
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 police” [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 Maeschalek 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.

