



## Governance of Responsible Innovation

**GREAT – 321480**



<b>Framework for the Comparison of Theories of Responsible Innovation in Research</b>			
Deliverable No.		<b>D5.1</b>	
Workpackage No.	<b>WP5</b>	Work Package Title	<b>Gap Analysis and proposition of framework</b>
Task No.	<b>5.2</b>	Task Title	<b>Analysis of Governance Theory and the Practice of responsible innovation</b>
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Status (F: final; D: draft; RD: revised draft)		<b>D</b>	
Distribution		<b>Public</b>	
Document ID / File Name		<b>GREAT_D_5_1</b>	



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## Executive Summary

Deliverable 5.1, “*Framework for the Comparison of Theories of responsible innovation in Research*” aims at providing a background from which to compare current and future theories on Responsible Research and Innovation. Del. 5.1 is a document that offers a framework for RRI theories according to the discoveries made throughout a second phase of the project.

This deliverable represents the synthesis and a development of previous efforts within the project. In particular two sources will feed this document. A first input will hail from all the deliverables written in Work Package 2 (D2.1 – D2.4), Work Package 3 (D3.2 – D3.4) and Work Package 6 (D6.4). On the one hand they will provide the current theoretical landscape with related analysis; on the other hand, stand as an empirical reconnaissance on the actual scenarios of R&I. RRI is an after all recent notion, at least at a European level and therefore the accuracy concerning literature production can be considered to be quite high. Unfortunately, the same cannot be stated for empirical investigations where, the novelty of RRI, multiplicity of research and innovation fields, scope and resources of our project, impeded us from providing an exhaustive picture of R&I in Europe<sup>1</sup>. However, the methodology we have applied for the case studies guarantees the necessary coherence and depth in order to represent an exemplary depiction of the ethical dynamics occurring in research projects.

Besides, the insights springing from workshops, conferences, debates and sister-projects, will enrich our concept map, representing the touchstone against which we can further validate our assumptions and the so-called analytical grid.

An important achievement we also managed to reach was to match successfully our perspective on RRI within the six keys promoted by the European Commission. We found there was an important agreement between our project and the Commission’s indications for the future of RRI.

The sum of these differences forms the framework for the comparison of RRI theories; an instrument characterized by a meta-normative governance based on participation, reflexivity and ethics.

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<sup>1</sup> For additional data see, <http://res-agera.eu/case-studies/>



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## 1. Introduction

In the last couple of years several broad definitions of Responsible Research and Innovation (RRI) have been promoted at different levels. Within the growing literature on RRI, Owen's and von Schomberg's proposals are perhaps the most known and most cited ones<sup>2</sup>. But there are also an increasingly number of different collateral conceptions that somehow relate to RRI's discourse or that try to analyse it from more specific perspectives<sup>3</sup>. Not to mention the contributions coming directly from policy institutions like the European Commission<sup>4</sup>.

Their value is not in question given the deep and broad perspective they provide. However, all the different problems they pose, together with their different normative assumptions, render difficult to harmonize them or to justify a choice amongst them. It becomes difficult, for a scientist or a policy maker to understand what RRI is and how it should be fostered.

For these reasons, we believe necessary to construct a framework able to assess all the current and future theories concerning RRI. A framework that highlights the theoretical implications and the practical consequences of RRI. This attempt requires a justified perspective that can sort all the different issues by means of a theoretical investigation together with empirical testing. The results shall then assume the form of a synthesis able to maintain the initial structure while correcting some parts.

In order to do so we believe to be wise to continue along our path, to think about the problems connected to RRI according to our new internal progresses (Del. 3.2, 3.3, 3.4, 4.2), and to discuss all the most recent external contributions. The synthesis between these two sides will provide us with an acceptable framework for assessing specifically RRI, and more in general the relation between science and society.

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<sup>2</sup> Owen, R., Stilgoe, J., Macnaghten, P., Gorman, M., Fisher, E., & Guston, D. H. (2013). A Framework for Responsible Innovation. In R. Owen, M. Heintz, & J. Bessant (Eds.), *Responsible Innovation*. Chichester, UK: Wiley; Von Schomberg, R. (Ed.). (2011b). *Towards Responsible Research and Innovation in the Information and Communication Technologies and Security Technologies Fields*. European Commission.

<sup>3</sup> Van den Hoven, M. J. (2013). Value Sensitive Design and Responsible Innovation. In R. Owen, M. Heintz, & J. Bessant (Eds.), *Responsible Innovation*. Chichester, UK: Wiley. Sutcliffe, H. (2013, December 3). A new old definition of Responsible Innovation «Hilary Sutcliffe's Blog. *Hilary Sutcliffe's Blog*. Blog. Retrieved November 23, 2013, from <http://www.matterforall.org/blog/2013/03/12/a-new-old-definition-of-responsible-innovation/>.

<sup>4</sup> European Commission. (2013). *Horizon 2020. Work Programme 2014-2015. Science with and for Society*. Brussels. Retrieved from [http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014\\_2015/main/h2\\_020-wp1415-swfs\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2_020-wp1415-swfs_en.pdf); European Commission. (2013), Options for Strengthening Responsible Research and Innovation, Brussels. Retrieved from [http://ec.europa.eu/research/swafs/pdf/pub\\_public\\_engagement/options-for-strengthening\\_en.pdf](http://ec.europa.eu/research/swafs/pdf/pub_public_engagement/options-for-strengthening_en.pdf).



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## The theoretical landscape

In the GREAT project we made a reconnaissance throughout RRI literature trying to detect all the most important contributions and trends within the same field and also in parallel ones (Del. 2.2, 6.4). We analysed all the major proposals in order to assess their validity and their efficacy for shaping a conception of RRI. We had to propose an initial meta-normative frame in order to understand the ethical obstacles and the governance short-circuits. By analysing the concepts of responsibility and innovation we highlighted the poliedric nature of the former and the societal dimension of the latter<sup>5</sup>. In fact, responsibility implies different understanding of the terms (responsiveness, accountability, liability, care, etc.) that cannot be ignored. At the same time innovation stems from a long tradition of economy and research-wise progress that finds in the market, and in society at large, its new and particular scope. The analysis of these two sides brought us the awareness that responsible innovation, to be defined as such, always needs to be context-driven.

This frame came from a reflexive process based on two particular presuppositions. The first one is that every R&I process needs to engage a large number of stakeholders. Engagement is thus a first necessary condition for developing a responsible process<sup>6</sup>. A second aspect is that participation must facilitate reflexivity at two levels<sup>7</sup>, focusing on an ethical perspective. The result was a tool useful to assess our understanding of RRI.

The analytical grid (D2.3) tried to play such a role, highlighting certain aspects that always need to be taken into account when assessing the ethical conduct of research and innovation. Such a tool was adopted as a reference for further investigations carried on at an empirical and theoretical level.

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<sup>5</sup> <http://www.great-project.eu/research/deliverables> For a brief but precise history of the concept of innovation, <http://www.csiic.ca>

<sup>6</sup> <http://www.great-project.eu/research/deliverables>

<sup>7</sup> Del 2.3, <http://www.great-project.eu/research/deliverables>



Figure1: Analytical Grid (Del. 2.3)

Product	Safety/Sustainability/Privacy/Justice
Process	Accountability, Transparency, Stakeholder-Involvement
Tools	Participation, Ethical Tools
Epistemic Tool	Risk Assessment/ Precautionary Principle
Participatory Approach	Participant: Spectator, Influential, Decisive
Assessment	Expert-based, Shared approach, etc.
Cultural Context differences	Ignored, Considered, Crucial
Norms/Law relation	Committed to law/beyond law

### The Meta-Empirical Scenario of RRI

In Work Package 3, we investigated the context of Research Projects in Europe. Not only European funded projects, but also national ones addressing different issues.

In Del.3.2 our empirical analysis were conducted on past projects, via the analytical grid, and showed us the following results:

#### Case 1: BEAMING

Approach		BEAMING
Parameter		
Anticipation	Vision of the world ( <i>Weltanschauung</i> )	- Enthusiasm for deep social transformations through a technology that could develop our communication means.
	Relationship with the future	- Ethical and legal deliverables seek to anticipate some possible issues; but there are no precise solutions on how they will be dealt with (especially as for ethical issues).



		<ul style="list-style-type: none"> <li>- No investigation of the “visions of the world” behind the technology.</li> </ul>
<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- Ethical board (5 members) which produce 2 deliverables on ethical and legal issues). Focus on legal issues.</li> </ul>
<b>Product</b>		The project aims at producing, new ways (experiences) of communication through a virtual and augmented reality technology.
<b>Process (of reflexivity)</b>	Transparency	<ul style="list-style-type: none"> <li>- Public ethical and legal deliverables</li> <li>- No particular mention of the need of transparency during the project in relation with social values.</li> </ul>
	Reflexivity	<p>First order reflexivity:</p> <ul style="list-style-type: none"> <li>- The ethical board attempted to identify relevant ethical and legal issues</li> <li>- No inclusion of other possible “stakeholders”. Enquiry expert driven.</li> <li>- No reflection about the <i>framing</i> (no second order reflexivity)</li> </ul>
<b>Epistemic Tools</b>	Precautionary Principle (PP)	Not mentioned in the deliverable studied
	Risk assessment	<ul style="list-style-type: none"> <li>- Attempt to anticipate possible negative and positive impacts in the ethical and legal deliverables.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- The process of assessment seems to fully rely on the ethical board.</li> </ul>
<b>Cultural differences</b>		<ul style="list-style-type: none"> <li>- Differences in legal frameworks are investigated as they could raise specific issues.</li> </ul>
<b>Norm/law relation</b>		<ul style="list-style-type: none"> <li>- Compliance with existing EU norms, codes of conducts and laws.</li> </ul>



		<ul style="list-style-type: none"> <li>- Some propositions to the possible legal issues that the new technology could raise are sketched.</li> <li>- No production of ethical norms specific to the project.</li> </ul>
<b>Participation/deliberation</b> <b>Collective/inclusive/interactive</b>		No inclusion of relevant stakeholders in the assessment.
<b>Responsibility</b>	Liability/blameworthiness	Only form of responsibility considered.
	Care	
	Responsiveness	
	Accountability	

**Governance Model:** Revised Standard Model

**Match and Mismatch with the analytical grid:** The grid reveals how ethical issues are conceived only through an expert approach, which does not seek to include conflicting perspectives. Responsibility is reduced to liability, in case of misuses of the given technology. The responsibility of researchers and innovators for creating a particular world of communication is not even mentioned. The authors of ethical and legal deliverables and the other scientists of the project do not commit themselves, as individuals, towards the possible outcomes of the technology they contribute to the development of.

**Case 2: INDECT**

<b>Approach</b>		<b>INDECT</b>
<b>Parameter</b>		
<b>Anticipation</b>	Vision of the world ( <i>Weltanschauung</i> )	- Security and control technology. Developing means





		(algorithms) to better detect “abnormal” behavior.
	Relationship with the future	<ul style="list-style-type: none"> <li>- Ethical deliverables anticipate some possible issues. No precise solutions on how they will be dealt with.</li> <li>- No investigation of the “visions of the world” behind the technology.</li> </ul>
<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- Ethical board (6-10 members, from various disciplines including law and ethics)</li> <li>- Annual deliverable on ethical issues.</li> </ul>
<b>Product</b>		The project aims at improving detection devices to enhance security in EU, in a context of terrorist attack’s threat.
<b>Process reflexivity) (of</b>	Transparency	<ul style="list-style-type: none"> <li>- Ethical and legal deliverables are public.</li> <li>- No specific norm on the need for the project to be transparent as for its aims, benefits and possible misuse.</li> </ul>
	Reflexivity	<p>First order reflexivity:</p> <ul style="list-style-type: none"> <li>- The ethical board attempted to identify relevant ethical issues.</li> <li>- Many issues were related only to the deontology of experiments with human beings, i.e. the ethical assessment undertaken in the deliverables only concerns the</li> </ul>



		<p>research process deontology and not the possible impacts of such a technology on European society.</p> <ul style="list-style-type: none"> <li>- No inclusion of other possible “stakeholders” in a normative discussion (not even the scientists of the project). Enquiry expert driven.</li> <li>- No reflection about the <i>framing</i> (no second order reflexivity).</li> </ul>
<b>Epistemic Tools</b>	Precautionary Principle (PP)	Not called on in the deliverable studied.
	Risk assessment	<ul style="list-style-type: none"> <li>- Attempt to anticipate possible negative and positive impacts.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- The process of assessment seems to fully rely on the ethical board.</li> </ul>
<b>Cultural differences</b>		<ul style="list-style-type: none"> <li>- Concern for the different applications of the technology.</li> </ul>
<b>Norm/law relation</b>		<ul style="list-style-type: none"> <li>- Compliance with existing EU norms, codes of conducts and laws.</li> <li>- The ethical part of the deliverable does not provide the norms that would be specific to this technology. (No production of new norms).</li> </ul>
<b>Participation/deliberation Collective/inclusive/interactive</b>		No inclusion of potential future users, or of the “civil society”.
<b>Responsibility</b>	Liability/blameworthiness	Only form of responsibility considered.
	Care	



Responsiveness	
Accountability	

**Governance Model:** Revised Standard Model.

**Match and Mismatch with the analytical grid:** The grid reveals how ethical issues are conceived only through an expert approach, which does not seek to include conflicting perspectives. Responsibility is reduced to the liability and the ethical investigation only concerns the process of research and not the impacts of technology on society. The responsibility of researchers and innovators for creating devices that enhance “abnormal” behaviour is not even mentioned. The authors of the legal deliverables and the other scientists of the project do not commit themselves, as individuals, towards the possible outcomes of the technology they contribute to develop. Finally, although the technology at stake will raise many privacy issues for European citizens, they have not been consulted and they do not appear at any stage of the project.

### Case 3: HUMABIO

Approach		HUMABIO
Parameter		
Anticipation	Vision of the world ( <i>Weltanschauung</i> )	- Security and control technology aimed at improving the detection of professional abilities in transportation industry.
	Relationship with the future	- Anticipation of classical issues (privacy, security, informed consent)  - No investigation of the “visions of the world” behind the technology.



<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- Ethical board (4 members including one “expert” in ethics)</li> <li>- Two deliverables on ethical issues.</li> </ul>
<b>Product</b>		The project aims at improving detection devices to enhance security in transportation.
<b>Process reflexivity) (of</b>	Transparency	<ul style="list-style-type: none"> <li>- Ethical and legal deliverables are public</li> <li>- No specific norms on the need for the project to be transparent as for its aims, benefits and possible misuse.</li> </ul>
	Reflexivity	<p>First order reflexivity:</p> <ul style="list-style-type: none"> <li>- The ethical board + questionnaires with the members of the project attempted to identify relevant ethical issues.</li> <li>- Many issues were related only with the deontology of experiments with human beings.</li> <li>- No reflection about the <i>framing</i> (no second order reflexivity).</li> </ul>
<b>Epistemic Tools</b>	Precautionary Principle (PP)	Not called on in the deliverables studied.
	Risk assessment	<ul style="list-style-type: none"> <li>- Attempt to identify possible negative and positive impacts.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- The process of assessment relied for a large part on the</li> </ul>



		ethical board. - End-user consultation.
<b>Cultural differences</b>		- Adaptation to the different application contexts (different local professional “cultures”).
<b>Norm/law relation</b>		- Compliance with existing EU norms, codes of conducts and laws. - No production of new norms.
<b>Participation/deliberation</b> <b>Collective/inclusive/interactive</b>		- Inclusion of potential users <i>through in situ</i> surveys and questionnaires. - Inclusion aimed to increase social acceptance (and not ethical desirability).
<b>Responsibility</b>	Liability/blameworthiness	Form of responsibility mostly considered.
	Care	
	Responsiveness	Responsiveness has been engaged in reaction to the consultation process.
	Accountability	

**Governance Model:** Consultation Model.

**Match and Mismatch with the analytical grid:** The grid, here, shows some points of comparison with aforementioned cases. Compared to them, this project included end-user consultation and a pluralistic identification of ethical issues involving partners other than the members of the ethical board. Also, the grid helps highlighting that there is no second-order reflexivity (reflecting on the frame that facilitated reflexivity) and that the process of inclusion is more focused on increasing social acceptability than in setting the foundations for a co-construction process.



## Case 4: Best Energy

Approach		Best Energy
Parameter		
<b>Anticipation</b>	Vision of the world ( <i>Weltanschauung</i> )	- Energy consumption reduction through ICT devices.
	Relationship with the future	- Identification of possible issues related to the technology but no specific concern for the ethical aspects of these issues.
<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- “socio-economic” deliverables about current practices in the pilot projects sites and about people’s acceptance to modify these practices.</li> </ul>
<b>Product</b>		- ICT devices for energy consumption reduction.
<b>Process reflexivity</b> (of	Transparency	<ul style="list-style-type: none"> <li>- Socio-economic deliverables are public</li> <li>- No specific norm on the need for the project to be transparent concerning its aims, benefits and possible misuse.</li> </ul>
	Reflexivity	<ul style="list-style-type: none"> <li>- No ethical issues mentioned or discussed. (no first order reflexivity)</li> <li>- No reflection about the assessment process’ (questionnaires + workshops) limits or blind spots. ( no second order reflexivity)</li> </ul>



<b>Epistemic Tools</b>	Precautionary Principle (PP)	Not mentioned in the deliverable studied.
	Risk assessment	<ul style="list-style-type: none"> <li>- Attempt to identify possible negative and positive impacts.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- End-user consultation.</li> </ul>
<b>Cultural differences</b>		<ul style="list-style-type: none"> <li>- Concern for the different context of application of the technology (different professional cultures).</li> </ul>
<b>Norm/law relation</b>		<ul style="list-style-type: none"> <li>- Compliance with existing EU norms, codes of conducts and laws.</li> <li>- No production of new norms.</li> </ul>
<b>Participation/deliberation Collective/inclusive/interactive</b>		<ul style="list-style-type: none"> <li>- Inclusion of end users through surveys and workshops at different stages of the project.</li> <li>- Inclusion aimed to ensure market success (and not ethical desirability).</li> </ul>
<b>Responsibility</b>	Liability/blameworthiness	Form of responsibility mostly considered.
	Care	
	Responsiveness	Responsiveness has been engaged in reaction to the consultation process. But not in relation with ethical issues.
	Accountability	

**Governance Model:** Consultation Model.

**Match and mismatch with the analytical grid:** Here, the grid helps highlighting another difference with other projects: the project carries a purpose that could be labeled by many as *moral* (reducing energy consumption), but by means that are not necessarily *responsible* in GREAT's conception (no reflexivity, no deliberation on ethical issues in spite of a consultation process).



## Case 5: COWAM

Approach		COWAM
Parameter		
<b>Anticipation</b>	Vision of the world ( <i>Weltanschauung</i> )	- Nuclear waste storage
	Relationship with the future	- Attempt to identify many important issues.
<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- State of art deliverables</li> <li>- Ethical guidelines</li> <li>- Many deliverables reporting about the inclusion process.</li> </ul>
<b>Product</b>		- Elaborating norms for nuclear waste storage governance.
<b>Process reflexivity</b> (of)	Transparency	Transparency required and favored to allow a shared reflection on the best practices in nuclear waste management (NWM) issues.
	Reflexivity	<ul style="list-style-type: none"> <li>- Promotion of a continuous dialogue between local communities, NGO's, regulators and decision makers to ensure a pluralist construction of norms</li> <li>- In the deliverables studied, no mention of a reflection about the assessment itself, conducted by the project.</li> <li>- Not only first order reflexivity but not yet second order reflexivity.</li> </ul>





<b>Epistemic Tools</b>	Precautionary Principle (PP)	Unknown <sup>8</sup>
	Risk assessment	<ul style="list-style-type: none"> <li>- Attempt to identify possible negative and positive impacts.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- Dialogue between many of the stakeholders involved.</li> </ul>
<b>Cultural differences</b>		<ul style="list-style-type: none"> <li>- Sensitivity to the various European contexts and countries concerned by nuclear waste storage.</li> </ul>
<b>Norm/law relation</b>		<ul style="list-style-type: none"> <li>- Compliance with existing EU norms, codes of conducts and laws.</li> <li>- Production of new set of norms with a view to their local interpretation and implementation.</li> </ul>
<b>Participation/deliberation Collective/inclusive/interactive</b>		<ul style="list-style-type: none"> <li>- Participation and deliberation were at the core of the project.</li> <li>- Inclusion of various possible actors concerned by NWM.</li> <li>- Inclusion aimed at ensuring the success of the storage process but also at favoring a co-construction of norms.</li> </ul>
<b>Responsibility</b>	Liability/blameworthiness	Invoked at all stages of the project.
	Care	A form of care is engaged as soon as the fears, hopes, needs and interest of the inhabitants who could be affected by nuclear waste being stored in their neighborhood have been seriously taken into account. However, norms produced by the project were not

<sup>8</sup> Cowam is a ten-year project that yielded many deliverables. Within the time available to study it in GREAT project, I can neither confirm nor infirm that the precautionary principle has been called on.



	mandatory.
Responsiveness	Responsiveness has been engaged in reaction to the participation and deliberation process.
Accountability	Deliverables reporting the outputs of discussion show a form of accountability.

**Governance Model:** attempt of Co-construction of norms but without mandatory effects.

**Match and Mismatch with the analytical grid:** Here, the grid highlights how the project goes a step further (compared with previous projects) in placing the inclusion of many relevant stakeholders at the core of its process. It must be noted that COWAM was a SIS project which aimed to enhance deliberation around norms for NWM, and not to propose a new process of production or a new product. In this respect, it fundamentally differs from the other projects, the “output” or “product” being a set of guidelines for the elaboration of norms and not a new technology.

#### Case 6: MIAUCE

Parameter	Approach	MIAUCE
Anticipation	Vision of the world ( <i>Weltanschauung</i> )	- Developing ambient technology in several different contexts involving the analysis of human behavior.
	Relationship with the future	- Deep investigation into many of the ethical issues raised by the technologies at stake, but also about the vision of the world itself carried by such type of technology. - Use of scenarios to help investigate potential



		achievements but also possible misuses and downward slides.
<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- Ethical Board (SHS embedded team)</li> <li>- Ethical deliverables</li> <li>- Explorative philosophy (with the help of scenarios).</li> <li>- Inclusion (online surveys + focus groups).</li> </ul>
<b>Product</b>		<ul style="list-style-type: none"> <li>- Ambient technology development to assess human behavior in several contexts.</li> </ul>
<b>Process reflexivity) (of</b>	Transparency	<ul style="list-style-type: none"> <li>- Detailed report of the activities and questions raised by the ethical group.</li> </ul>
	Reflexivity	<ul style="list-style-type: none"> <li>- Discussion between engineers, “natural” scientists, computer scientists and social scientists of the project on the various ethical issues</li> <li>- Acknowledgement of the limits of SHS team’s contribution by the social scientists themselves (e.g. bias of being “embedded”)</li> </ul>
<b>Epistemic Tools</b>	Precautionary Principle (PP)	No specific data on this were found within the timeframe of the study.
	Risk assessment	<ul style="list-style-type: none"> <li>- Attempt to identify possible negative and positive impacts.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- Made through the ethical group of experts but also in including other social actors (possible end-users but also “civil” society).</li> </ul>



<b>Cultural differences</b>		<ul style="list-style-type: none"> <li>- Reflection on the different possible applications of the technology (with the help of scenarios).</li> <li>- Concern for the different contexts of application.</li> </ul>
<b>Norm/law relation</b>		<ul style="list-style-type: none"> <li>- Compliance with existing EU norms, codes of conducts and laws.</li> <li>- Production of new set of norms in relation with the scenarios and the results of focus groups.</li> </ul>
<b>Participation/deliberation Collective/inclusive/interactive</b>		<ul style="list-style-type: none"> <li>- Participation and deliberation were at the core of the project.</li> <li>- Inclusion of various possible actors concerned by the technology at stake.</li> <li>- Inclusion aimed at ensuring the success of the storage process but also at favoring a co-construction of norms.</li> </ul>
<b>Responsibility</b>	Liability/blameworthiness	Form of responsibility mostly invoked.
	Care	Limited form of care as the outcomes of the SHS team had low impact on the development of the technology.
	Responsiveness	Idem.
	Accountability	

**Governance Model:** Consultation Model

**Match and Mismatch with the analytical grid:** Here, the grid helps to emphasize that in spite of a deep and straightforward normative commitment to identify the ethical issues at stake and to explore the normative frameworks in which a technology develops, a more



proactive form of responsibility is hard to implement. The lack of power to influence the development of technology diminishes the weight of the ethical reflection.

### Case 7: French INRA project on GM vine

Approach		INRA's GM vine
Parameter		
<b>Anticipation</b>	Vision of the world ( <i>Weltanschauung</i> )	- Developing GM vines in a controversial context.
	Relationship with the future	- Investigation into the ethical issues raised by the technologies at stake, but also about the vision of the world carried by such technology.
<b>Tools</b>		<ul style="list-style-type: none"> <li>- Law compliance</li> <li>- SHS team embedded to provide interactive technology assessment.</li> <li>- Workgroup of relevant stakeholders selected to maximize the pluralities of views, which were gathered in several workshops.</li> </ul>
<b>Product</b>		- Research on GM vine
<b>Process reflexivity) (of</b>	Transparency	<ul style="list-style-type: none"> <li>- Is claimed during the whole process of participative assessment.</li> <li>- All the results were public</li> <li>- No mention of transparency concerning the technology itself.</li> </ul>
	Reflexivity	- The SHS team was aware about the limits and the possible bias



		<p>of the interactive assessment process (awareness of the framing).</p> <ul style="list-style-type: none"> <li>- Deliberate choice to maximize the pluralities of view to ensure that the final decision of the workgroup would reflect a large sample of perspectives and that it would have been submitted to a powerful critical process.</li> </ul>
<b>Epistemic Tools</b>	Precautionary Principle (PP)	<ul style="list-style-type: none"> <li>- A few voices in the workgroup expressed the idea that choices can be irreversible, and that consequently research on GM vine should stop.</li> </ul>
	Risk assessment	<ul style="list-style-type: none"> <li>- During the meetings of the workgroup, there was an attempt to identify possible negative and positive impacts.</li> </ul>
<b>Assessment</b>		<ul style="list-style-type: none"> <li>- Made through the interactive assessment process gathering a SHS team and relevant stakeholders of the vine field.</li> </ul>
<b>Cultural differences</b>		No mention (the project was very local)
<b>Norm/law relation</b>		<ul style="list-style-type: none"> <li>- Compliance with existing EU norms, codes of conducts and laws.</li> <li>- The workgroup provided with a set of norms and recommendations.</li> </ul>
<b>Participation/deliberation</b> <b>Collective/inclusive/interactive</b>		<ul style="list-style-type: none"> <li>- Participation and deliberation were at the core of the project.</li> <li>- Inclusion of various possible actors concerned by the</li> </ul>



		<p>technology at stake.</p> <ul style="list-style-type: none"> <li>- Inclusion aimed at helping the research institute (INRA) to take a “sound” decision about the possibility of furthering research on GM vine. However, the results of the workgroup were not compulsory. Yet INRA had to justify its decision were it contradictory with the workgroup recommendation.</li> </ul>
<b>Responsibility</b>	Liability/blameworthiness	Form of responsibility mostly invoked.
	Care	Limited form of care as the outcomes of the SHS team had low impact on the development of the technology.
	Responsiveness	<p>INRA showed a form of responsiveness in asking for the help of an SHS team that would set an interactive process of assessment.</p> <p>However, although two voices in the workgroup advised to stop the research, the research on GM vine culture continued.</p>
	Accountability	INRA showed a form of accountability in justifying its final decision with regards to the results of the interactive process of assessment.

**Governance Model:** In the direction of/attempt towards Co-construction.

**Matches and Mismatches with the analytical grid:** This case is a good example of a project which sought to be responsible. The grid helps to draw comparisons with other cases and show that the conception of responsibility is more sophisticated than in previous projects (several interpretations) and that the protocol of inclusion reflects a deep commitment towards pluralism.



The following table summarizes these results:

PROJECT	Relation with Context	Tool Usage/Justification	SIM	Governance Model
<b>BEAMING</b>	De-context	Ethical/Legal Dels.	All	Rev Standard
<b>INDECT</b>	De-context	Ethical Board	All	Rev Standard
<b>HUMABIO</b>	De-context	Ethical Dels. Ethical Board, End-User Consultation	All	Rev Standard
<b>MIAUCE</b>	Restricted Context	Embedded SHS Scientists, Ethical Manual, Surveys, Focus Groups	All	Consultation
<b>GM VINES</b>	Fully Context	National Regulation, Interactive Technology Assessment	All	Co-construction
<b>Best Energy</b>	De-context	Law compliance 'socio-economic' deliverables about current practices in the pilot projects sites and about people's acceptance to modify these practices.	All	Consultation
<b>Cowam</b>	Restricted Context	Law compliance State of art deliverables Ethical guidelines Many deliverables reporting about the inclusion process.	All	Towards Co-construction

Figure2: Summary of past projects review (Del. 3.2)

This table shows that only one project out of seven actually takes into account the context and tries to build a shared frame. Accordingly, although it is often perceived as important, participation in its basic structures is still lacking across all projects.





Around the same time, GREAT also developed the theoretical side reconnecting the parameters of the analytical grid, the governance models and the normative presuppositions to their epistemic roots. We showed how every governance model tends to stem from specific epistemic backgrounds implying a different attitude towards justification in decision-making. The outcomes, contained in **Del. 3.3** were that we could distinguish 4 epistemic paradigms at the basis of the relation between science and society.

*a) The technocratic-instrumental paradigm is the combination of a technical expertise provided by a restricted community and of the instrumental power of technical skills for the determination of social rules.*

*b) The ethocratic-normative paradigm combines an ethical expertise, provided by a restricted community, and the normative power of moral will for determining social rules.*

*c) The epistocratic-cognitive paradigm can be defined as the combination of epistemic expertise together with the cognitive power of scientific knowledge.*

*d) The democratic-inclusive paradigm is the combination of democratic participation and inclusive power of political opening to society in the determination of social rules and choices.*

The common trait of the first three paradigms is to maintain the dispute at an epistemic level without facing the actual scenario of science and society, caught in epistemic debates. Instead of looking for shared solutions, calling for a substantial change, these three paradigms develop along a fragmented, atomistic understanding of society.

All the characterization, and limits are summarized in the following table:

Paradigm	Technocratic-Instrumental	Ethocratic-Normative	Epistocratic-Cognitive	Democratic-Inclusive
Idea	Optimality of means	Justification of norms	Selection of the best	Participation of society
Stake	Efficiency of decisions	Legitimacy of rules	Wisdom of choices	Inclusion of citizens
Form	Technical positivism	Ethical universalism	Epistemic elitism	Political neutralism
Example	Saint-Simon,	D’Holbach, Kant	Plato, Mill	Rawls,



Example	Saint-Simon, Comte, Popper	D’Holbach, Kant	Plato, Mill	Rawls, Habermas, Latour
Limit	Axiological appraisal of choices	Empirical context-testing	Hierarchic determination of wisdom	Hermeneutical relationship to traditions
Norm-related problem	Factual ‘devaluation’ of norms, unethical	De-contextualised abstraction of norms, no effective	Cognitive embedding of norms, epistemic closure	Neutralization, formalization of norms contents

Figure3: Overview of Governance Paradigms in RRI (Del. 3.3)

Del. 3.3 has shown that ethical governance pursues common goals *via* inclusive paths and not through restricted access to decision-making.

In Del. 3.4 five case studies were accomplished in parallel, investigating the same issues with a more in-depth perspective. The results, summarized in the following table, seem to confirm our hypothesis of a substantial tendency towards a restricted role of engagement and a clear absence of questioning the frame. Moreover, the stress is often placed onto specific dimensions like law, making inclusiveness appear just instrumental for good-image purposes.

### Governance features of the five projects

	CommonWell	eSESH	SPOCS	DIEGO	Immigration Policy2.0
<b>Working hypothesis on governance model</b>	Consultation or Co-Construction	Standard with few elements of Consultation	Standard with few elements of Consultation	Mixed rhetoric, unclear so	Co-construction
<b>Governance tool(s)</b>	Various social science	Various social science methods	Five formally organised	An “Ethics Advisory	Training



<b>identified</b>	methods of empirical research (survey, interviews, focus groups)	of empirical research (survey, interviews, focus groups)	stakeholder groups	Group”	seminars
<b>Relationship between governance tool(s) and context</b>	Context is taken into account to a limited extent	Context is taken into account to a limited extent (note: various meanings of context)	Very ambiguous: shielding against context <i>and</i> opening up	Context is taken into account to a limited extent (note: very complex <i>legal</i> context)	Context is significantly taken into account
<b>Purpose of governance tool(s)</b>	To show the project in favourable light	To show the project in favourable light	Overcome obstacles to project implementation as envisaged by consortium	Cope with very complex legal context	Engage external stakeholders proactively
<b>Instances of reflexive governance/ collective learning</b>	A few	Quite a few	A few	Very few	Quite a few
<b>Reconsider working hypothesis: which ‘actual’ governance approach?</b>	Consultation	Consultation	Very ambiguous; perhaps mostly Standard model	Standard	Strive for co-construction
<b>Comparison of governance approach to related EC work programme</b>	Project largely responds to manifold EC requirements	Project largely responds to manifold EC requirements	Project largely responds to manifold and ambiguous EC requirements (many tensions built into	Project largely responds to manifold EC requirements	Project largely responds to manifold EC requirements (incl. demand for co-



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			programme)		construction)
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Figure 4: Del. 4.2, Annex 3

## The European Commission's Framework: Six Keys for Responsible Research and Innovation

Del. 3.3 ended by highlighting the necessity to further investigate the nature and relation of six keys promoted by the European Commission. The main issues on which we wanted to concentrate were basically three: the embedment of ethics in the keys, the absence of any reference to economic issues and the lack of an overarching reference point.

After reflections, debates and dialogues at different occasions we developed an understanding of the six keys that highlights its purposes providing a (supposed) rationale behind it. We managed to answer all the three questions by analysing them through our perspective of ethical governance.

Our hypothesis is that, if we want to propose a framework for assessing RRI theories, we need to consider the available theories themselves and their intended scope in order to match them with their logical outcomes and the normative presuppositions underlying RRI. If a discrete investigation has been already carried out in previous deliverables, some further analysis is required to better assess the attempts developed in this field. In fact, in a short lapse of time the guidelines of the European Commission passed from trying to build a conception of RRI to fostering RRI<sup>9</sup>. This shift implies that some common basic traits have already been accepted. However, it seems to be still unclear how to handle them in an organic way, a structure leading to their integration and application, "*one in which the total becomes far greater than the sum of its parts*"<sup>10</sup>.

The six keys developed by the commission in 2012 are: Engagement, Gender, Science Education, Open Access, Ethics and Governance<sup>11</sup>.

The first key, **Engagement**, is a methodological one aiming at the establishment of participatory procedures. Every attempt of RRI shall "entail that the societal challenges are framed on the basis of widely representative social, economic and ethical concerns and common principles". Given the difficulties of finding a common horizon for all these

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<sup>9</sup> For a depiction of this fast shift compare last projects within FP7 (GREAT, Responsibility, Res-Agora, Progress) with calls in Horizon 2020 and projects like "RRI Tools" <http://www.rri-tools.eu/documents/10182/16038/RRI+Tools+Policy+Brief/fcadbf7f-5b82-401c-8cfe-d478c45fec59>

<sup>10</sup> Owen et al., (2013), p.14.

<sup>11</sup> [https://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/responsible-research-and-innovation-leaflet\\_en.pdf](https://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf)



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different aspects, the Commission also recommends thinking about these practices in terms of mutual learning and democratic principles<sup>12</sup>.

The second key, **Gender**, moves from a mainly methodological aspect to a more substantive one. It is sadly truthful that the number of women and men in research are not at all balanced, showing a lack of attention especially in those sectors not directly under the public influence. And it also true that often research products themselves are not shaped according to a gender perspective, maintaining the current bias in everyday practices. The Commission thus wants to stimulate not only the quantitative presence of women in research, but also its quality, meaning the concrete influence they can have in shaping R&I.

The third key, **Science Education**, addresses one of the main aspects undermining the relation between science and society. In fact, skepticism concerning the good intentions of scientists, or disagreement on future outcomes of products are often caused by the actual epistemic gap between scientists and society. Furthermore, disagreement between scientists renders the scenario even more puzzling for citizens. Therefore, the Commission believes education for future generation to be one of the crucial answers for filling the gap and improving the relationship. This key is also addressing the creation of future generations of scientists able to feed the R&I structure, a sector necessary if Europe wants to keep up with global economic challenges.

The fourth key, **Open Access**, is again a methodological one, focusing on the transparency of scientific results for publicly funded research projects. Under the same understanding of Science Engagement, public funds should be used for public benefits and sharing knowledge is considered to be an important mean in order to gain legitimacy and to generate new knowledge.

**Ethics** is the fifth key promoted by the Commission. This key is most substantive one integrating methodological measures with norms and values pertaining to the European community. The aim of respecting fundamental rights but also to go beyond the legal aspects is to “ensure increased societal relevance and acceptability of research and innovation outcomes”<sup>13</sup>. Ethics is directly connected to the sixth and last key that defines the subject of who should put in place and foster the RRI process.

**Governance** is indicated as the policy structure to prevent harmful outcomes but also to develop ethical measures for research and innovation. Governance is highlighted as the umbrella term that could drive the integration process of all the other five keys into one frame for responsible research and innovation.

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<sup>12</sup> For some examples, see, for instance, A. Fung, (2012), ‘Continuous Institutional Innovation and the Pragmatic Conception of Democracy’, *Polity*. Volume 44, Number 4, p. 616; A. Honneth, (2014). *Freedom’s Right*. Polity Press, Cambridge, pp. 253-304.

<sup>13</sup> [https://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/responsible-research-and-innovation-leaflet\\_en.pdf](https://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf)



In many respects this last point matches with the task embedded in the GREAT project. What governance model represents the best solution for integrating the five keys highlighted by the Commission? What are its tasks? And what are the dangers connected to providing a fixed model of governance? As we have shown in previous deliverables, and as emerged from our empirical work, our investigation requires a deeper and thicker understanding of the keys in order to fill them with some more substantial and more precise indications. We also need to rethink the keys whilst comparing them with methodological perspectives like the one proposed by the five pillars and finally match them with our theoretical and empirical work to see what an effective synthesis could be. Only at this point we will have a potentially exhaustive framework for the comparison of RRI theories.

**Engaging** people to participate in the development of research and innovation appears nowadays to be a basic criterion. Policy structures and processes have been forced to change their nature and tendency towards decision-making in order to regain the legitimacy that they were losing. The development of technology, especially communication technologies, has radically changed the relation between decision-makers and people who are affected by those decisions<sup>14</sup>.

On the one hand, a wide engagement appears necessary also when it comes to publicly funded projects for which tax-money is being used following reasons that could be generally agreed. In this sense we have shown how governance models that apply top-down decision-making structures (a standard or a revised-standard model) crush into societal rejection.

On the other hand, we also addressed the actual problems connected to an effective participatory process. In fact, if in principle everyone tends to agree on the necessity and value of social engagement, in real terms those participatory forms rarely turn out to have an effective role in the decision-making process<sup>15</sup>. As stated by Fung: *“The vast majority of those who attend events such as public hearings and community meetings do not put forward their own views at all. Instead, they participate as spectators who receive information about some policy or project”*<sup>16</sup>.

Most of the times, as highlighted also in our empirical investigations<sup>17</sup>, participation is seen as a necessary tool that is settled only for gathering opinions that won't have much influence over decisions. *“In most public hearings, for example, officials commit to no more than*

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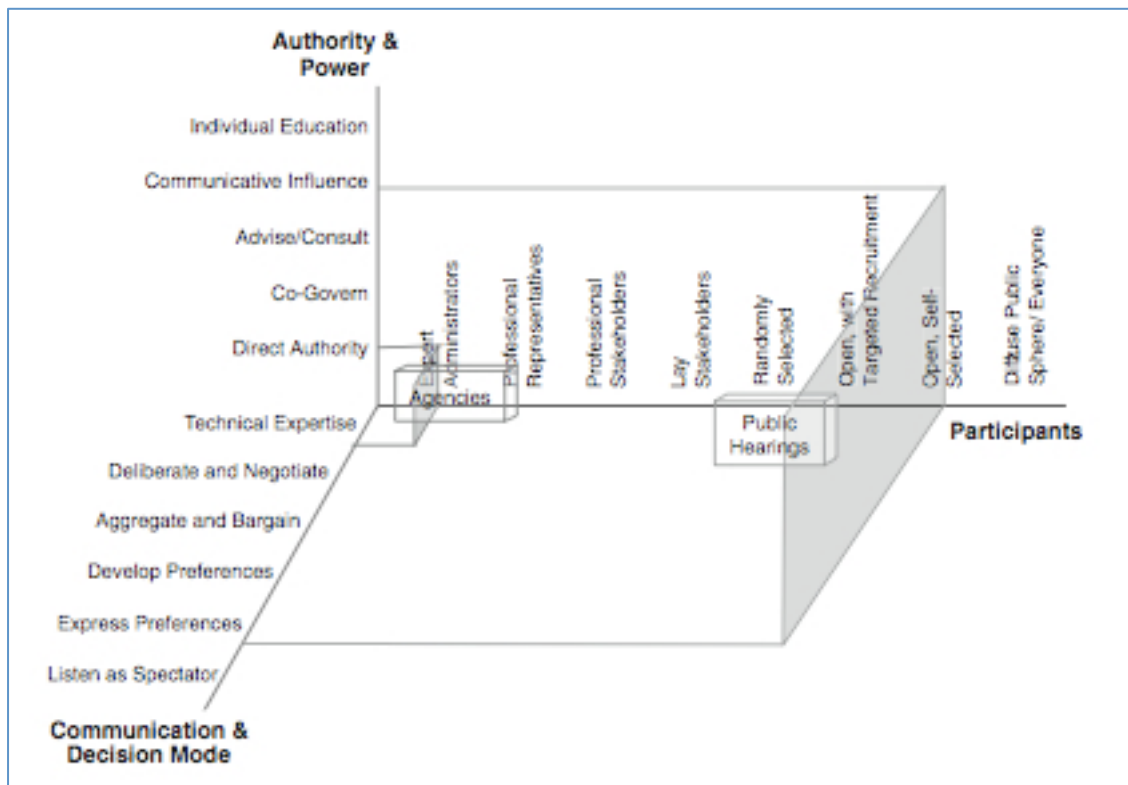
<sup>14</sup> A. Honneth, (2014). *Freedom's Right*. Polity Press, Cambridge, pp.253-304; Van Reybrouck D., (2014). *Contre les élections*, Arles, Actes Sud; A. Fung, (2006), 'Varieties of Participation in Complex Governance,' *Public Administration Review*, 66 (2006), 66–75.

<sup>15</sup> A. Fung, (2006). 'Varieties of Participation in Complex Governance', *Public Administration Review*, Volume 66, Issue Supplement s1, pp. 66–75, December 2006. GREAT Project, Del. 2.3, <http://www.great-project.eu/research/deliverables>.

<sup>16</sup> A. Fung, (2012). 'Continuous Institutional Innovation and the Pragmatic Conception of Democracy', *Polity*. Volume 44, Number 4, p. 616.

<sup>17</sup> GREAT Project, Del. 3.2, 3.4, <http://www.great-project.eu/research/deliverables>.

receiving the testimony of participants and considering their views in their own subsequent deliberations”<sup>18</sup>. Although it is not the only possibility and considering its major complexity, engagement can be conceived in different manners, unfortunately not all effective. As shown by Fung’s demo-cube, participation varies according to communication/decision-mode, participants and the authority and power addressed:



Engagement can also clash with another aspect that governance always needs to consider, efficacy. In fact, the imperative of a wide engagement doesn’t settle the threshold to which this engagement should be limited in order to be able to make a decision in a reasonable space of time and for the sake of action. Given, for instance, that R&I in Europe need to keep up with global challenges, time and efficacy are also two main aspects. As emerged from recent investigations it is still difficult to understand who to involve and to which extent. Engagement *per se* doesn’t establish the balance between participation and all those forms that facilitate a decision, i.e. deliberation. The balance between the two sides of this conundrum is still far from being reached but still it is important to highlight the insufficiency of stressing mere participation as a panacea.

<sup>18</sup> A. Fung, *Ibidem*.





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We are not at all denying the crucial role of engagement for the development of science and society relation. Our investigations, both theoretical and empirical, have shown that irresponsible, or better say, unethical practices often involve a wrong or little care towards engagement. We can then affirm that engagement itself doesn't imply a responsible behaviour but rather a complex tool that needs to be promoted considering the effective role it is going to play in the decision-making process. It is the starting point of a responsible behaviour not the end point.

In this sense we believe participation to represent the starting point for every governance process, and the stress placed by the European commission, not only to assume it as a precondition, but enforcing engagement as much as possible, must be seen as an ethical value and a vital political point.

What we need to put in evidence is a point that is already implicit in the six keys. In order to achieve a satisfactory level and quality of participation it is important to highlight further measures and mechanisms that can define the terms and the extent of engagement.

It is in the wake of this attempt that we should understand the other keys provided by the European Commission.

Engagement needs to be driven towards some more precise contents and methodologies. But first of all it needs to be ensured that all the means for a substantial participation are guaranteed. One of these means is surely well indicated with the second key highlighting the importance of gender equilibrium. **Gender** issues crosscut different dimensions generating several matters. Here though, the indication cannot be seen outside of the first imperative "engage" and tries to tackle one of the main aspects of participation, the equal preliminary chance that must be given to all actors. Disproportioned representation at all levels, difficulty to access, products or processes designed following a phallogocentric perspective, are all signs of (in)visible barriers that are still in place 'against' women to 'participate'. Unfortunately, the scenario regarding gender is still unacceptable and the data themselves show an important lack in this sense. We can't bring to attention further analysis that could show more hidden barriers but we can highlight how the "SHE Figures report" draws a truthful picture<sup>19</sup>. There is no wonder then that the Commission wants to place a special attention on this particular issue. It is not only a contextual problem or a philosophical issue, it is part of the very participatory process to guarantee access to all the actors potentially involved.

Another factor concerning engagement is to provide the right tools for actors to be able to participate. Removing physical barriers and setting public audits or enquiries, etc., are surely important steps but need to be integrated with more subtle though crucial ones. Often people are not trained or skilled to perfectly understand the potential development of

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<sup>19</sup> [http://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/she-figures-2012\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/she-figures-2012_en.pdf)





technologies. Knowledge and awareness are fundamental factors for settling debates on equal premises. Awareness has a long tradition as a political tool able to favour emancipation and the Commission shows the depth of its aim to not dismiss it.

**Science Education** and **Open Access** are thus to be understood as the necessary knowledge for actors to engage in discussions, to understand technical controversies, and to be able to propose new solutions. The only way of enabling a reflexive process around research and innovation is to raise the general knowledge on scientific issues. Furthermore, in order to promote science in society, to form new scientists, to increase knowledge production across Europe, but most of all to increase democracy it is important to start with education<sup>20</sup>.

All these keys are meant to represent the primary and fundamental condition in order to develop responsible innovation. If we want to have responsible practices people need to be in the position to participate. Therefore gender, science education and open access are fundamental and formal criteria defining the one of engagement. However, we could ask ourselves why participation has this crucial role in the six keys.

However, we are still in a position that doesn't help us in solving one of the main obstacles of participation, agreement. In fact, even if we deepen the legal and epistemic conditions for participation, we can't be so optimistic to think that we'll automatically reach an agreement on the consequences of technologies. Two conflictual perspectives that are engaged in a thick manner into the discourse will still probably face what has been called an epistemic controversy. The distance between two (or more) actors will remain at an epistemic level because no evidence can be provided that will make one of them change their minds. As highlighted also in Del. 2.3, the rational justification of a norm doesn't imply the conditions for its application. Such stasis can be overcome only if we move from the epistemic ground on which most of the conflict start and expands to the ethical and political dimensions, spheres where a solution can be proposed. *"When an epistemic discussion attracts the attention of the general public the result is a quite often an improper politicising effect on scientific debate. This can be shown [...] in the irrational struggle concerning the data: interest groups look for support from experts who share their political objectives"*<sup>21</sup>.

It is not by chance then that the last two criteria are comprised in the six keys, perhaps the most important ones, try to represent an answer to an already known problem. According to our perspective these last two, **ethics** and governance, are meant to drive the normative plurality embedded in responsible research and Innovation in order to gain legitimacy without losing efficacy.

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<sup>20</sup> J. Dewey, (1916), *Democracy and Education: An Introduction to the Philosophy of Education*.

<sup>21</sup> R. Von Schomberg, 'Controversies And Political Decision Making', in R. Von Schomberg (ed.), *Science, Politics and Morality* © Springer Science+Business Media Dordrecht 1993, p.18



As we have described in Del. 2.2 and 2.3, the main problem concerning the development of RRI is how to make all the different normative settings come to terms in a reasonable period of time without imposing any of them. Responsibility is a concept that contains different acceptions going from legal or economic ones, like accountability, to some that we might label after a moral wake, like care or blameworthiness<sup>22</sup>. Therefore, when we want to define a responsible behaviour or decision we can think of all these different sides. All these acceptions are expressions of several different perspectives that come into play with research and innovation. The question is: how do we assess and eventually choose the right one? Which approach can help us in adopting the best perspective for responsibility to represent the right answer?

Following Del. 2.2, 2.3, and a Hegelian reading of the concept, we understand responsibility as a sort of conceptual frame in which we can find all the different acceptions mentioned above. However, we believe it would be a mistake to take into consideration only one or some of those acceptions, whilst dismissing the others. What we rather consider to be the best solution is to keep them together as parts of the same meta-concept. Only by this complementary structure we can maintain and develop an ethical understanding of responsibility.

It is in this light in fact that ethics can represent the core asset of values and norms that should be promoted. Apart from the legal scheme to which it is often reduced, ethics should guarantee and promote the pluralism that all the societal perspectives are taken into account in a balanced way. As the Commission states: *“beyond the mandatory legal aspects, this aims to ensure increased societal relevance and acceptability of research and innovation outcomes”*<sup>23</sup>. Furthermore, ethics should not be conceived as a mere aleatory discussion aimed at blocking economic development. As the Commission suggests: *“ethics should not be perceived as a constraint to research and innovation, but rather as a way of ensuring high quality results”*<sup>24</sup>.

If the Commission needs to firmly highlight these aspects is because we often assist to a major misunderstanding of ethics, its nature and function in society. In fact ethics is neither a set of marginal rules against economic development, nor a fixed scheme provided by transcendental source alien to society. Instead, ethics is the objectification in institutions of an equal degree of legal rights as well as inner freedom for all the members of a given community. Ethics represents an overcoming of too specific (single) or too formal (generic) positions into an identifiable asset of values and norms carried on by institutions. It

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<sup>22</sup> Vincent N. A., van de Poel I., van den Hoven, J. (Eds.), (2011) *Moral Responsibility. Beyond Free Will and Determinism*, Dordrecht, Springer; P. Ricoeur, (2000). *The Just*, Chicago, The University of Chicago Press.

<sup>23</sup> [https://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/responsible-research-and-innovation-leaflet\\_en.pdf](https://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf)

<sup>24</sup> [https://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/responsible-research-and-innovation-leaflet\\_en.pdf](https://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf)



distinguishes itself from morality and from law of which it maintains the core asset but providing an overall structure. The aim of an ethical stance it is to promote a level of self-realization through self-determination and objective structures. It should not be a surprise then to find a close connection between ethics and responsibility as the latter is the role each individual should assume in order to pursue the former. However, we cannot have any form of responsibility if we don't presume the relative degree and form of freedom. Only relying on a presupposition of freedom can we assume responsible behaviours.

In other words, ethics is the realm where freedom is fully realized, and this freedom cannot be reduced to one of its acceptions but rather must be conceived as a multi-layered conception. Therefore ethics is at the same time the sum and something beyond the different kinds of freedom we find in a specific community. Accordingly, the spectrum of understandings of responsibilities will vary according to the one of that freedom. Besides, also the relationship between these acceptions of both responsibility and freedom will substantially contribute to shape our meaning of a 'Responsible' Research and Innovation. If we consider them in an ethical way as the Commission seems to be doing then all the acceptions of responsibility should be conceived in an integrated and complementary way. If, instead, we don't want or need to have an ethical frame for RRI, then all forms of responsibility could be developed according to the will of the strongest, or another reference point should be developed. As we have shown in Del. 2.3, this stand point cannot be represented by rationality on its own, so the question would be what reference could embed the appropriate degree and balance of legitimacy and efficacy?

We believe, along with the Commission's indications, that RRI should be conceived and developed according to an ethical framework. Ethics shall not be conflated to morality or to law but rather incorporated then into a complementary framework. Therefore responsibility cannot be seen in a reductive way holding one of its sub-acceptions, but should be fostered in all its acceptions.

We will explain better our understanding of ethics to avoid misunderstandings.

Following Hegel's *Philosophy of Right*<sup>25</sup>, we need to highlight the conceptual shift that ethics has been undergoing during the eighteenth century. We must start from a fundamental modern assumption. If a political system aims at reaching the legitimation connected to some form of justice it needs to guarantee the freedom of its members. However different this has been conceived, the path throughout modernity has always been focused on developing forms of freedom aiming at self-determination or self-realization<sup>26</sup>. Ethics is the social form that the realization of freedom needs to assume if the latter is conceived in its full deployment.

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<sup>25</sup> G.W.F. Hegel, (1991). *Elements of the Philosophy of Right*, Cambridge, Cambridge University Press.

<sup>26</sup> C. Taylor (1989), *Sources of the Self: The Making of the Modern Identity*, Harvard University Press, Harvard.



The first and most basic form of freedom that we can find in western societies is surely expressed by right and the status of equal liberty that law provides in its different dimensions. The possibility of thinking freedom as embedded in right finds its origins in Greece but was developed throughout Roman law throughout history. However, it is in seventeenth and eighteenth-century Europe that right became positive, substituting previous privileges with a set of rules, and enabling constitutional democracy as a form of legitimacy for power. This shift aimed at guaranteeing citizens the same degree of individual autonomy, although we can highlight a twofold nature of this process. On the one hand legal rights foster the possibility of action, the capacity of obtaining things (property, contracts, etc.). On the other hand they preserve a space where individuals can develop their own characters through reflexivity or emotions, etc.. *“In Modern liberal societies there has always been widespread agreement that individuals can only see themselves as independent persons with their own independent will if they enjoy subjective rights guaranteed by the state, which grant them a space in which they can their preferences and intentions”<sup>27</sup>.*

This kind of freedom has been widely considered as a ‘negative’ and individual kind of freedom as it protects individuals from abuses but doesn’t force them to act<sup>28</sup>. If on the one hand it guarantees the possibility of equal access to political life<sup>29</sup>, on the other its domain can be seen as a shell protecting individuals from external reality.

When it comes to RRI, legal freedom, as well as legal responsibility shouldn’t be confined to its liberal understanding of protecting individuals from external interference for many reasons. A practical reason would be, as noted by Von Schomberg, that *“the principle of the causal agent (blame) cannot be applied. Neither eventual “actors” nor “victims” can be identified when using a new technology. It is, e.g., impossible for a victim of the Chernobyl disaster in Europe to go to a court of law and claim that the disease from which he is suffering has been caused by nuclear radiation”<sup>30</sup>*. The same can be said for more recent events as well as for future ones. This means that: *“the legal system can no longer fulfill a normative role as regards the admissibility of technological actions”<sup>31</sup>*.

Furthermore, right in a modern liberal society can be conceived only by presupposing all the structures and processes that found it and that lie in a pre-juridical dimension.

We also believe that the kind of freedom at the basis of legal norms should represent the space for developing reflexivity and judgments on a common life and not only a barrier to our common development. Otherwise, we should consider, *“informal non-juridical*

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<sup>27</sup> A. Honneth, *Freedom’s Right*, (2014), p. 71.

<sup>28</sup> I. Berlin, ‘Four Essays on Liberty’; Mill, (1998); Honneth, (2014).

<sup>29</sup> Although law doesn’t define the terms and degree to which political participation can and should be conceived.

<sup>30</sup> R. Von Schomberg, ‘Controversies And Political Decision Making’, in R. Von Schomberg (ed.), *Science, Politics and Morality* © Springer Science+Business Media Dordrecht 1993, p.19.

<sup>31</sup> *Ibidem*.



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*obligations, attachments and expectations as mere barriers to our own subjectivity*<sup>32</sup>. Accordingly we wouldn't see how a debate, proceedings and all those communicative structures necessary for developing a common perspective could be put in place. What stands at the basis of law is in fact the capacity and necessity of abstracting from determined cases in order to establish and maintain equality. But, if on the one hand abstractness represents a crucial precondition for society, on the other hand it will inevitably ignore the particularities connected to our subjectivity, not being able to enhance the freedom necessary to our self-determination.

In other words, right is not able to cover the large space where our individual lives are developed in a sense that goes beyond already established, basic, regulatory forms of living together.

It is then necessary to conceive another form of freedom next to the legal one. Kant was probably the first to provide moral freedom with an autonomous dignity separated from its legal aspects. He highlighted exactly the impossibility of law to respond to the ambitions, wishes and needs of individuals. Furthermore, right cannot regulate that space where laws themselves can be formed and which relies on values and other kind of norms. For Kant freedom cannot be sufficiently expressed by a juridical dimension but needs to include also a moral perspective. Accordingly, Kant offered a perspective of morality detached from law, where individuals could find in them the answers and truths about their own particular lives.

*"In dividing law from morality, Kant affirmed the inadequacy of right to fulfill the ambitions of individuals. Whereas "in formal right . . . there is no question of particular interests . . . any more than there is of the particular motive behind my volition, of insight and intention" (pars. 37, 106 Addition), "this question about the self-determination and motive of the will ... enters . . . in connection with morality. [...] Therefore, through Kant, with the principle of morality and the inner selfhood of the "person" of right that it establishes, the determination of the modern state is philosophically brought to its concept in its "prodigious strength and depth" whereby "it allows the principle of subjectivity to progress to its culmination in the extreme of self-subsistent personal particularity"*<sup>33</sup>.

Subjective freedom guaranteed by morality, the inner development of our own goals and inclinations, is then a fundamental means through which individuals can put forward their specific characters to gain their self-realization.

*With it, universal recognition is granted the principle that freedom "is the last hinge on which man turns, a highest possible pinnacle, which allows nothing to be imposed upon it;" and that man bow to "no authority" when it goes against his freedom. For this, Kantian*

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<sup>32</sup> Honneth, (2014), p.73.

<sup>33</sup> J. Ritter (1982), *Hegel and the French Revolution. Essays on the Philosophy of Right*, Cambridge (MA), MIT Press, p.153.



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*philosophy has won "great popularity"; with it, it is now known "that man finds in himself an absolutely firm, unwavering centre-point;" so that he "acknowledges no obligations, where his freedom is not respected" (LHP III, 459)<sup>34</sup>.*

In widening the understanding and significance of freedom, Kant expressed the progress of subjectivity and explicitly elected it as the intransgressable principle of modernity<sup>35</sup>. From Kant on freedom cannot be fully achieved if it not embedding the subjective character of individuals. A path that how Joachim Ritter reminds us, includes a vast spectrum of sub-acceptions flowing into Kant's understanding: *"Subjectivity in all its "primary shapes" of "love, romanticism, the quest for the eternal salvation of the individual, etc.; next come moral convictions and conscience," now "has become the universal effective principle of a new form of civilization"*<sup>36</sup>.

However, the distinction operated by Kant between the internal and external world appears to be too rigid provoking conceptual short-circuits and empirical mismatches. If it is true that subjectivity represents the main standpoint of modernity and freedom cannot be fully understood without the development of subjective traits, it is also true that the renounce to objectifying those traits in an intersubjective structure for a common purpose undermines the very possibility of developing those ambitions. *"The Kantian rigidifying of the distinction of inwardness and externality into a dualism of disunion has led to a detachment of philosophical ethics from the framework of legal and political theory, which emigrated from philosophy following the Kantian distinction of legality from morality"*<sup>37</sup>.

This separation of morality and law, i.e. moral responsibility and accountability, is also at the basis of Kelsen and Hart's interpretation of responsibility and liability<sup>38</sup>. For Kelsen, as well as for Hart, responsibility is either moral responsibility or legal liability but not more than this. It is not difficult to draw the conclusion that a similar interpretation of the concept when translated into RRI terms would not be helpful to overcome moral, epistemic but most of all normative clashes. In fact, each situation, according to neo-positivist conceptions of responsibility, must be judged only according to the set of rules and norms pertaining to the sector 'in charge'. Furthermore, responsibility has to be mostly conceived in legal or moral terms.

So, considering responsibilities of an industry promoting a new product like, for instance, GMOs or Google glasses, where current legislations are respected, we can surely affirm that the company is not liable. At the same time that company (ex. Google, Monsanto) could be

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<sup>34</sup> *Ibidem*.

<sup>35</sup> There is no need here to go through a two-fold understanding of freedom as self-realization and self-determination because Kant still follows the path we are going through.

<sup>36</sup> J. Ritter, *Ivi*, p.157.

<sup>37</sup> J. Ritter, *Ivi*, p.158.

<sup>38</sup> H. L. A. Hart, (2008). *Punishment and Responsibility. Essays in the Philosophy of Law*, Oxford University Press, Oxford; Hans Kelsen, *Collective and Individual Responsibility in International Law with Particular Regard to the Punishment of War Criminals*, 31 Cal. L. Rev. 530 (1943); H. Kelsen, (1967) *Pure Theory of Law*, Berkeley.





considered to have acted in a morally wrong way by not gathering information on environmental risks potentially caused by the technology itself. The fact that we can define precisely in which dimension responsibility should be allocated doesn't help us in solving the contradiction for which a product can be considered 'responsible' and 'irresponsible' at the same time. As pointed out by Ricoeur, *"the purely juridical idea of responsibility, understood as the obligation to compensate for damages or pay the penalty, can be considered as the conceptual outcome of this displacement. Two obligations remain: that of acting, which the infraction violates, and that of compensation or paying the penalty"*<sup>39</sup>.

We can detect several contributions nowadays that implicitly rely on this background and thus maintain this sort of distinction<sup>40</sup>. For this reason most of these contributions cannot pose themselves the question of how to integrate the different kinds of responsibilities but they rather focus on how to distinguish them enough. Separating or privileging acceptations of responsibility can lead to a unilateral understanding of the challenges that RRI brings along. Consequently, although they represent fundamental contributions to the question of responsibility, we can't assume them to be exhaustive answers to the many problems raised by RRI.

So, if on the one hand the development of morality as an inner regulation allows us to enhance our freedom, the rigid distinction made by Kant implies some conceptual difficulties that impede freedom from developing into an external dimension. Thus, freedom remains what Hegel would call a 'beautiful soul'.

As lucidly depicted by Ritter, in his reading of Hegel's Philosophy of Right:

*"here lies at the same time the element which forces Hegel to proceed from morality and legality to relationships which lie beyond the Kantian framework. For Hegel, its problem lies not only in the fact that Kant, with his demarcation of legality and morality, restricts right - legitimately speaking - to external actions of choice, but that he considers the sole form and reality of human conduct to be the morality, which through the demarcation, has been withdrawn into inner life and can be verified by no example from external experience. With this, the being of subjectivity, which Kant first conceived, is limited by him to inwardness in all the religious, moral, and personal relations determining it. Here lies the one-sidedness which, according to Hegel, plagues the Kantian position in all its greatness. With it, Kant cannot escape from the dualism of inner morality and the outer reality facing it. Therefore, with Kant, morality is "without execution," it remains "an ought to be."*<sup>41</sup>

Accordingly, Hegel cannot and does not want to ignore the Kantian view of legality and morality, making it his point of departure, but wants to overcome it.

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<sup>39</sup> P. Ricoeur, (2000). *The Just*, The University of Chicago University Press, Chicago, p.19.

<sup>40</sup> Vincent N. A., van de Poel I., van den Hoven, J. (Eds.), (2011) *Moral Responsibility. Beyond Free Will and Determinism*, Springer.

<sup>41</sup> J. Ritter, *Ivi*, pp.157-8.



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*“In the succession of stages in the development of the Idea, in which all components incorporated in it, the "immanent self-differentiation of the concept," are "moments in the development of the Idea" (pars. 33, 31), the beginning is not something which remains behind; it becomes "sublated" in the whole in which it stands: "What is sublated is not thereby reduced to nothing . . . It still has, therefore, in itself the determinateness from which it originates"; "thus what is sublated is at the same time preserved" (SL 107). When disregard for the individual and deification of the state are ascribed to Hegel's philosophy, this ultimately rests upon a failure to conceive sublation as "preservation"; and so the state appears, as it stands at the end, as the negation and vanishing of the beginning”<sup>42</sup>.*

It is in this light that we can understand and perhaps agree with Hegel's explanation of ethics as distinct from morality. *The ethical is introduced by Hegel in distinction from the morality (Moralität) of the subjective will and its "good in the abstract" as the "absolutely valid laws and institutions" (par. 144), the "ethical powers" (par. 145), "custom," "habitual practice" as the "general mode of conduct" of individuals (par. 151), "social and orderly life" (par. 170), "class" (par. 207), "corporation" (par. 253) and in summary as "institutions" (pars. 263, 265), which, comprising "the components . . . of rationality developed and actualized," "are, therefore, the firm foundation . . . of the state" and "the pillars of public freedom”<sup>43</sup>.*

Ethics, according to Hegel, must be seen as the place where subjective needs, values, preferences i.e., subjective freedom, meets with objective institutions expression of subjectivities. Hegel wants to overcome or sublimate, the conflation of ethics to morality by highlighting this transition from inner to external freedom. *“The sublation of the standpoint of morality thus is of such form that Hegel goes on to custom, habitual practice, and political and social institutions in order to conceive these as the "ethical" reality of the subjective will and its good which were posited in morality”<sup>44</sup>.*

The stress on this distinction appears fundamental for it is not only a terminological innovation or an enlargement of the concept of morality. Ethics was not possible in the Kantian frame because of the role assigned to subjectivity as supreme judge. Kantian ethics, limiting itself to the inner determination of will, rescinds the dissolution of ethical life and incorporates morality into “philosophical politics”.

In the Greek understanding of ethics, Hegel found the original meaning of the term ethos—custom (the ancients knew nothing of conscience) The reference to the Greek ethos is thus unequivocal. Nevertheless, it has nothing to do with a celebration of Greek ethos, given the complete absence of subjective stances. For Aristotle ethics was:

*“the doctrine of ‘ethos’ taken as the constitution of individual life and action in the household and the polis, a constitution developed in custom, use, and tradition. It belongs in practical*

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<sup>42</sup> J. Ritter, *Ivi*, p.153-4.

<sup>43</sup> J. Ritter, *Ivi*, p.160.

<sup>44</sup> J. Ritter, *Ivi*, p.161.





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*philosophy because "praxis" has reality not in the immediacy of action, but in its integration into the polis' ethical and institutional order. "Ethics" is therefore the doctrine of what is good and right, which determines the action of individuals as it is rendered universal in ethos and nomos. It is the foundation of "politics" insofar as political leadership and constitutional and legal statutes have their ground and determination (telos) in the praxis "ethically" constituted in the household and the polis"<sup>45</sup>.*

However, as hinted at, for Aristotle there was no space for subjective freedom, the concept rising only with Christianity, and Hegel was perfectly aware of this lack. Ignoring subjectivity, apart from being impossible after Kant, would mean to go back to an understanding of ethics that Hegel saw as 'naïve ethics' because it was considering a fundamental side of ethics. At the same time the growing role of subjectivity, leading to the dissolution of objective institutions for ethics, formed a pathological scenario that Hegel wanted to overcome.

It is in Christian Wolff that Hegel denotes the peak and decisive breaking point of a process that, starting with Christianity, posed subjectivity against institutions ending in a new inner world detached from ethical institutions.

*"In Wolff's dissolution of ethical life, it becomes reduced to the inner determination of human action by "human nature." Thus, in Wolff's "Philosophia practica" it still certainly remains true that it teaches the ways in which the free man can determine his actions through laws according to his nature; at the same time, however, it restricts itself to the law which determines the action of the free individual in his inwardness as the law of his human nature. In this turn, "custom" loses its institutional character, which is implicitly constitutive for the ethics belonging to philosophical "politics." Wolff defines it as the "constant, ever existing way to determine (one's own) action:"<sup>14</sup> Custom is thus, as Wolff states in opposition to those who say, "qui de moribus hominum ex institute commentati sunt:" only "mores animi." They are based exclusively upon "inner principles." With this, the concept of institutional ethical life is annulled"<sup>46</sup>.*

Hegel manages to bring back ethics into the political realm from where it had been expelled, by recapturing the significance of ancient ethics and completing it with subjective freedom. For Hegel, *ethical powers which regulate the life of individuals" [...] "in exaltation above subjective opinion and caprice," there is always also entailed the no less fundamental determination that it is in individuals that these ethical powers "are represented, have the shape of appearance, and become actualized" as an objective "circle of necessity"<sup>47</sup>.*

The relation between subjective will and institutions must be conceived as interwoven, as the distinct identification of both sides with each other. *"This entails that just as these are*

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<sup>45</sup> J. Ritter, *Ivi*, p.165.

<sup>46</sup> J. Ritter, *Ivi*, p.167.

<sup>47</sup> J. Ritter, *Ivi*, p.169.



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*reality for individual action, so they consist in and only have reality in the life and action of individuals. Virtue as "deportment" in individual life and action therefore has at the same time "objective" significance: Only where it is given, do institutions also exist in a good manner; they become dead enclosures when the life of the individual can no longer find itself and realize itself within them. Ethical life is the institutional reality of human selfhood. When, therefore, subjectivity resides within itself at the standpoint of morality, and makes itself the ground and master of what is ethical, and so renders objectivity something insubstantial and unreal (pars. 140, 140 Addition), the danger exists that the moral will will subvert the institutions giving it reality. Hegel politically asserts this against the position according to which the individual seeks his freedom in distinction and separation from the universal, and opposes to the existing institutions and the "completed fabric" of the state an ought-to-be which subjectivity permits to arise from the "heart, emotion, and inspiration" and the "subjective accident of opinion and caprice"(emphasis added)<sup>48</sup>.*

*"Hegel asserts that man has to decide and act not in the inwardness of disposition alone, but rather in the relations in which he stands, works, lives, has interests, and takes on responsibilities and duties. In the sublation of morality into the objective ethical being, he thus sets up the conformity of the individual to the duties of the relationships to which he belongs, his rectitude, as the universal determination of ethical reality"<sup>49</sup>.*

Of course we don't have to forget that these institutions are not fixed and closed from critiques. As we said in previous deliverables, institutions are and should be the objectification of individual freedom, the space where subjective characters are realized. Thus, in order to respond to this aim, institutions need to prefigure structure and processes that could facilitate changes and developments according to societal developments (Maesschalck & Lenoble, date). At the same time we need to strongly reaffirm the difference between values and norms making the latter continuously passible of judgment and implementation.

It is exactly this understanding of ethics that needs to be brought up again in order to respond to the needs and challenges that RRI poses us nowadays. Only by connecting unilateral perspectives with social institutions and oiling the gearwheel of their relations we can aspire to obtain examples of Responsible Research and Innovation.

Whose task should it be, to promote an ethical attitude towards RRI? The last of six keys proposed by the European Commission responds to this question and completes the framework for assessing Responsible Research and Innovation. The previous keys also indicate the ways in which governance should 'realize' this attempt but it is better to clarify it.

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<sup>48</sup> J. Ritter, *Ivi*, p.172.

<sup>49</sup> J. Ritter, *Ivi*, p.174.



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**Governance** is the active framework to implement the relationship between rulers and ruled and to shorten the distance between them. Following Jessop, *governance is an "important mean to overcome the division between rulers and ruled in representative regimes and to secure the input and commitment of an increasingly wide range of stakeholders in policy formulation and implementation"*<sup>50</sup>.

According to Jessop and Schön, an actual governance model requires both groups (rulers and ruled) to engage in a social learning process<sup>51</sup>. As the Commission seems to believe, given the other five keys, joined participation in collaborative problem-solving can lead to critical scrutinizing of governing variables: goals, values, plans and rules.

Governance then needs to be developed through a dynamic structure. A structure that is able to redefine its own norms in order to respond to the grand challenges in accordance with social needs and claims<sup>52</sup>.

Following this perspective, we indicate "reflexive governance" as the one able to review its own mechanisms and to ensure institutional learning<sup>53</sup>. Hence, it results in the co-design of institutions and the elaboration of common social representations. Consequently, such governance has to assume a *complementary* perspective on social dynamics, developing through learning ability and adaptability across different social dimensions.

In D2.3 we tried to warn about the risk of facilitating a reflexive process that is not able to raise the awareness of normative constraints in the debate. However, it is also important to think of governance as a structure that can establish engagement through an ethical perspective, that is, a complementary perspective on social dynamics. 'Ethical governance' is something we could describe as an attempt to take into account contextual values and norms in order to create a dialogue between different single perspectives so to obtain and eventually construct, a shared framework. The risk is too often visible in a unilateral resolution of normative constraints paving the way to protests rising from the lack of legitimacy or efficacy.

Ethics is then the awareness of the different positions, the possibility of introducing novelties (new norms), and the necessity to continuously pursue what Rawls called "reflexive equilibrium"<sup>54</sup> amongst them.

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<sup>50</sup> Jessop, B. (2003), 'Governance and Meta-governance: On Reflexivity, Requisite Variety, and Requisite Irony'. In H. P. Bang (Ed.), *Governance, as Social and Political Communication* (pp. 142-172). Manchester, UK: Manchester University Press.

<sup>51</sup> Schön, D. (1983) *The Reflective Practitioner. How professionals think in action*, London: Temple Smith.

<sup>52</sup> [http://ec.europa.eu/research/innovationunion/pdf/expertgroups/The\\_challenge\\_of\\_addressing\\_Grand\\_Challenges.pdf](http://ec.europa.eu/research/innovationunion/pdf/expertgroups/The_challenge_of_addressing_Grand_Challenges.pdf)

<sup>53</sup> Lenoble, J., Maeschalek, M. (2003), *Toward a Theory of Governance: The Action of Norms*, trans. by J. Paterson, The Hague.

<sup>54</sup> Rawls, J., (1979). *A Theory of Justice*, Harvard, Harvard University Press.



Lets give an example. For instance, products like GMOs affect different dimensions and imply different perspectives. There are economic issues. Shall we improve our food production in order to spend less and produce more? Which economies are going to benefit from it? Legal ones: what are the laws we need to promulgate in this sense, according to which aim? Environmental ones: is this good for the soil and land, are we going to destroy some species? As well as health doubts: Are crossbreeds potentially dangerous considering allergies, or for the immune system? Are they going to increase the possibility of contracting cancer? And even moral ones: is it right for human beings to substantially modify its environment to the point that they start creating a new nature? Are we sure that it is a good action?

We could go on in listing the different matters involved in such a debate but the main point is not which dimension to choose but rather how to make them interact together without ignoring any of them. It is somehow useful to show what ethics should represent.

In fact, none of these perspectives and positions has in principle supremacy on the others. Different norms come into play in the discussion without any of them possessing neither the epistemic justification nor the political legitimacy to stand above the others. What is at stake here is the fact that different norms and different reasons compete in animating a discussion that is basically based on 'private'(individual, single) perspectives.

The actual resolution of a similar moral, epistemic and political dilemma can then be commonly found among three possible options.

The first one, as we have shown in previous deliverables (D2.3, D3.3) is to, by assuming an epistemological distance between people and those who are considered to be experts, rely on the opinion of few that will be the only one entitled to make a decision. This option, far from possessing a political legitimacy, doesn't help to solve the problem. If we need to take into account different normative sets in order to make a functionally correct decision, dismissing some social dimensions, turns out to be only a short cut for decision-making and not a reasonable solution.

A second option could be to postpone the decision, investigate and find out better the consequences of a certain process/product for the future. The incapacity of adopting appropriate measures together with political concerns often ends up in this way. Besides, epistemic discussions can never lead to a definite answer, given the incapacity of finding a common ground<sup>55</sup>. Not to mention that often the debate is driven by interest groups undermining the possibility of reaching a discursive equilibrium<sup>56</sup>. GMOs cases represent a

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<sup>55</sup> R. Von Schomberg, 'Controversies And Political Decision Making', in R. Von Schomberg (ed.), *Science, Politics and Morality* © Springer Science+Business Media Dordrecht 1993.

<sup>56</sup> J. Rawls, (1979). *A Theory of Justice*, Harvard, Harvard University Press.



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general example, but we also find more specific situations like fracking establishment in Austria<sup>57</sup>. This ‘solution’ is perhaps the worst we can hope for. Although discussion requires time, and large proceedings are a necessary process, the outcomes show incapacity of developing society through norms construction creating a series of bad consequences at many levels. If the previous solution lacked legitimacy this one is also missing efficacy, an aspect that is fundamental for RRI.

We then have a third option, trying to combine efficacy with legitimacy, that is, what we indicated by a co-constructive (ethical) governance based on a democratic inclusive paradigm.

As shown in Del. 3.3, proceedings can be developed in different manners according to the epistemological and political presupposition adopted. If a technocratic paradigm appears to still be predominant in research it is also true that it doesn’t represent a feasible path for European Governance and it doesn’t seem to be an option for the European Commission. There is an implicit and subtle risk, however, of assuming the other two paradigms (ethocratic, epistocratic) as decision-making framework. Both share, with the technocratic one, a tendency of developing knowledge, norms and decision according to a small minority of experts. For this reason, we understood that we need a kind of governance that employs active manners of reflexive participation, a governance that facilitate procedure for norms construction in order to develop different understandings of responsibility, what we call a co-constructive (ethical) governance.

‘Ethical governance’ is exactly a structure that considers the sum of all these perspectives, objectified in common institutions, with the aim of reaching a reflexive equilibrium between legitimacy and efficacy. Consequently, ethical governance has to assume a complementary perspective on social dynamics, developing through learning ability and adaptability between different social dimensions.

In D.2.3 we stated that rationalistic-driven conceptions couldn’t assure the adoption of a norm given the distance that still exists between values and norms<sup>58</sup>. We have highlighted that normative clashes or a normative imposition can become a normative dialectic only if it is put in place a process that allows and enhance two orders of reflexivity.

Above we also highlighted how participation, even if based on a strong scientific knowledge, does not guarantee an agreement given the high possibility of an epistemic discussion<sup>59</sup>. As well moral stances appear unable to provide a justified and clear agreement. Different

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<sup>57</sup> This case has been analyzed by the Res-Agora Project and shows really interesting issues regarding the governance of RRI. <http://res-agera.eu/assets/IHS-1-Stage-1.pdf>

<sup>58</sup> J.-M. Ferry, (2002) *Valeurs et normes. La question de l'éthique*, Editions de l'Université de Bruxelles, Bruxelles.

<sup>59</sup> R. Von Schomberg, ‘Controversies And Political Decision Making’, in R. Von Schomberg (ed.), *Science, Politics and Morality* © Springer Science+Business Media Dordrecht 1993.



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values will likely turn out in a moral conflict because there is no external reference that, assigning supremacy to one position, will make the others resign. If on the one hand then we have epistemological discrepancies, on the other we find moral conflicts. It means that RRI cannot be reached only through these two dimensions, adding the fact that law cannot in itself provide any indication regarding the future or something already not established. In other words, logic, morality\* and law are not tools that could provide us with a just conception of RRI. At the same time, we are not affirming the necessity to ignore or get rid of them. Law guarantees that formal liberty necessary to guarantee equal access and rights to all individuals. Furthermore law provides with a negative liberty where the individual can develop her own values, beliefs and ambitions to the point that this kind of liberty could also be a candidate to assume the role of a set of fundamental norms for life in society. Logic is in general a fundamental asset in order to establish a connection with other perspectives. Without the role guaranteed by rational proceedings individuals wouldn't even be able to develop their own positions and characters. Morality\* is the chance to hold on values and develop a self-reflexive process useful to reach forms of self-determination. These three sides are necessary components of a conception of responsibility that relies on the acceptations of freedom they only can provide. However, these three dimensions cannot aim at representing a solution for RRI if taken on their own. We presume that if integrated into a wider frame where all of them play a substantial role in connection with the others we can then obtain a framework for assessing RRI.

## **6. Conclusions**

To summarize our analysis, a framework for assessing RRI theories needs to hold the theoretical and practical premises that we have put in evidence. RRI needs to be a normative frame based on engagement, potentially equal for every member of society and effective in its process. This engagement has to, not only permit, but favour dialectic between different normative perspectives, i.e. different actors, in order to develop common decisions. The outcome of this ambitious process is a framework that we call RRI and that can be justly managed only by ethical governance.

We believe that the six keys promoted by the European Commission are meant to be seen in this way and we highlighted how they represent a fantastic theoretical development for research and innovation. Of course our analysis is constructed on empirical data and therefore we imply that our interpretation of the keys represents also an efficacious framework.



The questions to which we still need to respond are how to translate this framework into an operational tool<sup>60</sup>. In the next deliverable we will need to construct a model of RRI according to the indications we have drawn up to now in order to make it operative.

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<sup>60</sup> This will be done in our WP6





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- [https://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/responsible-research-and-innovation-leaflet\\_en.pdf](https://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf)
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