoided, up to a point, by focusing on practice and accepting that different parties possess different skills, and that an open form of epistemic pluralism may result in the construction of a new entity, with its own cognitive efficiency and the capacity to offer new orientations. It is thus necessary to concentrate on problems concerning the localization of these resources, and on the translation obstacles that must be overcome in order to introduce them – once again – into a presumed effect of complementarity that can guarantee the production of cognitive unity.

The fundamental question raised by reflexive governance in relation to work on the self is therefore not one of mobilizing diverse bits of knowledge, and even less of expanding the range of knowledge forms seen as mobilizable, such as those shared by local communities or groups of practitioners. The key issue is the desire that transforms all of these bits of knowledge into potential objects of a problem-solving process, or, in other words, the supposedly pre-given function or the role that they are to play. However, the only way of truly initiating an iteration of the collective is to suspend pre-established roles in order to create the possibility of new recompositions. As long as an effect of complementarity is present and overdetermines the composition of the process (localization/translation) and its usage, the functional idea of roles to be played is not considered in its own right. Hence, the interest of fully reconstructing the role function is not recognized by the process, and the different entities are, in the end, only used as functional objects referring to a whole that surpasses them, and not in terms of their agency.

It is doubtless interesting to note that the interactions produced within cooperative frameworks between researchers and practitioners allow these parties to modify their imaginary representations of one another. However, these modifications do not eliminate the fictional relation to an implicit norm of complementarity that guarantees the functionality of the interaction: the expert may seem less distant, less detached from practical realities, more approachable, more involved, even more concerned by the potential social effects of his or her work; the practitioner may appear less unilateral, overall better-informed, more respectful of distant constraints, more methodical, etc. Mutual adjustment creates a minimal social hybridization, which may go as far as a “two-way interchange between scientific exploration and the exploration [...] of the collective” [CAL 01, p. 257]. However, the ideal of complementarity misses iterative capacity with regard to this polarization of the solution-seeking process, between the order of truth production and that of agents’ transformation of reality. What saps these processes of their creativity is this pre-given division of roles that remains untouched due to the interplay between divided poles³.

3 The most usual manner of moving beyond a simple aggregative representation of complementarity and foreseeing effects that go beyond the intelligent implementation of an interest group’s politics consists of using formal deliberation processes alongside the cooperation mechanism in order to produce procedural equality between the different parties.

The decisive point for reflexive governance lies in form of role creation that challenges all implicit rules of complementarity in favor of an effect of *supplementarity*. The iteration of the collective operates through the construction of new roles and depends as much on a modification of relations to others as on a *modification of the relation to oneself*. The remaining element to consider is the relation to identities, i.e. the attention to the shift concerning all parties involved. In terms of the relation to others, an RRI policy constitutes an essential element for deimaginarizing relational structures. By destabilizing research routines, a policy of this type provides the opportunity to co-create a new role in relation to a social effect of research, which should be able not only to make claims to communality (see point (1) above), but also to become both transversally and mutually operational in practice. This involves producing a certain usage of action norms by attempting to pre-empt solutions with regard to a social lack. It entails cooperating in order to produce an indirect social utility from scientific practice by benefitting from the provided associative and cognitive efforts. The creation of new roles prevents RRI from being reduced to a conventional calibration of practice through incentive mechanisms, and allows us to seize this new possibility to create other new roles as stepping stones toward a new relational structure of action.

We must now consider the relation to identities, i.e. attention to the shift concerning each of the parties involved.

5.3. Iterating identities

The transformation of a relational structure allows us to implement RRI objectives while sharing new roles according to a collective re-elaboration of the objectives in question, thanks to the increased attention to incorporate the implemented actions' social utility. However, this type of transformation might be limited to guaranteeing the quality of provisional cooperation procedures. In this case, it would operate as the mirror image of the incentive framework, and the relation to RRI requirements would be of the mimetic type cooperatively adjusting to success conditions in order to guarantee funding. At best, this might also constitute a form of hierarchical coordination, recognizing an externally imposed higher interest that would guarantee, in an inclusive manner, the extrapolation toward the social community of all potential beneficiaries. Ethical adherence to this external

formulation of general interest would only, in this situation, give it an imperative structure, translating the requirement of conformity into a set of values.

The issue lies elsewhere. It does not concern a mimetic logic of adaptation to criteria that potentially relate to a public ethics established outside of the process. Instead, it concerns what might be referred to as a cathartic logic, one which leads actors to undertake self-work and incites a new way of subjectifying their engagement in the collective. The effect of an RRI policy should also be verified on this level when it is led from the perspective of reflexive governance. Beyond the construction of a common interest and the shift in relational structures allowing for collective action, there is also a distinct work of *subjectification*, specific to each party engaged in the collective process. The challenge here consists of ensuring that RRI does not become simply an extra argument for the imaginary redefinition of action's supposedly pregiven unity, but provides, on the contrary, the opportunity to beneficially relate to the non-identity of the self by including within it other significant elements linked to the effects of RRI.

From this perspective, it is essential that RRI is not considered as a finished framework requiring monitoring and compliance. Instead, RRI provides words, a certain mode of verbalizing, a simply "phonological" tool in a manner of speaking, allowing the creation of a bridge toward a certain marking of social interest based on research goals. It stretches a thread across the gap between self-standardized productivity of research and its social utility, producing a shift within its own expressions. With respect to the repetition of a research position that ensures its own validity as a cognitive process, RRI may provide a fundamental means of moving beyond the irreducible uncertainty of the social utility of one's work, by filling the gap between a signifying desire with a constant tendency toward self-confirmation through efficiency and a social effectiveness consisting of reality experienced as a refractory and disordered element. In this sense, the simple phonic moment constituted by RRI terminology may, from the moment of implementation, destabilize the methodological self-guarantee process and lead to a different process of subjectification within its very action.

Following an approach in terms of reflexive governance, RRI may offer a unique opportunity within a collective action mechanism, with repercussions

on different levels of engagement: the construction of a common interest, the matrix of relations structuring interactions between partners and the identity of each entity that holds a stake in the process.

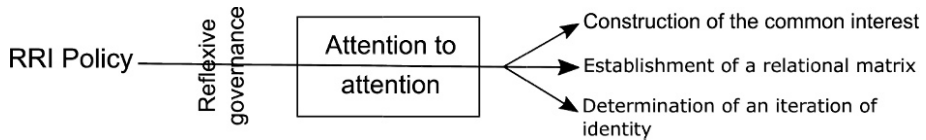


Figure 5.1. *Elements of RRI policy*

With regard to the level of singular identities, the interest of reflexive governance does not, as we have seen, lie in a catalog of ethical recommendations, or in a list of indicators for the development of responsible research. Its scope is both less extensive and more radical. While further definition is required with regard to orientations and requirements, this type of work must be the object of a network's common construction of a problem. At the level of individual parties, the challenge lies elsewhere. RRI sometimes appears to be simply an unfortunate overcoding of a set of politically correct aims, due to the fact that it indicates, from the sidelines, the limitations of a hole in scientific discourse. It attempts to express a “non-seeing of seeing”, and to suggest a change in perspective in order to evaluate not results, but rather the science that is taking place. When truth production is fully absorbed into the degree of certainty it can ascribe to its assertions, the area containing what initially seems incalculable or, worse, off-subject, can only be called a *hole*. Precautionary theory made a certain effort to deal with some of these limits of knowledge, when they refer to a legitimate doubt concerning presumed but insufficiently demonstrated effects. The type of limitation considered in RRI does not refer to the measurable, relating to causal chains; instead, RRI deals with limitations inherent in the reproduction of knowledge modes that take their relevance and social utility for granted during their construction, and so without constructing the regime of responsibility in which they may evolve as social operators.

RRI thus indicates *holes* in the knowledge produced by each party concerned. These holes are not necessarily a cause for concern or alarm in their own right, as they mark the place of social interests that the produced

knowledge is not capable of mastering on its own. Semantically, they refer to fields so vast that the disciplines to which they are assigned are not, themselves, sufficient (gender, climate, discrimination, etc.). Pragmatically, it is not enough to provide a number of development indices corresponding to these issues in order to guarantee an impact in this area. Instead, these elements are markers of social interest, which make their presence known, and become involved in the production of scientific knowledge, through the holes in question. These holes are default markers that indicate the unseen social interest from which scientific activity emerges as a whole, within this social experience.

The capacity of each party, engaged singularly in the process, to provide responses or to propose solutions is not in question here; instead, we are concerned with something simpler and more radical. What needs to be taken into account is the *non-identity* that founds each party as a social operator. Their potential for knowledge and for the collective construction of solutions is not limited to what they are able to anticipate or master through self-monitoring. A research process is also a process of subjectification, which allows for the provisional and functional reconstruction of identities in accordance with disparate social interests. The capacity to grasp the markings of these social interests, to be affected by the effects of a “different phonology”, is fundamental. The philosopher of science Jean Ladrière [LAD 97] spoke, in this respect, of a destabilization of meanings as a necessary condition to responsibly anchor one’s involvement in a collective destiny. In a nuclear power plant or a genetically modified organism, an expert sees a complex set of procedures responding to precise laws. Up to a certain degree of knowledge, he or she may also be able to identify the technological risk inherent in the mechanisms produced. However, the choice of society that fits with these procedures, opportunities for growth, and modes of regulating energy and food production that form the backdrop to this work, all of these lie outside of the scientist’s sphere of expertise, while forming part of the same collective shaping of human destiny played out through these procedures, which initially appear to be simply of technical and scientific concern. Ladrière thought that simply viewing technicoscientific procedures from a historical perspective was itself destabilizing, as it results in an “ethicization” of the products of science [LAD 97]. This includes a moment of dawning awareness regarding the

ethicalness of a situation, the way that a constructed situation involves a recomposition of collective destiny, and a point at which the collective will becomes politicized when the question becomes whether and under what conditions this type of future might be chosen to further the general interest.

This process might also be understood as a passing of the baton, as if beyond what science can master, there is a responsibility, which must be exercised collectively, and decisions, which must be politically organized and addressed. The scientist becomes a citizen and, with other citizens, communicates with representatives who arbitrate and guarantee common order. These fixed identities are no longer operational and may even present a danger. The idea is not to reflect on a science, which may have contaminated public debate and taken the place of the collective decision-making power in an uncertain universe. Instead, beyond indefinite controversies relating to highly mediatized areas of science, we are most concerned with extending trust in the power of science to provide solutions and generally configure the destiny of humanity. It is in order to build this trust that we need to revise fixed identities insofar as they relate to ethics and politics. In posing the question of the iteration of scientific knowledge, we elucidate its relation to the issues of ethicization and the politicization of its stances. We thus avoid filling in the gaps in this knowledge with recourse to its obvious utility and direct this knowledge, using the gaps a starting point for destabilizing its identity ties, in order to take on the risks of a confrontation with social interest. In this sense, what Ladrière referred to as the “destabilization of ethics” in the 1990s should now be reformulated as the “subjectification of science”, i.e. an understanding of the non-identity of any production of scientific knowledge with the social interest that marks this knowledge.

5.4. RRI pathway for reflexive governance

RRI preferred pathway for reflexive governance is that of an ongoing appropriation of the extra work needed to incorporate the non-identity of scientific knowledge and its social interest into its practices. As we saw in Chapter 3, different ways of focusing an activity on an external third party also tend to lay the groundwork for a greater attention to the general interest. A certain routine presentation of RRI, focused on priority axes that lie outside of ongoing research activities, might reinforce this externalizing

effect. It might even constitute a form of *a posteriori* social consciousness, justified in accordance with a specific secondary process of future impacts, to be verified through the extension of actual measured results. This is a form of indirect gain, enabled *ex ante* through an externally produced extrapolation effect rooted in the social imperative of a norm of responsibility.

The major risk in a scenario of this type, running against the basic principles of reflexive governance, lies in the reification of the possibilities that have been taken into account through this process. A social consciousness that externally overdetermines the truth to be taken into account blocks the internal process of co-constructing hypothetical imperatives. The key issue under threat here is the passage from an approach that views norms through the lens of a categorical logic to an approach that views them through the lens of a problematizing logic. Within the framework of collectively tackling problems of responsibility in the construction and production of knowledge, stances should not be induced or, worse, deduced according to a pre-given categorical order. Instead, the problem must be co-constructed, via a form of inference, which must still be implemented in a genetic process.

The inference operation concerns the work on belief that underpins the pathway of reflexive governance. It does not aim to touch on a truth that could be fully determined from the outside, as in an action program. There is no determinable content that corresponds perfectly to the targeted social interest: the words and orientations chosen by the actors are useful, but only insofar as they symbolically refer to a void that they attempt to deimaginarize, connecting it to concrete practical choices, which can only ever be the reflection of a state of social self-consciousness. This is what we must avoid reifying through creating an external order of truth with preordained authority over action, and whose knowledge can only bear on action that would in turn be extrinsic to it.

First, therefore, we must take an operation on belief into account, which allows us to anticipate the behaviors and social interests to be considered. However, this operation would be strictly rhetorical without additional *genetic work* on the capacities for self-mobilization and cooperation. This genetic work allows us to follow and support the anticipation produced by

inference by broadening the ways of engaging in action and permitting the production of relational structures to ensure the cooperation of available resources.

The pathway of reflexive governance has already been outlined on several occasions, with a particular focus on the necessary shifts in collective attention (Chapter 4), then heading on to the process of implementing an approach of this type in a research collective, which is already operational (above). This pathway aims to synthesize two practical operations for the actors in question: an inferential operation and a genetic one. The purpose of these operations is to guide the implementation of the collective tasks involved in reflexive governance. The first level of work, corresponding to the operation of inference, is that of co-constructing the issue of RRI as a common interest. Its function is to create a *zone of proximal development* in which attention to the social impact of the research in question may be thematized. The second stage corresponds to the genetic operation. Its function directly concerns the transformation of the *relational structures* and *action identities* that condition the ways each party gets involved in the ongoing process, i.e. what roles they play, and why.

The first operation to implement along the reflexive governance pathway for RRI consists of elucidating the structural convergences allowing the association of a knowledge production system with social expectations, within an intermediate research culture. This is a form of social learning that helps researchers feel out a shared sense of the responsibilities they have toward social expectations. The collective task of systematically comparing RRI expectations with situation-based specifications constitutes a “zone of proximal development”, as discussed previously. According to Vygotski [VYG 97, p. 393], this marks a specific stage in the learning process: it allows issues to be formulated at a level of generality, but without requiring guarantees of transferability to other situations or the provision of justifications outside of a given context. For those collective processes open to the common conceptualization of issues but which are not quite there yet, this “zone of proximal development” sets the stage for further progress. This involves a tailored, open and provisional reformulation, both in terms of meaning and the scope of RRI for a project-oriented collective. As we have seen, the construction of this zone poses a specific problem in terms of participation engineering, as it suspends the collective’s imaginary identity,

while blocking any symbolic recoding that would define its relation to reality. This zone for the development of a common identity, in connection with RRI requirements, may thus be seen as a factor in unevenly distributed risks, a potential area of conflict and an ideological power vector. The engineering function of the intermediary research culture's inference process needs to limit the uncertainties involved by acting on three identified levels: risk mastery, conflict management and the organization of participation [MAE 13].

The second operation consists of making good use of this stage and moving beyond the uncertainties generated by its creation. The issue here is how to link up, within the genetic schema, the work carried out on role transformation and that on the iterative power of singular identities. In fact, reflexive governance aims, on the one hand, to move beyond the imaginary representation of problem solving actions as complementary in order to consider a shared creation of new roles in relation to social expectations. On the other hand, it also aims to move beyond the instrumentalization that knowledge was originally intended for in favor of its social utility, in order to reconnect with a true process of knowledge subjectification, accepting the indeterminacy of its social utility as a source of creativity⁴. These two registers of action within reflexive governance are, in reality, interconnected, even though they work on different levels: one concerns a collective process of de-idealizing the relational structures that govern the interactions between different types of established knowledge, while the other concerns a process of self-analysis of the supposed coherence of social interest discourse, taking its holes into consideration. The common point between the two registers lies in the marking of social utility. The first-level work on holes in discourse that reveal the non-identity of scientific knowledge and its social interest reappears on the collective level as a power of deroutinizing roles and collectively constructing iterative identities according to how they might respond to social expectations. On the one hand, the relation to oneself is destabilized by the external theme of others' interests; this is the point at

4 The bipartite action that we aim to highlight in relation to the genetic effect applies, on the one hand, to the discrete dimension of identities, and, on the other hand, to the group dimension of relational structures. The reference points of collective action evolve, affecting both the isolated beliefs of involved elements and the relational forms generating interaction between these elements. This two-part shift, thus allows us to consider new modes of subjectification and approach relational structures from an angle of supplementarity.

which social interest is marked through the thematization of the non-identity of scientific knowledge and its social interest as a thematization of the “theme of the theme of the other’s interest”. On the other hand, we find the re-elaboration of a theme of the other’s interest through the creation of new roles, via an effect of supplementarity in the reciprocal understanding of a common action on social interest.

The issue at hand in both cases is the theme of the social other or of reality, which is indirectly incorporated through a kind of thematic reopening⁵. The genetic process thus focuses on two levels at which action structures are transformed: the identity level and the relational level. At the level of identity, the theme of social interest leaves its mark on scientific discourse by pointing out holes in it. These holes steer self-analysis back to the primary meaning of the self’s non-identity as an action agent, and show how it is possible to make good use of this gap, which makes the imaginary rigidification of a supposedly pre-given identity unworkable. At the relational level, the iterativity of identity can support a process that goes beyond changing an angle of approach or a mode of engagement; interaction with other agents, themselves confronted with the iterativity of the relation to social interest, allows for the incorporation of other thematizations of the theme of social interest, and thus the collective formation of a response that is, itself, a marker of social interest. The interacting collective produces relational structures that themselves also become a manner of marking social interest by thematizing it in their own way, i.e. by reformulating, through their thematization, the theme of social interest. The stage RRI sets, when approached as a zone for proximal development, allows the social interest of scientific work to express itself as involved in transforming reality.

From this perspective, the stakes of reflexive governance of RRI may appear dramatically different from the other approaches currently available. It does not simply involve monitoring how scientific research is able to incorporate social expectations by adapting its behaviors and action protocols, nor the co-construction of social interest by extending the supplied reservoir of reference knowledge on which it stands, in particular by

5 Paraphrasing remarks made by Volosinov, a linguist, on indirect speech as “a theme of the theme” re-expressing others’ words [VOL 10].

incorporating new constraints of participation and interaction with communities of beneficiaries or concerned parties. The goal is to reach new ways of expressing social interest in research and innovation that go beyond the simple division between what is widely accepted as an object that reflects social interest and a subject of scientific activity expressing its truth. Either we stick with the established mechanisms whose imposed mode of linearity leads to acts of conformity and repetition, or we take into consideration the possibility of using a shock to destabilize the way social interest is transmitted: this function is thus constructed and reflected as a shock, followed by a shift and a recomposition. We therefore need to move from a linear process to a reactive process of governance. The way to express social interest is not pre-given, it cannot even be ready for use: it must be spurred on, co-constructed and tried out in context.

5.5. Operationalizing reflexive governance of RRI

One might view the foregoing considerations on the reflexive governance of RRI as primarily applicable to the operational framework of a research ethics policy, i.e. the implementation of guiding principles, on the obvious condition that the purely operational interest of all that has been said is clearly specified. In this case, we would need to clearly define the true guiding framework of an RRI policy, and define monitoring structures whose purpose is to evaluate the extent to which concerned research projects satisfy this policy. These structures would be those concretely responsible for ensuring that a certain distance is maintained between general principles and the guidelines that allow for their context-adapted operationalization. This is the level at which reflexive governance would reveal its “responsive” interest.

This view is only partly correct. It indicates one fundamental element, which we shall discuss briefly, even though its rigidity causes it to fall short. The challenge is to allow backflow from the operational onto the levels of generality that produced it, so as to avoid both entrenchment in a pre-given vision of social interest and recourse to a form of independent follow-up authority, whose assigned role as a “judge” would quickly show its limits [GAG 10].

Let us start off with the fundamental positive element this vision presents, that of a necessary operational adaptation. Clearly, this adaptation might be understood on a superficial level: how many committees will we need? How will they be formed? How much management of members' pluridisciplinarity is necessary? How many meetings and reports will be required? In this case, the operationalization and adaptation of guidelines to specific situations would relate more directly to the number and constitution of follow-up authorities, a form of labor division, than to the progressive redefinition of principles in relation to the realities encountered in the research process itself. There would thus be no fundamental change, simply an increased flexibility in terms of form.

The major problem for the reflexive governance of responsible research is to promote the elucidation of social interest *in situ* to construct its reformulation in order for it to be taken into account in a collective dynamic. The need for adaptation to on-the-ground realities, as found in the idea of guidelines promoting operationalization, should therefore be retained, but also needs to be extended to cover the whole policy of responsibility, both in terms of stating principles to implement and of ways to ensure their collective monitoring.

This core variation suggests a different approach than the evaluation/monitoring type, even if this monitoring idea is extended as far as possible to include mutual learning resulting from enquiries into research practices under shared management. From the moment both guidelines and the authority responsible for guarding them and making judgments concerning their correct application become rigid, the reflexive process will be biased.

The operational schema of responsible research governance should be very different, as it must focus on restating social interest and on the collective dynamic which may result in the implementation and guiding of its process. Canadian research practices are very advanced in terms of these fundamental questions, due to a historical willingness to consider the interests of social communities, articulated by very different legal systems, themselves the results of highly conflicting demands in the public sphere. If we take a look at the recommendations given to the heads of the Northern Contaminants Program [PRO 15], we see that the ultimate aim of research

planning was, from the very beginning, to create agreements with the communities in question in order to build consultations, information communication, the identification of needs, and knowledge exchanges directly into research processes.

This type of process is purely illustrative, and should not be limited to the consideration of political interests with highly organized lobbying capacities. It is not a question of simply activating responsibility as a precautionary structure that would assist in the anticipation of obstacles and in cost limitation via a process of enlistment and preference alignment. An operational strategy of this type allows us to understand that it is effectively possible to carry out research on highly sensitive subjects that also have a high social value, while aiming in parallel to broaden the basis from which scientific research is mobilized to create a dynamic that ties together social interests. If this dynamic is taken seriously and its reflexive potential recognized, it may not only promote adhesion and preference alignment, obtain a form of social peace and anticipate how its recommendations will be received, but also permit a capacity increase and a shift of the different involved actors with respect to the collective marking of social interest. In short, an improved capacity to both identify social interest and to act on it. In reality, encouraging the involvement of local authorities, allowing the participation of community organizations, verifying the utility of different types of knowledge in the process and integrating local resources into research is already a means of obtaining a form of social peace, but also, fundamentally, a means of collectively learning to mark the social interest of research in another way. What is achieved in this particular area should, within a framework of reflexive governance, be transposable to other sectors, providing keys to help shift practices of knowledge construction in interaction with beneficiary communities onto new foundations.

In order to enable such a broadening or open up spaces for the generalization of niche practices in which collaborative principles are already highly advanced, a feedback mechanism for responsible research policy is required, in terms of both guiding principles and monitoring authorities. The example of the recommendations around the implementation of responsible research in the Canadian Northern Contaminants Program is interesting from this perspective: a provided set of operational recommendations were overdetermined due to the supposed obviousness that

action should be carried out in a specific way, based on a context marked out through years of experience, with known barriers and potential contacts. In addition, these recommendations were not at the level of moral obligations, but rather in a framework of legal constraints at a constitutional level. The stipulation that “greater consideration should be placed on the risks to cultural values than to potential contributions of the research to knowledge” [PRO 15] is particularly telling. Concerned communities’ capacity for self-determination must be respected in its entirety. This warning could also be given, although with different implicit significations, in many other areas. However, the factual urgency of acting in this manner should not override the capacity to act scientifically, or the interest of reformulating guidelines on a similar foundation, especially when working with other, less organized communities within the framework of developing exploration by mining companies outside of Canada. Our point here is not necessarily negative: it relates to the interest inherent in reforming guidelines for responsible research on the basis of experiences seen to function under strong community constraint in order to make them transposable, i.e. simply *reflectable* by other operators in other situations.

A reflexive approach indicates that for this to be possible, a separation between form and content must be avoided. In addition to the imperative that actors meet, discuss, identify needs and barriers, find ways of working together and create jobs in the process, it is also essential to reformulate principles that spur them to act this way, if only through a hierarchical identification of which priorities for collective attention should guide the implementation of the research program: should it help the community with health issues, acknowledge its values, fight against its own marginalization or against that of some of its members (reduction of social inequality), keep an eye on the discriminations it endures, participate in sharing research resources, increase its capacity to manipulate the study object, or something else? The challenge is to avoid losing sight of the responsibility purpose we claim when acting in this way (in a collaborative and participative manner, open to the communities in question), while in the same way taking another look at the sense of the proposed interaction (cooperating on what, and for what purpose).

For this reason, the first two operational steps in the reflexive governance of responsible research are as follows: renegotiating the expression of guiding principles in accordance with situations and broadening, during this renegotiation, the participatory base of concerned actors, including beneficiaries as well as private or public partners.

These first steps are necessary not only for creating a road map for responsible research, but also in defining the tasks of a *follow-up group* responsible for overseeing its implementation and adaptation. The involvements of various partners can only be defined through this third step, in which responsible research may become a vector for subjectifying social interest, transforming predefined functions of research.

The constitution of an RRI “follow-up group” within a project strikes us as a key point, not to be confused with propositions formulated in terms of “committees”. The committees’ authority appears in top-down processes as a guardian of the operational phase (see, for example, [PRE 14]), responsible for making sure practices line up with RRI policy guidelines. It maintains the independence of an administrative monitoring authority, but whose structural position is more like that of an internal research auditor. Follow-up groups, however, have an essentially *ad hoc* function. They result from an internal dynamic of translation and adaptation of RRI requirements in relation to a particular project. Its primary objective is to reflect the extension of participation that allowed the reappropriation of RRI requirements, from the perspective of both beneficiaries and subsidizing authorities, be they private, public or community actors. In these terms, we may speak of a “mixed” follow-up group, involving different stakeholders in the process in accordance with their expectations and interests. A group of this sort must also include a facilitation function in order to fulfill its role. This function must help better build a link between the general requirements of RRI and specific expectations with regard to a research process, while remaining focused on the ongoing implementation of the collective dynamics of knowledge production⁶. It should also provide a shared framework for reflection in order to avoid getting sidetracked by an overabundance of

⁶ In this sense, the facilitation function covers a disciplinary dimension that does not principally relate to activity and evaluation methodologies, but to the relevance and coherence of the collective relation to a norm of responsibility.

interpretations of the responsibility that is to be exercised collectively. In reality, a behavioral guideline is provided by the process of reappropriating guiding principles with the aim of operationalizing them as guidelines. At this stage in the process, the focus is only on what founds a shared belief in RRI's operationality in connection to the specific project that brings together the concerned parties.

Following on from this crucial moment, two decisive steps remain to be taken. The first consists of translating the extension of cooperation to different actors and different action cultures into a sort of intermediate research culture created thanks to the close eye kept on ongoing mutual engagements. In this case, the aim is not to monitor, but rather to learn from others as partners differentiating between preconceived images. This way of observing the different adjustments produced by each partner on the basis of their own observations made to guarantee their commitments might be referred to as an "exercise of intervision" [FRA 09]. The aim of intervision is to provide an element of supplementarity in relation to self-analysis: the relational matrix implemented by responsible research opens the door to supplementary resources that indicate new possible roles [CAR 14].

The final step relates to the manner of *corroborating* an ongoing process. With respect to the guiding principles of responsible research, there are several levels of distance, in that, above and beyond the negotiation of priorities, the reflexive mechanism leads to differentiation, subjectification and supplementarity through the operationalization of principles. It is not solely an effect of adaptation and contextualization. The shift produced at the levels of both identity and relational structures is also a redefinition of both the form and content of the initial principles. It is a situated reconceptualization of the social interest of scientific research, which is as much a way of abstractly and provisionally redefining a state of reality as it is a transitory way for a collective conscience to act as a contingent variable within this reality. The strength of this position lies in its capacity to avoid reifying the possible through the illusion, which would be created by a retrospective consciousness of what must be done according to an idealized imperative. However, to benefit from this "passing" structure that indicates the regime of a provisional transition, the reflexive movement must be followed through to its conclusion, coming back to the initial trigger, the collective shock, produced by the guiding principles of responsible research.

The challenge is to *corroborate* the collective work carried out with respect to the non-conventional use of initial principles, whose implementation constitutes a “zone of proximal development” specific to an intermediary culture of action, anticipating the more general conceptual scope offered by its reformulation, as long as it can be corroborated as a participant in this kind of generalization process.

At the operational level, it would therefore be possible to synthesize the presented schema by contrasting it with the classic approaches that underpin a governance of responsible research supported by independent administrative regulatory authorities, which offer a reference framework normatively designed as a truth external to action and which would guide this action through the use of an operational mechanism. This classic approach generally aims to combine an injunctive approach, using a top-down model, with a community-based, bottom-up model. The linear and hierarchical process remains the norm⁷. Table 5.1 attempts to capture this.

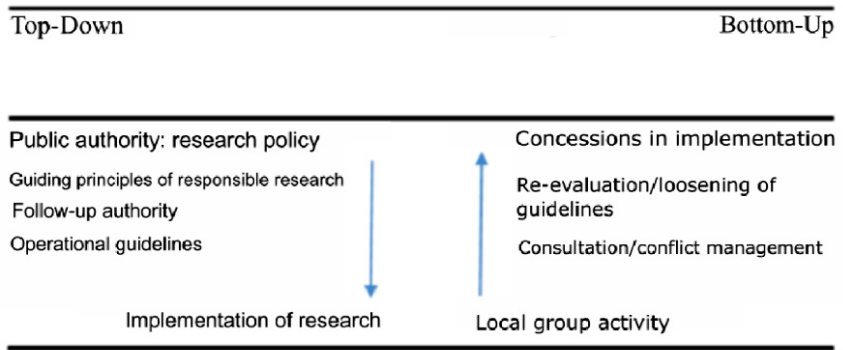


Table 5.1. Top-down versus bottom-up governance

Unlike this linear and hierarchical operating schema, the operational model of reflexive governance is circular and recursive. It forms a self-referential loop insofar as the guiding principles of responsibility are called on to define themselves based on the function of their ultimate implementation. The following figure attempts to capture this.

⁷ A certain horizontality is compatible with this model, if we focus on the passage to the processes on-the-ground implementation and the recommended interaction with potential recipients of research in order to find a first degree of interaction between actors.

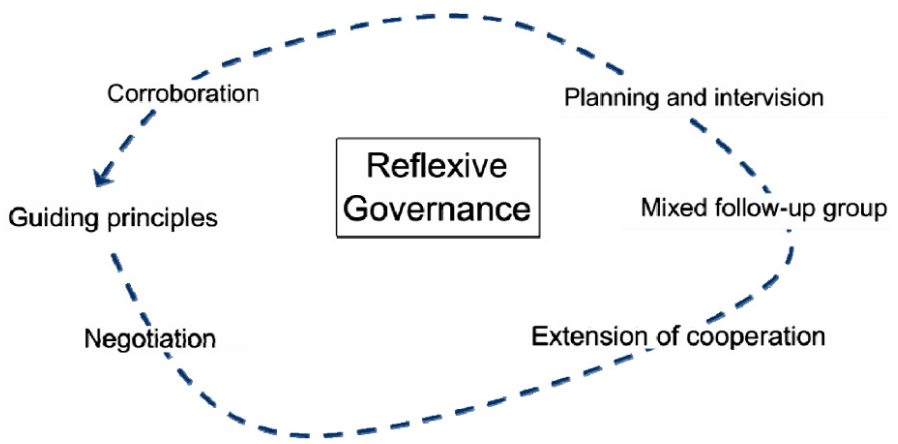


Figure 5.2. *Operational cycle of RRI governance*

Intellectual Intervention in Society: The Key to Reflexive Governance of RRI

Over the course of the previous chapters, we have attempted to reconstruct a certain manner of approaching the organization of intellectual involvement in society by identifying different structures of collective knowledge production, which are seen as different systems for responding aimed at social needs. To this end, we have argued for the interest of mobilizing governance theory as a form of political philosophy examining the type of action that can guarantee reflexivity with regard to ongoing actions, so as to enable, through intellectual engagement, a transformation of the way actors relate to their identities, marking a social interest in scientific practices and broader corroboration of the way in which the requirements of collective responsibility are met in research. Our thesis is that this approach may provide a better overall framework for the implementation of responsible research and innovation (RRI) policies than approaches based on monitoring the implementation of general criteria, treated as a set of externalities or pathway constraints that the scientific approach must learn to manage in order to confirm and reinforce its social legitimacy.

Our approach is thus based on a tripartite process: an information process, aiming to define the type of research governance that is best suited to meet reflexive governance requirements; a deconstruction process, aiming to highlight potential areas of resistance to such an approach; and a

reconstruction process, aiming to transpose the advantages claimed by the proposed approach onto an operational mechanism. The tripartite process thus focuses on the advantages of an approach formulated in terms of governance theory, structured around a central operation of reflexivity on ongoing action, which leads to a particular type of participative mechanism, aimed at reworking both the way social interest is marked and the way researchers relate to their action identities.

One might well view our approach as amounting to a maximalist way of considering RRI. However, this maximalism is simply the visible result of a more basic concern: that of seizing opportunities offered by the responsible governance of RRI for marking the social interest to rigorously construct a responsibility policy for intellectual interventions in society. Producing knowledge in society is not simply a matter of enjoying the benefits of recognition through renown, or of broadening the basis of truth used to guarantee the reproduction of production processes. It does not involve extending an imaginary power, but rather participating in the erratic construction of a shared power of self-limitation and self-monitoring in an uncertain environment. The modern world is built around the conviction that the key to progress lies in the accumulation of knowledge, and that an increase in power is directly proportional to the appropriation of knowledge. This culture founded on a technico-scientific utopia has made a significant contribution to the current depression set off by the dystopia inextricable from this also destructive power. However, these destructive effects are not primarily connected to a lack of responsibility in research practices or in intellectual interventions in social life. This intervention has instead always been a blind spot for technico-scientific utopianism. This framework has never allowed action to be considered fundamentally as a consequence of stance or posture, but rather as necessary effects resulting from causes to be mastered. It pushes toward practical engagement, spurring people to participate in life's self-production process by themselves becoming involved with the living world as co-actors or co-producers of it. This fundamental scientific naturalism excludes questions of ethical choice and moral obligation which may hamper the immediate instrumentalization of many new and innovative techniques. The "march of progress" is, in fact, the most radical form of naturalism invented by humankind to corroborate its desire for mastery.

This process is in no way diabolical or perverse; on the contrary, it is spontaneous and effectively corresponds to a form of life that organizes itself so as to underpin the operativity of science. Transformed into a shared culture, however, this basic naturalism runs the risk of a fundamental blindness, which we have tried to fight off with the above considerations. It ignores the idea that our choice, of a guiding posture for getting involved and exercising responsibility, can have a real effect on these actions, and makes the question of scientific responsibility secondary in comparison to its modes of production and organization. It almost forces us into a microsociology of all of the choices that make up the daily governance of a research agency in order to gain retrospective awareness of the contingent and highly manipulatable process, which oversees how intellectuals intervene in society. However, the lens of such a microsociology prevents us from seeing the overall structure that directs the action process; while this process is made up of micro-decisions, these are all fundamentally directed by a common structure, causing them to reproduce the supposed efficiency of the system to which they belong. Exercising responsibility thus involves the ability to reconsider this level of generality in its own dimension, i.e. as a structure of engagement. In order to exercise responsibility in the domain of research and innovation, we must be able to understand this operation as a way of marking the social interest of science. This operation may be tacked onto an ongoing science, whose practices are always already established, with the main goal of refining its directing procedures or even just protecting itself from potential attacks by clearly marking out the limits of its legal responsibility. Or, the operation of marking the social interest of science may be understood on a more fundamental level, eyeing a possible realignment of scientific interests with social interests; according to a desire to rework traditional postures and a need to enter into a new form of scientific culture, one capable of distancing itself from the myth of its knowledge's total operativity and effectively pursuing the co-construction of solutions.

Our approach consisted of showing that the challenge is not necessarily as complex as it first appears, in that there is no need to imaginatively and collectively produce a new rapport with scientific knowledge. Instead, we must harness the benefits of a simple shift in research practice, allowing for the mobilization of attention. RRI appears to offer the perfect opportunity for a shift of this type. It allows attention to be concentrated on the blind spot of

intellectual intervention in society as a function that generates scientific practice. Following agreement on the idea that any research activity is a certain way of participating in a response system, which adjusts to the way social interest is marked, and that this response system constitutes a sort of interface between an offer of knowledge production and the identification of a problem to solve, a connection is established between several collective dimensions and several action logics, which the research process will aim to combine in its operational structures. Thus, research produces a form of structural union between different social entities, which it incorporates in a zone of development, by providing cognitive tools which point to a problem-solving process. Intervention is thus the specific moment of aggregation which allows us to anticipate a community of interest capable of using a norm of shared action as a starting point for social involvement. The responsibility of research lies in the fact that its intervention inevitably acts as a marker of common interest, and it may consequently shift its attention toward this function, which structurally constitutes its action.

6.1. The destiny of rationality in the construction of common interest

One might look to pinpoint the task that scientific rationality would carry out in a pragmatic model, insofar as it relates to both the construction of an ideal problem-solving process and the capacity to reduce the uncertainties stemming from the effects of sub-optimality. However, this way of approaching the constructivist tie to social responsibility would be sorely lacking a reflexive loop. While a public RRI policy is now capable of providing a guiding framework with general principles and implementation guidelines, its goal is not only – in a minimalist fashion – to anticipate how the transparent management of contracted engagements will constrain the different parties involved. From a maximalist perspective, it is also a way of encouraging research to indirectly intervene in every affected societal question: for example, preventing a science prioritizing gender or environment in its hypotheses from itself becoming discriminatory or unsustainable in its mode of production. It is not only a question of coherence in the production of knowledge, but also of dynamizing innovative forms of cooperation imbued with a strong ethical value.

These requirements of cohesion and social impetus can now be formulated in terms of a research contract due to the fact that the way we believe in our ability to conduct scientific research has been radically modified and has settled in a new definition of intellectual intervention in society. This modification needs to be approached as a form of reflexive loop in order to better understand its consequences.

The notion of responsibility is not new to the discussion on science. In a very general presentation of the history of rationality, Helmut Peukert spoke of three major historical periods: truth, reason and responsibility; corresponding to the ancient, modern and contemporary worlds [PEU 76]. Validity criteria for correct reasoning and the dianoetic passage from opinions to ideas constitute a first condition for constructing reason as scientific: the laws of logic and the conditions for universalizing propositions within a community of argumentation. Reason then tries to pinpoint where the limits of understanding's operating rules lie, it perceives the performative contradictions stemming from speech's self-referentiality allowing us to consider what a limited rationality would look like. Following Jonas, responsibility, thirdly, allows us to examine the gap between the absolute nature of moral requirements and the relative mastery of causal chains which is enabled by the practices' proximity. Our capacity to predict uncertain effects, which cannot be provisionally mastered, and to weigh them against a prudential restriction of our activities is, itself, limited and fallible. Responsibility first appears as the passage from a theoretical awareness of the fallibility of reason, related to the limits of understanding, to a practical awareness of the need to acknowledge this fallibility in the empirical order of social production. Currently, however, the action of scientific research can no longer be seen, or experienced, as one phenomenon among others in a social whole, which is collectively handled by means of political control; the action led by scientific research generates modes of social living, and thus directly poses the question of how this mode of action controls itself, while it has itself become a *de facto* predominant vector of social monitoring. For this reason, we have approached the question of RRI governance not as a means of implementing recommendations formulated outside of research production, but as a whole, determining both the means of establishing an RRI policy and the means of coelaborating and following up on science's capacity for self-monitoring.

Historically speaking, this approach indicates a change in the way we look at the destiny of rationality. The philosopher of science Jean Ladrière was particularly insistent on the role of this level of generality in an approach to contemporary science [LAD 77a]. Before debating on questions such as those of the discontinuity or continuity of paradigms, considering the function of meta-theoretical criteria in the formulation of models or going as far as the epistemic sequencing of the history of scientific domains, it is necessary to not only clarify a way in which knowledge is historical, but, above all, to understand the role played by the way we believe in this form of historicity. Ladrière created a terminological tool kit to use in approaching the challenges of this belief relationship [LAD 04a], speaking of the hope of reason, eschatology rather than the teleology of knowledge, historical consciousness of the ethicalness of knowledge, and of the dimensional productivity of reason, which leads it to mark out boundaries between normal and non-normal domains of application [LAD 77b]. Ladrière borrowed the concepts of crisis and the epochality of reason from phenomenology; from Kant, he took the idea of reflective teleological judgment capable of referring to directing ideals as contentless forms. The fallibilist model and the idea of the internal semantic limitation of formalisms were taken from the philosophy of science of the 20th Century; the vision of science as an incomplete process of action, operating by continuously displacing the boundaries of an evolving topographical knowledge, has its roots in pragmatism [LAD 76]. Following Cavallès, he also made use of set theory, and the mathematician in him understood the event in the logic of discrete occurrences and recursive functions, which he also found in certain essays by Badiou. This whole range of notions is used to serve a single purpose: understand the way reason believes in its own historicity and defining what role this belief relationship plays. This was originally seen as a historical schema, internalizing the theologopolitical history of salvation over the course of the ages of reason, as with Comte and Marx in the 19th Century or Koyré in the 20th Century, actually results from a concern and a fracture that are far more radical than those triggered by an intellectual shift. Ladrière belonged to the WWII generation, which, after 1945, attempted to come to terms with the atomic age in science, like Sartre in *Plaidoyer pour les intellectuels* [SAR 72]. This generation paid considerable attention to the work of Jaspers and Jacques Ellul, while not losing sight of the work on technique that had already followed WWI, including Romano Guardini's examinations and the work of writers such as Léon Bloy and Georges Bernanos [MUL 14]. With Dominique Dubarle,

Ladrière's generation debated the need for an ethical supplement to assume the responsibilities of humans with regard to the power unleashed by modern science [DUB 69]. The perspectives of infinite power, identified by those like Edouard Le Roy [LER 28], rapidly transformed into the escalation of nuclear armament during the Cold War. Science could no longer be observed from the outside as a phenomenon of progress produced by a community or by a select group of "developed" societies; the entire world came to be affected and thus was made internal to this effective process of knowledge evolution.

Ladrière's first idea was that of imagining a specific level of generality on which a war of utopianisms could still be waged [LAD 73], where choices might still be made between a total rationalist planning of the future as a function of techno-scientific development and a power of bifurcating and redefining expectations with regard to the power of science, so that a world beyond norms might find a place, focusing on qualities of life other than mastery and abundance [LAD 92]. This utopianism has been a persistent refrain since the end of WWII, taking on a variety of forms such as that of a society disconnected from capitalist productivism, freeing itself from voluntary submission to work (free time) and the diktats of consumption (degrowth) [HAR 04], a society of frugality [GOR 08, GOD 92], sometimes with hygienist notes, seeking a transition toward a sustainable way of life, reconciled with nature, etc. However, it rapidly became apparent that such a choice would not be possible, insofar as only a transformation from within the techno-scientific society's mode of production could change the dominant trend whereby conscious life leads to the depletion of its living world.

Ladrière did not subscribe to the most pessimist scenarios, such as that described by Michel Henry (self-depletion of life), or to the more widely accepted idea of a prudential multiplication of reason, allowing a passage from the age of prevention to the age of precaution, following Jonas [JON 90] and others [GOD 02]. He continued to explore his first hypothesis of an adequate level of generality, but leaving aside the war of utopianisms, by making the search for generality internal to the reflexive intelligence that scientific knowledge may mobilize with regard to itself. In this case, there is no reinforcement of reason that would allow for the implementation of a rationality already established in the context of prudential reasoning of

practical knowledge. The problem lies in creating a historical consciousness of scientific knowledge [LAD 93]. This has nothing to do with a subjective theory of self-consciousness, such as that criticized by Hegel in idealistic variations of Kantism, or with the intimate relationship that a subject can establish with him- or herself through existence. Instead, it concerns the historical marking of a collective experience that emerges through the vectors of techno-scientific productivity. In the same way as the economy may generate a certain awareness of its dominant modes of effectuation, for example in terms of industrial merchandization or the securization of monetary flows, techno-scientific development results in partial, and strictly hypothetical, modes of theorization, with an essentially prospective function. Based on these modes of theorization, we may raise the question of how science might self-regulate as a productive activity. The historical consciousness of science in its provisional forms of theorization is the only possible way for science to enter into a mode of self-regulation.

Jean Ladrière understood this, well before authors such as Bruno Latour or Ulrich Beck. What sets his approach apart is its attention to avoiding the pitfall of an over-investment in hard-coded forms of theorization, insofar as their interest is only ever hypothetical and provisional, and particularly telling with regard to a degree of generality, which must be employed in a specific direction. The degree of generality to define is not that of techno-scientific development's self-representation as a way of managing social risk or as a power to incorporate artifacts in the deliberative construction of social choices. The degree of generality which concerns us here is that of the power to transform the conditions by which historical consciousness can act.

Historical consciousness is, in its specific degree of generality, inseparably both a self-referential speech and an event; it is a "speech-event". This is what gets missed when we tie ourselves down to science's self-representations. It thus constitutes a form of "juncture" (Ladrière speaks of mutual or reinterpreted encroachment [LAD 93]) between a social marking structure and the expression of an ideal of the self. It constantly tends toward an embodiment of both the optimal response to the social interest and a way of coding it. Historical consciousness as a structure of semantic productivity, thus, covers up in one fell swoop, its powerlessness to fully validate an ideally perfect response and the gap that exists between its symbolic coding and the reality of social interest. In this sense, historical consciousness is the moment of concealing or veiling both the non-identity of science with its ideal self-image and the non-identity of real social interest

with the symbolic marking offered by science. This is the level of generality where non-identity can be experienced as straightforward and evident, which must be considered in the face of its concealment in order to understand how a self-regulation operation can mobilize the capacities held by this non-identity.

Once again, representational formulations of this non-identity hold very little interest. They are the recurring expression of the intuition of a social existence which can never fully grasp itself, but they risk concealing the experience of the lack and the dissociation between the imaginary and the Real, which it involves by producing a new imagined unity of non-identity, cast as misrecognition, a form of contempt, a forgotten social suffering, etc. However, non-identity does not refer to a problem of something lacking within society; on the contrary, it demonstrates the power of the identity gap as an unseen capacity that enables a choice of self-regulation.

The level of generality of historical consciousness thus allows us to address a double destabilization effect that is specific to intellectual intervention in society. Sartre had already indicated this double effect, but only at the level of the subjective consciousness of the intellectual [SAR 72]. For him, the intellectual was torn by a radical ambiguity: on the one hand, they are drawn to distance themselves from the deontological code of a class constructed to serve dominant interests by guaranteeing the reproduction of their practical knowledge, thus maintaining their techno-scientific advantage; on the other hand, they are drawn to fear a backlash from the first move away from their unquestioned self, the fear that the dominated class will be further rejected as the dominating class' knowledge advantage is solidified, knowing that they can never achieve solidarity with those marginalized and ideologically entangled in the dominating knowledge edifice. Sartre understood, in his own way, the internal division of intellectual intervention, but applied it directly to the internal turmoil of the individual. However, it is in a more general and objective way that the social process of collective action that is intervention harbors a double destabilization effect: on the one hand, its imaginary self-image as knowledge of the True, the Just and the Good is brought into play; on the other, its capacity to simply validate the relevance of its social proposals within suitable regimes of action is contested. For institutional research arrangements, social intervention necessarily involves facing a two-sided ordeal, that of shot through with the fantasy of the efficiency of scientific knowledge as a system of appropriate responses, and that of actors rejecting

the symbolic truth indicated by the scientific interpretation of situations, and favoring the repetition of known resistances. For this reason, scientific intervention, as a collective mechanism, can neither enjoy the satisfaction which it intended to produce in reality, nor reinforce itself through the recognition of its capacity to produce Truth. The interest of developing its historical consciousness as a mode of intervention is found in precisely these two ways that the action of science fails to produce social efficiency. In intervening, a scientific process aimed at social efficiency must undergo this double destabilization effect: to intervene is to both accept and follow through a fundamental modification in the relation to the unity of knowledge (fragmentation) and in the relation to the meaning of the social interest to meet (contradiction). Intervention thus plays out in both a loss of cognitive unity and its pluralization as a mode of collective action.

Faced with this presentation, one might object that it simply pushes what K. R. Popper called epistemological expressionism [POP 78, p. 171–172] to extremes. Strictly speaking, this criticism, which targets the reduction of the scientific approach to the psychological tensions present in the subjectivity of the scientists who support it, is more applicable to Sartre's vision, as discussed above. However, as there appears to be a form of parallelism with psychological processes or with a pulsional theory of action, we may make use of this criticism to clarify the status we aim to impute to this experience of a historical consciousness of intellectual intervention in society. In the phenomenological analysis that we borrowed from Jean Ladrière further up, the aim is not to subjectify, but rather to objectify a process of investing scientific action in its relation to the social whole. It appears that scientific action can no longer be isolated today as if it were an internal social phenomenon or even an internal subsystem: it forms a vector that guides the production of the social whole in its entirety, while establishing the conditions for self-interpretation. In order to correctly understand its action, before reducing it in any of its many fields of application and particular modes of speech, it must be considered as a generative (holomorphic) structure: that of self-regulated knowledge production directed toward the solution of problems in a field of possibilities, which is predetermined by this knowledge. The fundamental phenomenological question, thus, concerns the way in which this essential type of knowledge mastery is manifested in the whole which is supposed to confirm it, through its phenomenal distortions which should, in principle, be predictable. The idea formulated

by Ladrière on numerous occasions is that of a continuous topological approach, allowing a sustained transitive relation to the whole to persist as a condition of acting on its elements [LAD 04b]. The primordial question, however, remains that of how scientific research's intervention power may effectively participate in this process of topological structuring. This is where our descriptor, the double destabilization effect, comes into play. A constructivist division is made between the work on the conditions of learning in a situation, the necessary fragmentation of knowledge, and work on the way that the functional teleology organizing research activity is received (contradictions and resistances). In this case, the psychomorphically connotated vocabulary used to describe the action processes has no other goal than to objectify the crucial moment of scientific intervention in the social field. It seems impossible to objectively apprehend this intervention if we do not address the dimension of shock or disturbance that dissociates scientific intervention from the pragmatic belief in its own production of truth and social efficiency. This critical moment in the process of intellectual intervention in society is at the root of two major axes of its operationalization: work on the fragmentation of knowledge (truth) and work on the contradictions within the social interests which it claims to meet (social efficiency) [MAE 16b].

Historical consciousness forms a crucial backdrop for understanding the connection between these two axes. Without it, the relation to these issues becomes strictly factual: a certain diversity of knowledge is taken for granted, or the need to account for contradicting interests is seen as a constraint. Taking these elements as givens, they are, in fact, preconstructed and therefore have no real impact on the process, itself preconstructed, which led to these issues' identification. This triggers the spontaneous use of a schema of complementarity as a response to a need which can be mastered without any fundamental change: some knowledge is a useful addition to the scientific approach in its pregiven holistic process, such as the fact of anticipating contradictory approaches in the implementation of possible solutions, which can complete our imagined representation of a revisable solution in a predefined regime of suboptimality. The resulting intervention broadens the social attention of science without fundamentally modifying its governance. In this sense, RRI may be limited to a checklist of indicators of the quality of research policies' implementation. However, if the guiding principles of RRI are to move beyond the direct effects of each specific research process, in order to connect them with the holistic potential that

must be taken into account in science policies adapted to its true power over society, then we need to establish a *governance framework* for these principles that is up to the task at hand: not simply broadening the social attention of scientific research, but rather *transforming it by establishing the conditions for constructing an examination of its historical action, which allows it to reconsider its own action as an intervention mode by which society acts on itself, and which allows it to diversify its intelligence so as to avoid reproducing obstacles to innovation.*

6.2. The fragmentation of knowledge

Historical consciousness of intellectual intervention in society provides a useful backdrop in terms of the perspective that it offers on the dynamic structure of change: any form of scientific intervention participates in a regime of action and is linked to a situation. It is based on a process of transmitting empiricoformal knowledge, with its own procedures of accumulation and self-validation. However, it also participates in a social process of regulation, which aims to circumscribe the effects of situated knowledge in order to enroll it in its self-orientation practices. This structure, under tension, gives birth to a process that may be compared to a methodological pathway of trial-error-elimination, but which is itself constantly open to reinterpretation and realignment in accordance with new preferences arising from the context of action. This fundamental instability may appear to be offset, in part, by the stability of the modes of knowledge transmission. However, these modes themselves are constantly disturbed in their implementation by the instability of the context. The backdrop of historical consciousness of intervention is therefore fundamental, as it offers a metastable perspective in relation to the permanent operational tension that defines the relations through which situated science is constructed, namely by the incorporation of competition rules for the research market.

While the principle of a topological approach to this instability is useful for pinpointing the specific moment of operational engagement, a metastable perspective is necessary in order to establish a strategic horizon and to consider the medium- and long-term effects of behaviors. This metastable perspective is provided by viewing intervention as an action endowed with a holistic power, allowing actors to modify the way they believe in a crossing point between research interests and their targeted social situations. A

research action with an indirect effect that allows it to direct attention toward its action on a level that goes beyond its immediate results and to claim its social interest according to guiding principles, which transcend a given situation constitutes a mediation relationship with regard to the common interest at stake in each research project and may be operationalized through them. From this perspective, a more egalitarian society based on fair resource distribution and participating in the construction of a collective intelligence for a sustainable way of life could be played out in a manner, which is simultaneously concrete, indirect and mediated, through each intellectual intervention.

This macrohistoric stage for social transformation through the modes of governing knowledge production is not based on a fictional notion of speculative intelligence, producing a form of illusion. Quite the contrary, the modification of both the imaginary relation of research to itself and the conditions of meeting social interests in a research project is at stake. In short, this involves a political will to develop the means of co-constructing a common interest through intervention in the potential intelligence of reality. It involves a double process with the potential to develop a way of permanently examining the intervention taking place, against a backdrop of the historical consciousness of intellectual intervention as an unstable, but also holistic, process.

The first task to carry out in this context concerns the production of truth and its dynamic of transmission through knowledge. In recent years, researchers have been unable to ignore the necessity of multiplying the forms of knowledge that may be mobilized, and thus to overstep the boundaries between disciplines in order to obtain experience-based knowledge, accumulated in relation to specific requirements and in specific contexts, with no intent of generalization or conformity to a language of validation [DAR 12]. This more or less formal, generally hybrid, knowledge may enrich approaches based on generalization and self-monitoring. However, the main issue does not lie primarily in a methodological broadening of available sources, or in the construction of enquiry processes better adapted to this diversity of knowledge, or in the removal of barriers between epistemic communities in order to redefine the meaning of expertise in accordance with extra-disciplinary criteria. The work which must be concretely carried out does not depend on the way that a new use for

knowledge may be produced according to its diversity, but primarily on the way that this situation of toppling the knowledge monopoly will be appropriated and reinterpreted; in this global situation of knowledge fragmentation, the priority is to reinvent cooperation modes for the production of truth.

This process is well known to decoloniality theorists [MIG 07], some of whom have contributed to the creation of new ways of organizing knowledge transmission at the academic level with reference to the sapiential traditions destroyed by colonization [MAT 09]. Civilizations with a different way of life to that found in modern western society – which focuses on organizing knowledge through investment, maximization and capitalization, thereby favoring standardized solutions which can be managed through industrial processes – have also produced ways of organizing knowledge that, in both economic and social terms, are far from being limited to the rudimentary hierarchical order of mythological, or “prelogical”, societies. In relation to our concerns here, the issue does not lie in accessing a sense of cultural difference, openness to other worldviews or other action disciplines, as in Weber’s *The Protestant Ethic and the Spirit of Capitalism* [WEB 64]. Instead, we must consider the working pathway by which a fragmentation of knowledge may effectively become both acceptable and fruitful. We are not so much concerned with the effects of difference, but rather the crucial effects of differentiation, i.e. the fragmentation of knowledge’s supposed identity, which becomes “disunited” in its internal differentiation as non-identical to itself. It is important to avoid fixating on a certain understanding of the knowledge employed and whose value we aim to increase through research. The condition for any knowledge to develop, whatever the available methodological resources, lies in its capacity to achieve a distance from itself, to not shy away from the shock produced in collision with other approaches but instead use this as an opportunity for combination with them, turning away from the process of repetition with its presumed guarantees.

Several movements attempted to undertake this radical transformation of the relations to knowledge toward the end of the 20th century, for example cultural studies and gender studies. Their significance should not be approached from a semantic perspective, but rather, as Butler suggested in the case of feminism [BUT 90], from a pragmatic perspective. However, the

pragmatic shift is not sufficient, as it presumes that actors are capable of acting in new ways simply by considering new perspectives. The difficulty of the shift lies in the preliminary work that must take place following the fragmentation of identity. One term used in decoloniality to describe this passage to the non-identical is “unlearning” [MIG 14]. This indicates the difficulty involved, as it negatively proclaims the impossibility of relying on what was previously considered as a rule of learning.

Nevertheless, the aim is not to exchange one categorical system for another, but to act differently. The fragmentation of the identity of knowledge highlights a hole in the order of any organization of knowledge, necessitating the use of relationality in its construction. This system of relationality is what must first be thematized to enable operationalization. New learning modalities may then arise from this relational system, alongside new forms of knowledge.

The fundamental aspect, which we wish to highlight, lies in the need to work on the relational uncertainty that conditions such an approach to knowledge construction. While knowledge production has followed a similar pathway to that seen in many professional sectors, consisting of protecting expert associations by homogenizing and labeling procedures, we now face the need for a fragmentation of knowledge that goes beyond disciplinary decompartmentalization and the border between public and private funding bodies. If we are to grant legitimacy to the natural knowledge that every daily activity builds about the precise problem it tries to solve, thus giving it a chance to participate in a larger problem-solving process, the collective production of solutions must be able to diversify their potential information sources and address the risks of opportunism when resources are concentrated in and drawn to influential nodes.

However, the problem is not primarily a methodological one. The issue does not concern the ideal construction of an order of argumentative symmetry in order to avoid biases introduced by the opportunistic calculations of aligning interests or the supposed advantages of a dominant knowledge, which is already operational and supported by prevailing interest groups. The key does not even lie in the progressive nature of a dialogical process sensitive to asymmetries and the benefit of building a new common perspective, even if such a process goes against the ideal schema of

symmetry. The essential element is that intellectual intervention must relate to this relational uncertainty as a decisive opportunity to learn from the other, from things that first appear inconceivable, unusable or too weighed down with specificities. For intellectual intervention, this moment of truth where it reconnects with reality is the point at which the unity of its cognitive position and the confines of its recursive operativity are broken down. Intellectual intervention cannot, therefore, be bound to a form of knowledge competition, and less still to an abstract form of perspectival relativism. In our opinion, the fundamental element for intellectual intervention is the ability to “expect” and prepare for challenges to its status as a form of authority on the truth of action in the name of its cognitive construction. It is thus absolutely crucial for any intellectual intervention to remain attentive to this zone of development wherein external elements grant the opportunity to achieve distance from itself and to go beyond what is taken for granted in an uncertain process.

Considering research carried out by Japanese philosopher Yasuhiko Murakami on questions as critical as autism, vegetative survival or brain death, we were struck by the distance which appears between the biomedical technical knowledge of these issues and an approach, which could be called anthropo-phenomenological, based on the self-observation of a secondary knowledge source, that of nursing [MAE 14, MUR 06, MUR 11]. Along the same lines, the exceptional work of Christophe Dejours [DEJ 98], for example, was necessary in order to create a place for more empirical knowledge of workplace suffering and to obtain legal recognition of these phenomena, which had previously been buried in social law. Phenomena such as burn-out and its early stages of burn-in can only be treated as social issues if the discussion results from cooperation between bearers of different types of knowledge. Many other areas stand to benefit from such a deroutinization of traditional modes of knowledge production to reorient the ways they intervene in social reality.

What is most crucial for reforming intellectual intervention in society in this way is its starting point. This depends on whether or not knowledge agrees to relate to its own limitations as a zone for proximal development. The interesting element lies in that which remains untouched by the intervention of knowledge in society as we know it, and not the mirror offered by the projection of its excess power. Failures, gaps or simply unsatisfactory elements mark an interest in intensifying research; this time,

however, this research must be approached and produced in a different manner, with the associated risk of introducing unknowns into the relational structure of knowledge construction. This possibility of recreating the ways that knowledge may socially intervene depends on how it takes encountered markers of social limitation into account. A more voluntarist governance of RRI might, in the long term, become this fertile ground for knowledge production.

6.3. Contradiction and pluralization of real interests

Up to this point, we have focused on the link between transforming intellectual intervention in society and the fragmentation of knowledge. As researchers facing critical questions of ecological transitions toward sustainable modes of development have already seen [DED 14], the creation of new relationships between academic and practical knowledge is essential, but their implementation is far from easy, since by changing any one knowledge relationship in the social space we alter the entire matrix. Komiyama and Takeuchi [KOM 06] describe this difficulty as the result of a quest for balance between three systems, which need to be kept in a state of positive interaction: the ecosystem, the socioeconomic market and the demographic system. The connections between each of these systems produce fundamental problems for the modern world seen as an unstable set of subsystems: for example, global warming results from the connection between market production activities and the ecosystem; the needs of mass consumption exert pressure on the production system via demographic growth; and climate and health issues present a risk for populations based on the hazards of the current ecosystem. To avoid the creation of a vicious circle, it must be possible to implement each specific solution offered with regard to one of these threats in harmony with other proposed solutions [SUM 08, p. 169]. This general context gives an even more radical meaning to the need for a different conception of intellectual intervention in society, following its capacity to coordinate fragmented knowledge in order to promote mutual information and cooperation.

However, any gain in extension necessarily requires an increase in understanding. This occurs through a modification of the essential and, in modern eyes, almost exclusive relationship between knowledge and its subject domain, a domain that is methodologically defined and preconfigured in a

way that guarantees self-validation. This is the question of the identity of knowledge, guaranteeing a sector of expertise and autonomy of action. In this framework, the creation of networks and the promotion of cooperation limited to specific domains and objects already constitute a political victory. Consequently, extension has generally been considered as responding to externalities belonging to an order of externality, the result of an imperative need to mobilize in the face of a common danger.

We must now move beyond this implicit division of tasks in order to enable a more efficient extension of all mobilizable knowledge. The idea is not to aggregate knowledge outcomes in order to strengthen their expected impact, but rather to break the pre-given relation to a subject domain and to an impact in order to promote the emergence of a differently structured action with an entirely new striking force.

The organization of cooperation between different types of knowledge in order to modify the way they intervene in society is not simply a functional problem of institutional politics; first and foremost, it relates to a problem with the way that these knowledge domains relate to themselves in their own self-structuring process. We first approached this problem through the idea of a new relationship to be constructed through the fragmentation of knowledge. However, the ultimate point of resistance with regard to this way of transforming intellectual intervention in society, based on broadening the egalitarian participation of all parties in the production of solutions, lies in the relation to power. Intellectual intervention in society is also deeply marked by microhegemonies created around subject domains by the history of modern science. These spheres of power may be the result of arduous competition and subtle selection mechanisms involving the habitual social effects of notoriety and recognition, but they are also the source of a preventive behavior that makes areas of controversy particularly poor and random [GOD 02]. As harmful as it would be to wait for a relation to knowledge fragmentation to spontaneously arise, it would be just as pernicious to count on the luck of “socially assisted” hybridization for the paranoia linked to preserving spheres of micropower to heal itself.

These spheres of power may only be called into question when the existing intervention modes engage in a certain type of self-work aimed at fragmenting these power relationships. This is not a question of revolution or shock, but rather of a specific and adapted task, internal to the intervention

processes themselves. This task consists of decentering the relation to the subject domain toward a “terceizing” relation to social interest, which indirectly mobilizes this object of expertise. It involves negotiating the relationship between an object that constitutes a discipline’s internal power and its mobilization by a social interest that decenters it. Thus, negotiation becomes centered around the way power is distributed with regard to a subject domain, whose extension is partially, provisionally and hypothetically redefined by its incorporation into the need of another party.

It might be suggested that this process is one of negotiating the conditions of sharing a power of expertise. However, it goes further. What is at stake is the possibility of co-constructing a new way of relating to power in the production of collective intelligence. Not only does what was originally squeezed into an ideal model of knowledge evolve progressively through intervention in order to produce a co-constructed action knowledge, but matters of power related to intellectual intervention redefine themselves, creating a new community of action. Modifying the relation to power is simultaneously a way of modifying the action community built upon modes of intellectual intervention in society.

An RRI policy must reach this level of analysis in order to fully ensure its coherence. Our greatest influence in this respect is Enrique Dussel, due to the particular way his approach and questions are situated [DUS 98]. At first glance, Dussel’s approach seems to have nothing to do with questions of reflexively governing of RRI. His problem involved situating an intellectual approach in solidarity with the communities of victims on whose behalf he intended to speak. In his mind, such an approach did not involve executing a symbolic act, demonstrating an ethical quality external to the questions concerned. Instead, Dussel wished to create a process of conceptualizing the ethics of globalization in terms of the victims of globalization processes, but in a way that such a conceptualization would be intellectually dependent of his own true motivation, i.e. the focus on the victims. He therefore needed to uproot the act that motivated his ethical approach in order to resituate it within a real community, and thus accept that he no longer had the final word on what motivated this approach, anchoring it in a meaningful hole, he and others were to point out. This incomplete approach marked and pierced through by its “peripherality” (*perifericidad*), the meaning of whose power is still be cocreated, forms a new type of science that Enrique Dussel took to calling transmodern [DUS 05, SAI 16].

This is the point in which we have been working to define a new way of approaching how power connects with both the social interest of science and with all of the parties concerned by a process of scientific research. The aim is not to contest the power that may be produced by research activities in a problem-solving process, not to denounce the opportunistic relationships that existing interests attempt to create with actors involved in research in order to harness the results and reinforce their social advantages. These symptoms, which may be serious, indicate first that research intervenes in conflicting, preoriented realities, and that it constitutes a specific junction with a concentrated opportunity for bifurcating practices, or, at the very least, for transforming the conditions by which concerned interests are aligned. However, this social effect of research is not the primary target of reflexive governance, even though it acts as a connector between the power that a scientific discipline aims to maintain over its objects and legitimation methods, on the one hand, and the cumulative power that may be obtained through choosing particular alliances in order to engage in social competition, on the other hand. The direct anchoring point targeted by reflexive governance is the process of constituting a node of power within the intervention activity of research. This creates an action community bringing together subsidizing authorities, presumed beneficiaries and research agents. Power either effects a first change on this level or gets sidelined, reproducing the predefined social order. The challenge for reflexive governance is to succeed in putting this first *community* level of power production to work. Only when research becomes constitutive of a new co-constructive relation to power for all of the parties involved can it produce an action community rather than reproducing a predefined order.

The idea of decompartmentalizing knowledge is of limited interest if it does not simultaneously participate in work on action identities' resistance to change, while also modifying the relation to power by paying attention to the process of associating interests, in any research and innovation activity, which goes beyond the simple aggregation of different optimization calculations to favor a cooperative system for finding shared solutions.

In this specific type of community, the distribution of power is not definitively established according to rules set up before its establishment, which existed before the association, concerning elements such as private or

public funding, knowledge, legitimacy, depending on who is financing the project, who holds the keys to knowledge production or who is granted stakeholder status in the chosen questions. Research and innovation create a new regime of action, corresponding to a community in which roles may be exchanged, circulate freely, or even enter into competition. The problems to solve may evolve, be reformulated in the course of action or branch out in new directions, due to the very structure of action which is specific to the association of the different parties. The power to act together on contradictions or on possible expansions of interests, while preventing conflicts of interest, is constructed at the level of the action community; this power is a necessary condition for a community of action to effectively become a *community of destiny*.

6.4. From intellectual intervention to the community of destiny

The horizon regulating the process of reflexively governing RRI is the passage from intellectual intervention to a community of destiny. This community is the result of collective work on knowledge and role sharing in the construction of research and innovation endeavors in society. As we have progressed along the different aspects of RRI, all signs point to the fact that this community of destiny can never emerge as a simple consequence of ongoing processes. It is dependent on collective work continuously carried out on research and innovation endeavors, mobilizing all of the actors concerned, each with their specific expectations and cultures of action.

This book, far from representing an extra load for the routine processes of different established disciplines, aims to create a more dynamic means of relating to the social interest that is marked within any research and innovation process, but which may be provisionally put aside or treated as an externality, or even instrumentalized in order to attract development opportunities by insisting on an imaginary matching process between a problem and a desired solution. However, social interest can never be defined once and for all, and it may slip away from the partial representations used by different participants. Social interest is an empty space that different actions (such as fund raising, brandishing results, or even the promise of imminent results) attempt to fill in their own way. This empty

space, however, allows us to simultaneously harness resources, mobilize skills and align individual interests. By better developing its dynamic function in the production of collective intelligence, it becomes possible to bring new signified elements together under the signifying power of action, while also unleashing the powers for creativity and attractiveness contained in its signifying potential. Instead of limiting itself to the validity and efficiency criteria of an elite with entrenched methods of knowledge management, the development of intelligence may be extended to concern the social capacities for turning individual activities into common activities by way of a shared destiny in the search for relevant and effective solutions.

There is already a certain awareness of a sort of tipping point whose existence entails that a technically identified problem may not find an effective solution without a broader way of mobilizing both action and knowledge. Preventative actions in the field of healthcare are a good example of this. It is impossible to find a solution to a problem such as obesity in a population without acting through preventative campaigns. The question of managing the flow of household waste and the issues surrounding the accompaniment of aging in certain populations also require approaches of the “promotional” type. Things would be very different if this tipping point was already worked on and anticipated within all processes of research and innovation, as a potential zone for the development of social interest insofar as it creates a possible place where a community of destiny can mark its continually codetermined common destiny. In this case, it is no longer a question of exchanging representations to work toward creating a collective imaginary reservoir of solutions, which have been thought out elsewhere. Instead, we must co-construct problems and their solutions via a new type of cognitive community: a reorganization of scientific productivity according to its valorization by broader collectives.

Our approach goes beyond what might appear as an overidealized fiction while calling into question the monopolistic vision of problem-solving processes. This is because our approach is not an idealist one. It does not contest the need for segmenting the modes of specialized knowledge production or breaking up modes of funding regulated by the principles of intellectual property. Our question is that of connecting all of these processes, inherited from modernity, with the reflexivity of the social body concerning its limitations and obstacles, as a means of moving past them. It is thus a

materialist issue of scientific productivity, informed by the uncertainties of social interest, working toward its own “*deinstitutionalization*” in order to allow new modes of use to emerge within its internal processes.

This is why we have insisted on taking our approach back up from the perspective of a political philosophy of intellectual intervention in society. The two pillars of scientific productivity that are directly challenged by this approach are knowledge and the power that results from it as a way of controlling and validating its own normative recommendations: the relation to the supposed unity of knowledge’s validity is fragmented, and power is shared in the co-construction of the community of destiny driven by proposed solutions. Such an approach radically destabilizes both the imaginary relation to truth production and the satisfaction of providing solutions for a social other whose externality has been predetermined.

The problem we have identified does not lie in the symbolic capacity of science to reduce collective uncertainty, which is certainly what it does best! The major issue lies on the flipside of this process, which comes with a foreclosure of identity and the entrenchment of a context made up of expected roles. This is the problem with this process of production and enjoyment, relating to the space reserved for the undeterminable, the currently inconceivable – the “bare life”, as certain authors would have it – to participate in new ways of using knowledge in order to create new forms of life.

This problematic dimension of social interest, which already marks all research and innovation processes, should not be ignored or reduced in order to churn out provisional and ideal advances. Instead, it must be the subject of specific work with the aim of benefitting from its dynamic resources within research processes themselves. Canguilhem, in speaking of the role of epistemology, used the metaphor of the “border of a scientific domain” [CAN 88, p. 18], the relation that a state of research maintains with the directly preceding situation of knowledge from which it both proceeds and distinguishes itself. For each research process, there is a form of “edge to edge” history that, through recurrence, links it to earlier sources or aspirations. This retrospective vision is necessary in order to theorize breaks and the new orders they give way to. However, we have focused on another type of border, which in this case is internal to research processes

themselves, indicating the marks of social interest that the research practice is supposed to use to direct and define itself. Unlike the ideology whose practical operation employs the “extension to the totality of experience” to justify “the interests of a type of society” [CAN 88, p. 43], social interest remains an empty mark, independent of the varying conditions for the historical production of a particular society. This is the absent cause of the scientific process, which can only be challenged and mobilized as a creative gap by work specifically centered on it. We must reinterpret that which fundamentally directs the productivity of scientific approaches as response or problem-solving systems, while acknowledging the need for them to be reconstructed as a community of destiny. Hence, in tune with reflexive governance, Canguilhem’s words keep their pertinence: “In order for science to make use of data collected in pre-existing practice, that practice must be translated into conceptual terms; theory must guide practice, not the other way around” [CAN 88, p. 108].

Scientific productivity has progressively organized itself as a set of self-regulated procedures, while simultaneously becoming the dominant mode of establishing collective intelligence [LAD 73, p. 82]. The responsibility it bears toward the community of destiny’s self-production through technoscientific development, thus, was a practice preexisting its own conceptualization, just as each individual research project constructed its own standards of responsibility with reference to its domain’s productivity before being conceptualized as being involved in the community of destiny it had always effectively participated in. This “preexisting practice” might continue, but could not be *directed* in the way Canguilhem meant it, that is, be simultaneously governed with direct reference to in connection with the form of life it helps to produce.

This conceptualization is in no way a specialized theoretical act, as the historical epistemology envisaged by Canguilhem would be. Instead, it involves a collective process of thematizing the sphere of this “preexisting practice”. This thematization results in a different historical consciousness of the responsibility held by intellectual intervention in society with regard to the community of destiny, which may build itself in step. This historical consciousness stems from two modifications of the relationship between research and reality: one concerns knowledge as the production of truth, while the other concerns power as an action on the expectations of others.

Following on from Ladrière [LAD 93, p. 55], what we call “historical consciousness” is the moment of reinterpretation that guides the process of thematizing one’s intervention in society. It is not, therefore, a moral map that determines when it is necessary to speak out or take a stand. It involves guiding a preexisting and ongoing practice, creating the “zone for proximal development”, which allows for the co-construction of what truly makes it a mark of the social interest of a community of fate. The key to this guiding process lies in permitting, as we have seen, *the fragmentation of the relation to knowledge* that takes place in the search for solutions alongside the *de-institutionalization* of roles meant to secure power distribution in the production of normative orientations.

Through this schema of intellectual intervention, the most important fact to emphasize is that a community of destiny does not arise spontaneously as a response to major collective challenges through the repetition of preexisting practices, nor does it emerge voluntarily through a greater awareness of a common duty or interest related to such challenges. A community of destiny is made by working on ongoing actions so as to build toward it via the progressive enlargement of cooperative nodes and power-sharing operations. Common destiny is a construct, which depends as much on the knowledge that feeds it as on the power that can determine how it exercises its influence and choice. It is thus fundamentally dependent on capacities for creativity or iteration concerning how research and social innovation are used. Imagine the powerlessness we would have to recognize if such cognitively productive societies were unable to broaden their own relation to knowledge! Or if societies so concerned with participation, equality and inclusion proved unable to transform the modes of power sharing, which regulate their cognitive productivity! In positive terms, many steps have already been taken in this direction, both in terms of decompartmentalized knowledge, which has opened itself up to natural, local and community knowledge, and in terms of power, through efforts to contractually tie research commitments to the public good, notably through deontology and the ethics of responsibility. We must simply carry this “preexisting practice” all the way through, and use what it tells us to conceptually reinterpret governance as a process of transforming the uses of intellectual intervention in society.

6.5. The possible role of political philosophy

Faced with a task such as this, philosophy has more to offer when it focuses on constructing the reflexivity of different domains of knowledge than when it defines a particular symbolic discourse whose job it is to mark out practical reference points for our times. Right now, there is a gigantic and multiform effort of knowledge production and solution seeking across all major domains. This effort itself results from a marking of social interests that, as a collective signifier, cannot be determined or appropriated. At the same time, the effort produced interacts with problematic environments, mobilizing resources and developing expectations. Moral standards, collective perceptions of suffering and the human relationship to both violence and the victims of violence all evolve through this social process. Faced with recurring experiences of powerlessness and dissatisfaction, the preferred seat of intellectual intervention lies in this vast action of society on itself, in enquiry and problem-solving processes and in the ways they are controlled or shared.

If it makes sense at all to intervene philosophically, it is at the level where social reason can take up residence as the middle term of common destiny. It is never an illusory hypostasis, making up some sort of great Subject of the common interest; social reason is, on the contrary, a tense moment refracting expectations and contradictions, with a constant risk leading to the repetition of what is already known in order to reduce the uncertainties of the present. Only by interrupting this process of repetition, by entering into the moment at which knowledge and power over the common interest overlap, does it become possible to steer the gap toward iteration, i.e. to co-construct the operating conditions that make it possible to envisage an uncertain form of life in order to find a way out.

A philosophical approach would certainly be able to offer a theorization of operations allowing the direction of a preexisting practice by thematizing its potential for innovation. However, it may also make use of the history of reason, which allows it to reinterpret common destiny on a specific and decompartmentalized level of generality, as a practice (and not a substantial fiction of progress) which is cocreated, and also has the potential to reach a new understanding of itself in this same light via points of attention, criteria or indicators relating to the developing collective.

This is the task of reflexive governance, developed as political philosophy. It requires being up to date on neighboring theoretical approaches within the social sciences, particularly organizational theory and institutional economics, alongside the political and sociological theories of governance. We see this as the price to pay for a relevant and useful philosophical approach at the present time. It cannot afford to operate without other knowledge sources, much less light the way by repeating their diagnoses; it must start with the organized and institutionalized action of the knowledge that produces the normativities used by society to reduce uncertainty, and attempt to integrate the role of a transversal reflexive operation on these modes of organization, through the preferred prism of collective responsibility taken on by all of those processes that claim the social interest of their truth with regard to the real environment in which they operate.

It is, therefore, crucial to avoid philosophical redundancy – consisting of simply amplifying a supposed dawning awareness of issues with rhetoric – and to promote, instead, an interaction with the ways of conducting research processes in which the social effect of scientific truth takes hold. All existing institutional arrangements aim to respond to problems and provide solutions through their methods of enquiry and experimentation, but the way they increase cooperation between different knowledge sectors by accepting move beyond their own epistemic boundaries and the way they redistribute the roles involved in validating obtained results introduce a new type of uncertainty. There is a temptation to limit one's responsibility as an actor in research and innovation to the risks that we are certain to master or, at least, to partially anticipate. But while the focus is on contributing to the production of new forms of collective life with an increased capacity to produce new solutions that truly arise from a new marking of social interests, this type of epistemic risk might be considered impossible to include for disciplines, which are entrenched in their own routines. However, it is also possible to increase the reflexivity of institutional arrangements to reach a high degree of deroutinization by including organizational and cognitive efforts realized in order to respond to social needs, and by isolating the operation of attention that allows this reflexive inclusion to be constructed in the course of action.

These contributions may be produced using a reflexive theory of governance, constructed as a political philosophy of social learning. By focusing on preexisting research practices, it conceptualizes attempts to

broaden knowledge and roles in order to better direct their operationalization. Henceforth, the gaps that may appear as factors of uncertainty in the relation to knowledge fragmentation and power transformation become spaces of opportunity for avoiding repetition mechanisms. By ceasing to repress the empty space that is social interest, which provokes different response attempts using saturating (but always partial) solutions, it is possible to take on the responsibility of research in collective processes based on the reciprocal limitation of cooperative knowledge and the deinstitutionalization of pre-given roles in the production of solutions. In a way, we must cross the temporality of short cycles of producing scientific results, constantly subjected to a schedule of deliverables, with the longer temporality of cycles involving modifying ways of life. It is, thus, possible to reconsider the core of the epistemic work that reflexive governance of RRI aims to provide on the basis of crossing these short and long cycles of epistemic productivity.

6.6. Long and short cycles of RRI governance

There is no doubt that the main concern guiding the choice of research and innovation processes is productivity. The quality and operability of the results obtained are subject to a social pressure, one that is also present in processes of skill aggregation and network monitoring. This productivist activism takes the form of a constant flow of interconnected signifiers, which simultaneously directs both efficiency diagnostics and problem-solving processes. It is this taut discursive flow that we will call the short cycle of research and innovation. It creates a form of energy arc between a voluntarist mobilization of resources and feedback on whether or not social demand has been satisfied. Scientific production is oriented toward meeting a social need for solutions, while the base of epistemic resources is oriented toward the concrete realization of their social utility through the medium of research policies and funding. In this environment, identified problems are what direct the focus of research operators, while also forming part of their legitimacy. The cognitive operations carried out by these operators appear to depend on the contexts that call for their expertise; such operations' utility is relative to their methodological capacity to participate in a perspective of enquiry and problem solving. From the outset, processes of this type are dominated by obvious criteria, such as transparency, predictability, participative quality and accountability (including a requirement of openness to the interests of concerned parties in civil society), which are used to guarantee the effectiveness of their governance. The short cycle is therefore

focused, to cite Vivien Schmidt, on “what goes on inside the ‘black box’ of the political system, between the input and the output” [SCH 10, p. 5]. From this perspective, RRI governance consists of attempting to implement a series of *substantial* orientations (taking account of specific objects or questions) within the “black box” in order to guarantee a social impact that is coherent with the values of a general policy. The best way of supporting this approach thus involves the use of indicators that are themselves *substantial*, i.e. which aim to identify how operational choices have attempted to establish a causal connection between those research orientations that are marked by RRI and a supposed social impact of RRI [SCH 10, p. 11]. These efforts of adaptation made within the “black box” of short-cycle operators may be considered as a form of learning, that is in this case, as the reinterpretation of routine practice in accordance with a new constraint, which may, in the long term, grant means to highlight and select best practices via a process of recording and comparison, thanks to the follow-up activities of the monitoring authority.

While this short-cycle regime is crucial for implementing an RRI policy, it is also necessary from a reflexive point of view – i.e. in order to benefit from the shift already produced in action on action – to consider RRI governance in terms of a long cycle and to immediately undertake its implementation. The challenge for RRI governance does not simply consist of creating an external shock that is supposed to trigger adaptation and thereby spur on the creation of good practices. On a more fundamental level, it involves acting on the relationship between society and its capacity for self-transformation, via the processes of epistemic production, that it creates around partial expressions of its interest. It thus concerns the truth of this interest, its common knowledge and a possible distribution of roles in problem solving, and hence a certain iteration of models structuring how action on itself is directed.

The problem of the long cycle lies in the capacity to act on the flow of signifiers produced by the activism of short cycle, in order to introduce a horizon for more radical transformation, more directly linked to the construction of a community of destiny, in which problem solving originates from concerted processes of constructing collective intelligence. In this context, learning does not proceed from a process triggered by an external shock, but from work on the self that critically examines identity beliefs, resistance to change, the relation to the compartmentalization of knowledge and the resulting attribution of social roles.

Short cycle of RRI	Long cycle of RRI
Object centered Situated cognition	Actor centered Reflexive praxis
Implementation Monitoring: indicators Learning from without	Capacity building Cocreated attention Learning from within

Table 6.1. *Short and long RRI cycles*

This process creates another energy arc between the fragmentation of knowledge and the redefinition of roles in a community of destiny. We might represent how these cycles are interlaced as such.

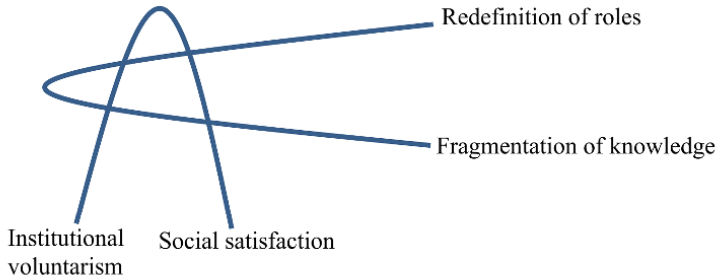


Figure 6.1. *Interlacing of governance cycles (a)*

To take this long cycle of RRI into account, reflexive governance must immediately implement a different approach than the one guiding the short cycle. First, it is centered on actors and on ways they reconstruct themselves following a suspension of the social interest they usually identify with. Second, the key to the necessary cognitive processes does not lie in coupling them with a constraint resulting from the institutional environment; instead, it lies in a reflexive operation that restores a critical relation to the pregiven unity of action found in “preexisting practice” in order to benefit from new relations to reality.

We thus move from an approach in terms of implementing RRI activities and assessing impact to an approach in terms of capacity building and the cocreation of attention to a community of destiny (a form of self-adaptive efficiency). The figure below again sketches out the idea of interlaced

governance cycles, but more explicitly underlines the contributions of reflexivity in terms of constructing capacities and cocreating a community of destiny (iteration).

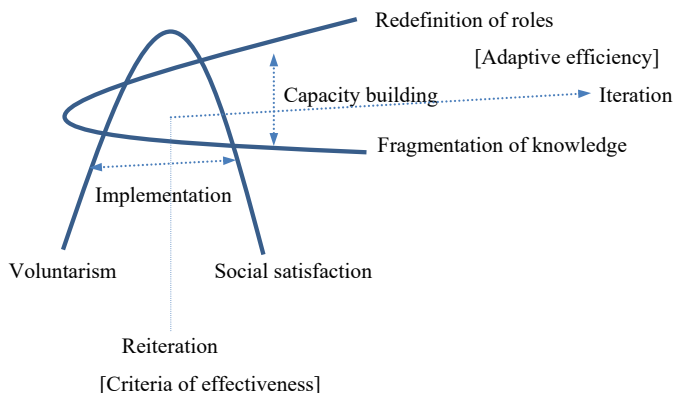


Figure 6.2. *Interlacing of governance cycles (b)*

6.7. A new model for the institution of knowledge?

One presupposition when reflecting on the possible extension of an RRI regime to cover research and innovation in both the public and the private sectors is of an institutional nature. The spaces for producing and articulating knowledge are assumed to be identifiable within the social space. The division between private and public institutions, along with the role of mixed partnerships, seems to fit the conditions necessary for an RRI policy to be applied in such a way that it can act either through direct incentives, by mastering the monetary levers of subsidization or partial funding, or through indirect incentives, by monitoring the validity of practices. However, the evolution of knowledge already occurs through less stable institutional environments where monetary or deontological incentives have no real effect. The collaborative models of expert networks, panels and platforms indicate the need to move beyond the limits of the existing institutional frameworks for knowledge production. Academic distinctions between disciplines inherited from the 19th Century have become obsolete, alongside the territorialization of knowledge that they represent. An economy of knowledge has emerged with its own stock market, complex rating mechanisms, effects of speculative bubbles, disparities between sectors in accordance with trends, niches, etc. However, just as it seems to be difficult to establish rules to regulate financial speculation, it is difficult to imagine

how this knowledge market might be regulated in deontological terms. If a self-regulatory approach appears uncertain within communities of traders and brokers, why should it be any different in the scientific community, where knowledge takes on the value of currency in an increasingly competitive market?

The use of sanctions applied by a different community of interest, such as civil society and all potential beneficiaries of the operations financed by research and innovation, is certainly very helpful in overcoming the illusion of self-regulation by peers. RRI governance would provide a more robust operating structure for these sanctions, to the extent that it allows for a closer examination of the supposedly obvious connection between the social interest of the knowledge produced and the social interest of the expressed expectations. Reflexive governance of RRI aims to create the conditions for working on this shift not only in a short cycle of result production, but also in the long cycle of constructing a community of destiny that involves new roles. However, there remains the question of which operators should be targeted by such an approach in order to overcome illusions of self-regulation within a given epistemic community.

The Canadian texts we have used have the great merit of clearly structuring the relation between the authorities in charge of determining a research policy and the institutional agents responsible for implementing it in reality through operating guidelines. However, this action structure presumes that we may directly address the institutional agents of a knowledge policy. Clearly, we might simply consider that these agents exist, insofar as these types of missions are fulfilled by institutions, who receive public or private funding to this end. Nonetheless, questions remain as to whether these institutions know how to act as agents of a knowledge policy, whether they have the capacity to do so, and whether they are also willing. So what exactly is a knowledge policy, and how does one become an agent of this policy?

Pursuing a knowledge policy, as we have tried to show over the course of these pages, first requires the capacity to make choices in terms of RRI governance and of the social responsibilities it involves. These choices are not limited to the implementation of public policies or to the respect of more or less defined social constraints. They also relate to a process of constructing capacities in order to participate in a community of destiny where the role of RRI must be cocreated and coevaluated. Nowadays, a

knowledge policy must contribute to an evolution of the meaning and role of RRI production in social practices. In many cases, this role has already evolved outside of the formal framework of traditional institutions while often remaining connected to their sphere of influence, for example when validating the quality of an expert through their affiliation with a traditional academic institution. There is, therefore, an urgent need to identify funding mechanisms that are flexible enough to allow an RRI policy to extend its action onto these new structures.

Nevertheless, it would certainly be even more interesting to imagine how new institutional structurations might provide conditions for agency in response to this recomposition of knowledge production.

The challenge is not exclusively to maximize networks' chances to seize opportunities. In order to build strong and focused crossing points between communities specializing in knowledge production, their organizational structures and partnerships and communities of potential beneficiaries, we must reduce the effects of opportunism related to the fluidity of communities and to their volatile relationship with responsibilities that are connected, in the long term, to mutual commitment, mutual influence and mutual transparency. Those who possess the capacity to travel from one country to another, becoming not only multi-institutional but also multisectorial experts, also stand in the end to gain credibility if the necessary crossing points are consolidated, becoming stable references for co-constructing follow-up programs and deepening enquiries. Experimentalism is only interesting as a method if it takes the long view. Strictly speaking, this is not a method of intervention, but a program of collective action, which must involve the construction of shared reflexive governance.

Conclusion

What can we hope to gain by applying a governance theory approach to the domain of responsible research and innovation (RRI)? This is the question that has guided our work in this volume. It has led us to confront issues as fundamental as those of the fragmentation of knowledge between academic disciplines, as well as between theory and practice, lab work and field work. Such a question also raises issues of sharing power between experts and engaged actors or between spokespeople and independent observers, and building a community of destiny where scientists and civil societies, governments and populations, entrepreneurs and local groups may move beyond entrenched identities in order to reconstruct the possibility of a common world.

While we have contended that governance theory is crucial for such a project, it is important to insist that this is not for epistemological sophistication or in order to make things unnecessarily complicated. Faced with issues requiring practical solutions and concrete references, the urgency of the situation might seem to call for approximate theoretical combinations and ready-to-use solutions. The refusal or even fear of turning to such a theory is in fact a concealed compliance with the status quo, since the first fundamental question of governance, as an economist like North [NOR 90] clearly saw, is that of the nature of the social and institutional change. To tackle such an issue, it is not enough to send out mandates to existing practices in hopes of nudging them in one direction or another. This type of intervention already assumes, for example, that an external ruling would be able to produce such a result, that practices have the potential to change direction on command, or that when changes are made we may know where they lead, as if guided by an independent or pre-given regulatory ideal.

The fundamental question facing any approach to governing change, that is the governance of agents' continuous adaptation to events in their environments, is of an entirely different nature. It is a question of stability and identical repetition. In most approaches that refer to a general balance of competing interests in a defined field, action is seen to operate as a system responding to organizational rules that are subject to a metastable regime. This regime serves to guarantee the renewal of the status quo. Resistance to change, risk aversion and insurance mechanisms aimed at reducing uncertainty are all symptomatic of the relationship that an action system's constituent entities have with themselves. These entities first exist on the condition of their potential for perpetuation, i.e. the fundamental belief that their action's unity might perfectly match their environment. The simple fact that a system has already succeeded in establishing itself by synthesizing these entities justifies its capacity to produce solutions. First, it guarantees the perpetuation of these entities in their identicalness to themselves. This self-referential process of action entities as identity structures is the preliminary issue that change governance theory must first tackle. If we want to evolve, improve, reform, or increase the level of responsibility in social practices, we need to move beyond repetitive schemas and move toward a relation to uncertainty that accepts the risks involved in changes that offer new creative possibilities.

This reasoning concerning change is wholly applicable to RRI governance. As Canguilhem suggested, we are presented with two options: we may continue to follow the dynamic induced by "pre-existing practices", and by containing our reflection to the margins maintain the status quo; otherwise, or we must give serious consideration to the uncertainty that arises when we modify the relation to identities, and conceptualize the conditions of change, in the ways that both knowledge is validated and power is shared in any system designed to response to a supposed social interest.

We have tried to show that what is specifically at stake in reflexive governance is this modification of the relation to identities, which is crucial in any attempt to act on the long cycle of collective action, engaging different actors in relation to their responsibility in the sharing of knowledge and power. The concept of responsibility may become a key for changing attitudes in the field of practice, but only on the condition that it is reconstructed in collective research processes, not to draw out the limits of liability, but to build obligatory crossing points between the different spheres of action in question, allowing for a shared construction of new forms of life.

Why, then, is there such an insistence on reflexivity in so-called reflexive governance? Essentially, because the relation to the non-identity of action does not spontaneously construct itself, and we must instead work together through RRI processes to create collective vigilance with regard to a “zone of proximal development”, capable of spurring on the creation of a society of responsible knowledge, i.e. one which is collectively innovative and creative through co-constructed research mechanisms that are politically corroborated in their action.

To understand the role of RRI reflexive governance, the work on minority languages developed in the work of Deleuze and Guattari [DEL 80] or Jean-Jacques Lecercle [LEC 02] seems useful. Following Deleuze’s considerations on the language used by Kafka, Lecercle notes that the use of a minority language is a collective act with specific political properties. In his view [LEC 02, p. 243], this use has three major characteristics that arise from its resistance to an environment that denies the differences between them: (1) use of the minority language comes with a strong element of deterritorialization, as if relating to a bygone age or deforming the present; (2) its utterances are perceived as being directly political; (3) everything expressed through this medium takes on a collective value. The use of the minority language causes the dominant language to be minoritized in a certain way [LEC 02, p. 167], which, in return, challenges the very legitimacy of minority language use. The Martinican writer and essayist Edouard Glissant further specified the scope of using a minority language by contrasting two types of poetics [GLI 87, p. 402]: the dominant one characterizes a situation in which the meaningful content of speech immediately and effortlessly lines up with its targeted reality; the other seems forced, made to take a detour, weighed down by implicit emotional content and incapable of precision, even though they refer to the decisive interests excluded from the ideal fit offered by the dominant register. The first form of poetics claims both etymological and syntactic predominance; the other possesses merely a *phonological* advantage of shifting speakers’ attention toward an elsewhere that escapes and resists them. This forced poetics is not so much used to mirror something lacking in the dominant poetics, but rather points to a gap that destabilizes the dominant form’s relation to the interest that determines both collective utterances and the way they mark social interest.

Within RRI policies and existing RRI processes, reflexive governance constitutes a form of forced poetics tied to the use of a minority language. It raises new questions, requires different mechanisms of directing attention and mobilizes a new way of conceptualizing existing practices. Reflexive governance aims to invest in this cognitive effect in order to guarantee its social reach, without attenuating either its tension with the dominant poetics or the specific demands for shifting unquestioned beliefs about how social interests are marked in existing practices.

While an institutional action targeting the construction of responsible processes will inevitably create a sort of minority language on the margins of RRI policies' social development, under what conditions may this language become an asset for a type of governance attentive to the gap it helps bring to the surface? To follow Canguilhem's assertion, which we have borrowed as a sort of guideline, the minority language must be able to produce new ways of conceptualizing research that challenge preexisting practices and direct them toward new areas of development. Even if it is still underdeveloped, needing to be defined using a participative methodology and open to bifurcations, this minority language expresses a proximal zone for restating social interests and sharing social responsibilities, which opens the way to new response capacities for collectively identified challenges. The perspective offered by this minority language is a way out of the spontaneous poetics of science, which can only repeat the certainty of its identity in relation to the social value of its knowledge. Reflexive governance of RRI means that we must follow the unexplored path of a forced poetics capable of formulating the permanently incomplete project of a shared interest that must be continuously co-constructed. Following Glissant's idea [GLI 87], this type of poetics consists not of opposing, but of connecting fundamentally different enunciative mechanisms, one dedicated to order and truth, the other to the marking of social interest and to the power of the reality that determines it.

The expression of a determining interest relates to a particular enunciative experience, which requires us to move away from the atavism of self-referencing disciplinary fields, marked by identical repetitions of their social interest. A minority language of RRI attempts to play on the gaps between different language games in order to construct new ways of expressing shared responsibility within cooperative structures. Glissant the poet used the provocative expression of a necessary "creolization" of knowledge. The communal expression of an interest for gender, climate, justice, education,

equality or the accessibility of knowledge, within processes deeply submerged in self-validating cognitive models, involves recomposing enunciative registers and accepting the need to act upon gaps and proximity structures that no longer guarantee the identical repetition of a single atavistic order of knowledge. This is the risk to be governed in research and innovation in order to work toward the interlacing necessary for the construction of a society where a common world that all find livable becomes possible. The forced poetics of responsibility not only enables the construction, through new semantics, of a new approach to the results and effects of knowledge, but also the identification of a way to collectively produce research orientations, that is collectively defining a democratic RRI policy.

The challenge facing the reflexive governance of RRI is thus to provide long-term support for processes that re-express the social interest of science's "pre-existing practices", in order to benefit from the iterative power of the non-identity of these practices, which are situated at the border of the private and the public, the global and the community-specific, science and belief, politics and civil society. With this we can promote and oversee new forms of uncertain arrangements among all of the different parties involved.

Enabling responsible innovation in society involves going beyond the repetition of identities, effectively undertaking a process of iteration based on the non-identity of the actors in question. However, this is not possible without the capacity to collectively take on the fragmentation of knowledge and the deinstitutionalization of existing uses, so as to codevelop responsibility with regard to a common destiny. This is what the long cycle of RRI reflexive governance essentially aims to accomplish.

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