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Governance Situations and Challenges. Conceptualising variety to underpin a socio-normative RRI governance framework

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Res-AGorA – A brief project overview

The EU seeks to become a genuine Innovation Union in 2020 striving for excellent science, a competitive industry and a better society without compromising on sustainability goals as well as ethically acceptable and socially desirable conditions. Europe thus needs to develop a normative and comprehensive governance framework for Responsible Research and Innovation (RRI). This is the major goal of Res-AGorA.

The Res-AGorA framework will build on existing RRI governance practices across and beyond Europe. It will be reflexive and adaptable to enable the inherent tensions in all governance of RRI to be actively addressed by procedural means aiming to facilitate constructive negotiations and deliberation between diverse actors.

The project will achieve these objectives through a set of work packages providing an empirically grounded comparative analysis of a diverse set of existing RRI governance arrangements and their theoretical/conceptual underpinnings across different scientific technological areas (WP2 and WP3), a continuous monitoring of RRI trends and developments in selected countries (WP5) and, based on the cumulative insights derived from these work packages, co-construct with stakeholders the central building blocks and procedures of an overarching future governance framework for RRI (WP4).

This governance framework will deliver cognitive and normative guidance that can be applied flexibly in different contexts. Res-AGorA will thus have direct impact on RRI practices (science, industry, policy), and strategic impact in terms of the political goals (Horizon 2020) and competitiveness (Lead Market through growing acceptance of new technologies).

Res-AGorA will ensure intensive stakeholder interaction and wide dissemination of its tangible and intangible outputs in order to maximise impact, including comprehensive and interactive stakeholder engagement, liaisons with other ongoing RRI activities funded by the SiS Work Programme, and a final conference.

For more information and updates on Res-AgorA's activities, please visit www.res-agora.eu.

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Preface: Objectives of the deliverable

The focus and purpose of Deliverable D2.3 (originally titled “Report on ideal-typical RRI governance arenas” in the DoW, now titled “Governance Situations and Challenges. Conceptualising variety to underpin a socio-normative RRI governance framework”) is an integral element in Res-AGorA’s iterative approach in conceptual development and empirical analysis. After discussions within the consortium, it became clear that this shift will better serve the overall project aims as compared to the original plan. As specified in the DoW and in the Res-AGorA project implementation plan (D1.2), deliverable D2.3 would specify a limited set of ideal typical RRI governance arenas and contestation arrangements. From the first range of pilot case studies and the WP2 expert meeting (held Nov. 22, 2013 in London) we have, however, learned that our conceptual approach has to be further refined in order to best serve the next round of case studies in WP 3. In addition we think it is better to develop a repository of situations which reflect typical RRI governance challenges in close connection to the functional specification canon to be developed in task 2.3. We therefore were very grateful that our project officer agreed to give our request to shift the focus of this deliverable in order to optimize conceptual guidance in the empirical research a “green light”.

Karlsruhe, February 28, 2014

1. Introduction

Res-AGorA seeks to develop a socio-normative framework for the governance of RRI. The Governance Framework for RRI can be broadly understood as an instrument of Strategic Intelligence, offered to stakeholders and policy actors. The Framework will incorporate a conceptual repository of useful governance arrangements that serve as guidelines (or strategies) to facilitate constructive and productive interaction under heterogeneous conditions.

The framework is developed through interplay of deductive and inductive steps. In a first step, a heuristic for empirical research has been developed largely deductively. In a second step a set of pilot case studies have informed the modification of the research model. A third step will again be inductive, whereby a second batch of case studies are now being designed fully in line with the modified research model, in order to maximise the learning for the model and subsequently inform the design of the socio-normative governance framework.

These iterations have highlighted one challenge of Res-AGorA. The (limited) number of cases in the first and second empirical phases are very heterogeneous. They represent different actor landscapes, research or innovation issues, natures of contestation, de facto governance processes and so on. In doing so, the cases also represent different governance challenges that a governance framework for RRI would have to address.

For a Res-AGorA governance framework to be useful, we need to be able to capture this heterogeneity, learn from it and then simplify. However, we cannot credibly have a framework that is tailor-made for any conceivable idiosyncratic situation. Rather, we need a framework with which we can *understand* the heterogeneity and that then later allows us to create a number of *typical situations*. This limited number of typical situations should represent the breadth of situations and challenges in a stylised manner. The general Res-AGorA normative governance framework can then be differentiated and illustrated along those stylised situations. The framework must be able to “pick up” actors in their specific situations.

This paper is a **first step to conceptualise governance situations and challenges**. It is based on the experience of the conceptual development of the research model and of the pilot cases and the on-going design of the second stage cases.

This concept will develop over the course of stage 2 cases, with revisions and improvements nurtured by the empirical work. Once we have sufficient insight into the connection of case situations with governance mechanisms towards RRI based on the analysis of stage 2 cases, we then will define a limited set of typical situations which then will be utilised for the concretisation of the socio normative framework (WP 4).¹

¹ This process deviates from our original plan to define ideal-types already on the basis of the pilot cases. The first empirical case as well as the development of the research model have shown that we need to learn far more about the nature of situations and how they link to de facto governance and their well doing before we can draw up meaningful ideal-types.

It is important to highlight that the governance framework underpinned by the idealtypical situations will not be prescriptive or suggest a simple “if - then” automatism/causality, rather, it is a tool for self-reflection and learning, acting as a source of inspiration for governance strategies.

In the following, we discuss a first list of dimensions to define situations in terms of their **substantive** and **procedural** propositions (section 2). This is the core of the exercise at this stage, to prepare the simplified definition of situations through substantive and procedural dimensions that can be **observed at a certain point in time** and then be related to governance principles and instruments.

This is followed by one additional thought (section 3) that will be important for the development of a governance framework that will be used by specific actors in specific situations. Those individual actors might relate to the governance framework in order to get guidance as to how they can move a system (an organisation, a profession, etc.) into a desired direction based on their normative preferences and in terms of what they think are preconditions for responsible research and innovation. In order to facilitate this for a later stage, we start a discussion about potential normative dimensions as entry points for actors who want to understand their situation and apply the framework. Section 4 outlines the next steps.

2. Understanding Situations

2.1 The nature of situations

We can define situations as the combination of manifestations of a limited number of dimensions. For example, a dimension could be the level of formality of a governance instrument, and in a given situation the manifestation would be that the main instruments were extremely informal. Another dimension could be the heterogeneity of actors involved, and the concrete manifestation in a given case could be that only a small, rather homogenous range of actors (e.g. representatives of large firms) have been involved.

This simple definition has three non-trivial consequences. First, the concept to define situations then has to start with the definition and selection of dimensions. Our idealtype framework will only work on the basis of a limited number of dimensions. Therefore, the selection process must be guided by one main criterion: how important is this dimension to define for the nature of governance challenges, the problem or opportunity that is posed with respect to responsabilisation and the management of contestation towards a RRI framework that is shared or accepted.

Second, we have to acknowledge that manifestations in a given situation will never be simple or fully defined objectively. To locate a specific situation within the range of a dimension will

always involve a judgement call by the analyst. Moreover, for some dimensions the definition of a manifestation itself will be empirically contested, a matter of (diverging) perceptions. For example, if we have a dimension “nature of conflict” between stakeholders (mainly interest driven vs. mainly value driven), the analyst may assess, in line with any stakeholders, the conflict to be mainly about material interests, while some actors genuinely believe it is a value driven conflict. Equally, some actors might perceive the scientific knowledge base of the issue at hand as being more or less clear, while others perceive a high level of uncertainty. Therefore, when defining a situation as analyst, it is not only the analyst’s perspective, but the diversity and level of consensus among the stakeholders as regards a certain dimension that must be taken into consideration.

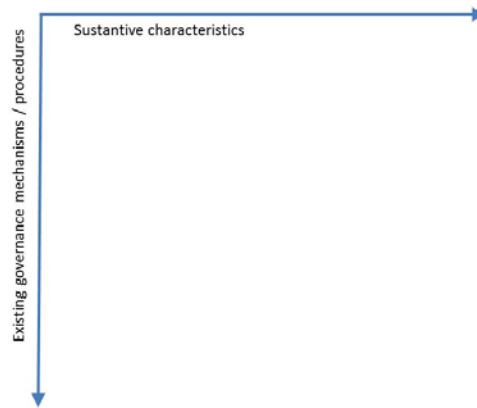
Third, situations evolve over time. Our exercise here is to help understand how a governance framework can be applied – as a thinking and inspiration tool – in specific situations. However, naturally, the character of the situation changes throughout the governance process, as new instruments are applied, as actor landscape change and so forth. Thus, the exercise to take a snapshot of a situation is somehow artificial and the application of the governance framework will always have to keep in mind the feedback loops between governance dynamics on the one hand and situations on the other hand.

2.2 Dimensions of situations – a first approximation

Based on the analysis of a first bundle of cases, and in line with the logic of the deductive research model we now can define a first set of dimensions that we think are determining the governance challenge for an RRI framework.

We can distinguish between (1) **substantive or material** and (2) **process** dimensions. Substantive or material dimensions are those that characterise the nature of the underlying issue, the object of the responsabilisation and contestation processes. The process dimensions are those that characterise the procedural aspects of a situation, i.e. the kinds of instruments, actors and ressources mobilised etc. This leads to a simple 2 by 2 matrix to characterise a situation.

Figure 1: The situation space



2.2.1 Substantive or material dimensions

From our conceptual development and our pilot cases we can now determine a first set of substantive dimensions which characterise any given situation to which a governance framework should be able to relate:

Actor Landscape: Range and variety of actors involved

Different situations differ according to the range and heterogeneity of actors that are involved in the governance process (and at a second level those that are affected by it). This relates to the sheer number of actors and actor groups that are actively engaged, but more importantly also to their material (resources and power), functional, cognitive, normative and geographical heterogeneity. We can assume that the more heterogeneous actors are, the more challenging a process of managing contestation and achieving a shared or compatible understand of responsibility will be.

Locality vs globality

The issues that are discussed or contested in a given situation may be global or local in terms of their origin and in terms of their consequences. For example, for “global engineering” the origin of the problem (global warming) and the solution (the actual global engineering) can both only be thought of at the global level. Conversely, fracking, while posing similar challenges in many parts of the world and thus being of global relevance, the actual consequences of any given fracking activity are local. Other issues might be local in their origin, but global in their consequences. The challenge relates to finding an appropriate match between the arena of de facto governance and the design and direction of interactions on the one hand and the geographical and actor space that is engaged and affected on the other hand.

Research vs innovation: as different socio-economic processes

The underlying material issue that is discussed may relate more to scientific and (basic) research activity, or it may be an issue of the introduction, diffusion and use of an innovation. Most often, issues may have elements of both, with feedback loops between them. Nevertheless, the basic socio-economic processes, the actor groups involved and affected, the nature of uncertainty and the nature of contestation will differ between issues that are predominantly related to innovation and those that are predominantly related to the production of scientific knowledge. This difference will have to be taken account in the design of governance arrangements.

Techno-science domains / cross-domain issues /nature of the underlying technology

Related to the dimension above, in fact a sub-dimension of the above, is the distinction between different techno-science domains, whereby the situating in a specific domain will bring with it the association of a range of properties that overlap with other dimensions (as regards actors, uncertainty etc.). What is important, though, is the distinction between issues that are clearly limited to a specific techno-science domain and those that are relevant across domains. Related to that, we can distinguish between general purpose technology vs technologies with very specific, limited application, as this will determine the complexity of a given situation and thus the governance challenge. Again, any design of a governance arrangement that tries to work towards and establish binding RRI principles would need to relate to the idiosyncracies of a specific domain or technology as well as the challenges arising from cutting across different domains (and actor landscapes).

Nature and level of uncertainty:

As research and innovation is about the generation and application of something novel, they come with an inherent element of uncertainty. Thus, the discourse on responsibility in research and innovation is inherently linked to uncertainty as well. We can assume that the level of (perceived) uncertainty influences the diversity of views and the nature and severity of the contestation, as well as determining the breadth of (potential) consequences. We distinguish between uncertainty about:

- the societal consequences of knowledge, of a technology or an innovation (health, ethics, safety, welfare more generally)
- the uptake in markets and what an innovation will mean for markets and competition
- regulatory uncertainty, where actors are not clear about the current or upcoming regulatory environment for an innovation

Nature of the contestation

Conflicts about what is and what responsible research and innovation means around a given issue can have two basic motivations. They can be **material**, i.e. actors have a clear understanding of their interests and prefer certain definitions of responsibility over others because they associate higher material gains with it. Conversely, actors may also not be driven by ma-

terial interest, but by **normative** consideration (value conflict). Conflict research (in international relation studies) has shown that conflict resolutions are more likely with material conflicts, as negotiations and compromise can be found, whereas value conflicts tend to be harder to resolve by compromise. Governance towards a complementary understanding of what responsibility means is, we can assume, faced with a harder challenge in areas that are characterised predominantly by value conflicts.

Note: both normative and material contestation can arise because of new opportunities and challenges perceived in the context of emerging knowledge and technologies, or contestation can be “re-opened” around established technologies as their business case changes or values shift

Nature of ‘conditioning conditions’; institutional and country settings

This dimension is in fact a bundle of different dimensions. It is a placeholder for the important cultural, economic, institutional, regulatory, scientific and economic differences between countries or regions as context conditions conditioning the discourse around responsibility and the perception and capabilities of actors to engage. It is not possible to map out simply dichotomies or types here.

Level of RRI intervention

Situations differ according to the level of RRI intervention and governance. Of course, there is interaction and interdependence between levels, but we can, analytically, distinguish various levels in order to then position governance dynamics within and across them. The challenges and opportunities for governance of RRI will differ between the levels. A first approximation of levels is the following:

- Global, (OECD) EU, or member state policy (including questions of RRI policy harmonisation via the EU v local flexibility at the level of member states)
- Hybrid-fora (Heterogeneous actor landscapes) eg governance of multi-disciplinary, multistakeholder research projects – the meso-level (RES-AGorA main focus)
- Organisations and organisational design (top-down and bottom-up organisational governance. Governance challenge would be how to stimulate institutional entrepreneurs/champions of RRI)
- Individuals – capacity building for RRI (governance of science education and practice at all ages, with a focus on Higher Education and private /public laboratory settings of Scientists, Researchers and Engineers.

2.2.2 Procedural dimensions

Situations are not only determined by material and substantive issues, but by **already existing governance instruments and arrangements** and factors influencing emergent or possible governance arrangements. Any learning, and reflection as to how governance arrangement to develop RRI might be developed has to take those existing mechanisms into consideration. The following list is, as above, very tentative.

Bundle and variety of instruments

A given arena will always be characterised by existing governance instruments. Any development of a governance arrangement will have to take these instruments and their arrangement into account. Those existing mechanisms might subsequently be used, altered, abandoned. To characterise and understand a given situation in a certain point in time, one will have to consider both hard and soft instruments, both voluntary and compulsory/hierarchical mechanism and how the existing instruments relate to the requirements posed by the attempt to move the system into a different direction in terms of RRI.

Modes of actor mobilisation

Related to the above, the existing level, outreach and form of actor mobilisation will differ in different situations, and thus the pre-conditions for actor mobilisation and inclusion in a move towards RRI governance. A situation is characterised by the existing level of mobilisation of actors, and the existing level and breadth of inclusion of actors in the governance process. Mobilisation and inclusion can be organised through formalised procedures (official membership and representation in specific for a etc.) or informally. Situations thus differ by the way affected and interested actor groups are granted access to the discourse and to decision making. More basically, they differ by the level of awareness about related governance processes.

Resource provision (money, people, knowledge)

Governance requires resources. The availability and mobilisation of money, people and knowledge in any given situation conditions the ability of actors to interact and influence, and thus the subsequent design and implementation of governance mechanisms. This also means that the normative direction that is supported by certain governance mechanisms is dependent on the very resources that are mobilised to set them up.

Capacity building (incl knowledge)

A situation will differ as regards the level of knowledge and awareness about the responsibility challenge across actors and the existing capacities of actors involved and affected to reflect and engage. While this at first can be seen as a given, substantive dimension, it is procedural when it comes to the existing provisions and mechanisms by which such capacities are being supported and built up.

Main source and origin of responsabilisation/lead

RRI situations further differ according to the source and main driver of the initial debate and the subsequent governance dynamics. Of course, the picture will always be a hybrid one, but we have to carefully analyse if the discourse is driven by state actors (policy), by other public actors (research organisations, universities, intermediaries), by corporate NGOs or private firms, or by individuals, be it professionals (e.g. scientists) or societal actors more broadly. Again, this links strongly to the substantive dimension of the actor landscape, however, the important difference being to understand the initial role that actors play in a given situations. A sub-question here would be to understand if there are any individuals or organisations that take ownership of the responsibility agenda, that push for certain normative principles and invest resources (time, money, social capital) in order to make a change.

3. Normative RRI positions and orientations.

As outlined in section 1, we add to this conceptualisation of a given situation at a given point in time by reflecting on the perception of situations and intentions by individual actors. Thus, we depart from the attempt to understand and characterise situations “objectively”, as a starting point to understand the challenges that a governance framework will have to tackle, and we turn to the perception of a situation and the initial normative orientation of actors that might want to apply the governance framework.

It is not only the existing “objective” situation that determines the governance challenge, i.e. the reflection about and choice and application of governance arrangements, but initial underlying beliefs of actors as to what it is that enables RRI that determine the perception of actors as to what the governance challenge initially is. Res-AGorA does not determine this normative direction, we do not take sides, but the Res-AGorA framework should be able to be applied by actors with different kinds of needs and orientations. *For a given actor*, the governance challenge is defined as a combination of substantive characteristics of the situation, pre-existing governance mechanisms and characteristics and an (initial) normative idea as relates to RRI and its pre-conditions.

Along those lines, actors using and applying the governance framework will be able

1. to understand their own real-world situations by mapping them against a range of **substantive** and **procedural** dimensions.
2. to access a repository of proven and useful governance strategies and mechanisms
3. to learn from those ideal-typical situations
 - a) that best represent their own situation
 - b) that might help them to move towards their desired normative direction (whereby the governance framework does not suggest a certain normative direction, but must be able to support different actors with their specific normative orientation)
 - c) and apply governance rationales and mechanisms that are best related to their own situation accordingly.

These three points above in combination constitute a governance challenge for a given actor in a given situation. This challenge might look very differently for different actors facing the same combination material and procedural situation, and it will certainly change over the course of time. Therefore, whilst it is **not the task of our RRI Governance Framework to impose certain normative RRI preferences** on actors, its usefulness as an instrument of Strategic Intelligence will inter alia depend on the way it is able to pick up actors with a certain normative RI orientation in mind. The entry point to reflect on a situation by using our governance framework might very well be a certain normative orientation. The **governance framework** itself is **neutral** as for RRI normativity, but should allow actors with a certain RRI orientation in mind to find their entry point. Thus, the definition of situations will have to keep in mind that any given situation will pose a different governance challenge for actors with different initial orientations as to what the future *should* look like.

Some examples for initial normative intentions of actors in RRI situations, derived from or observations in pilot cases and stage 2 case illustrations, are the following:

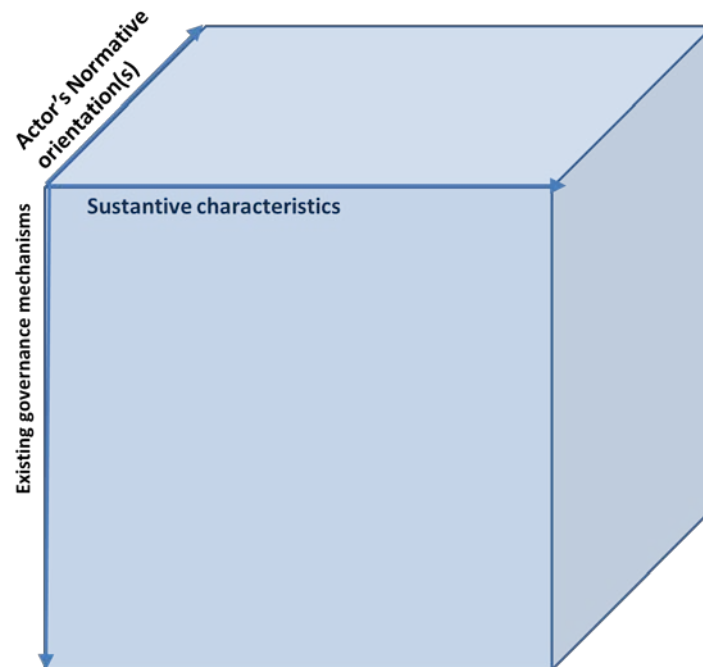
- Organising diverse and heterogeneous actors to mobilise and (re) orientate outwards motivating multiple disciplines (physical and social scientists) and agencies to address societal problems
- Organising to encourage the engagement of a wider constituency of societal actors into the science, research and innovation 'enterprise'
- Organising to facilitate the engagement of SMEs in RRI
- Organising to facilitate the wider take-up of RRI by industry (see the new responsible-industry project).

- Organising to facilitate the input of perspectives, and examples of practice, from innovation services support industries, such as financial, insurance, risk-capital and legal industries

The governance framework, to be meaningful, would have to be able to speak to actors with those (and other) different orientations.

As a heuristic tool, we could think of our two dimensional situation space depicted above as a three-dimensional governance challenge cube for individual actors in a given situation. This cube, however, should not be mistaken as a tool to characterise situations, but is a tool to allow actors to situate themselves and to define the governance challenge they face applying the Res-AGorA governance framework.

Figure 2: The governance challenge cube from the perspective of individual actors



By combining the three axes of the cube we can (as a mental experiment, informed by, but no longer limited to the concrete lessons of the cases) appreciate how a given 'situation' combines dimensions from the 'material/substantive' axis, the 'procedures' axis and the 'normative orientation' axis which poses 'governance challenges', not objectively given, but for individual actors within a situation.

4. Ways forward

This document is a working document, it will evolve so that we arrive at a finite number of dimensions and their sound definitions to characterise situations. This process will develop alongside the empirical phase up to April 2014. We subsequently explore the development of idealtypes, i.e. a combination of substantive and procedural manifestations. This could then be linked with a limited set of normative orientations to illustrate the way in which the governance framework would work for actors with certain initial orientations.