

# Philosophy, Science and Values: A Programme for Technology Assessment

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7th Winter School on Technology Assessment  
Universidade Nova de Lisboa, December 6th 2016

# PhD Programme in Philosophy, Science and Values

- PhD Programme in Philosophy, Science and Values is organized by the following universities: University of the Basque Country (UPV/EHU), National Autonomous University of Mexico (UNAM) and Universidad Carlos III of Madrid.
- [http://www.ehu.eus/en/web/doctoradofilosofiacien  
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# Lines of Research

- Aesthetics and Cognition
- Bioethics
- History and Criticism of Philosophical Ideas
- History and Philosophy of Logic
- History and sociology of science and technology
- Knowledge and Democracy
- Knowledge and Values
- Ontoepistemical Issues of the Cognitive Systems
- Philosophy of Language
- Philosophy of Science and Technology
- Public Perception of Science and Technology
- Science, Technology and Public Policies

# Teaching staff

- ECHEVERRIA, JAVIER
- ETXEBERRIA, ARANTZA
- IBARRA, ANDONI
- INNERARITY, DANIEL
- MORENO, ALVARO
- MORMANN , THOMAS
- NAVARRO, JAUME
- PEREZ LARAUDOGOTIA, JON
- RUIZ-MIRAZO,KEPA
- VICENTE, AGUSTIN
- ALISEDA, ATOCHA
- BARAHONA, ANA
- BRONCANO, FERNANDO

# Staff (2)

- CASAS , ROSALBA
- GOMEZ TORRENTE, MARIO
- LOPEZ BELTRAN, CARLOS
- MARTINEZ, SERGIO
- MITCHAM , CARL
- MODREGO, AURELIA
- OLIVÉ, LEON
- PEREZ RANSANZ, ANA ROSA
- PUCHET, MARTIN
- RUIZ, ROSAURA
- SANZ CASADO, ELIAS
- VELASCO , AMBROSIO

# Research teams

- Information and Autonomous Systems (IAS Research). Philosophy of Biology and Cognitive Science
- Knowledge society and cultural diversity
- Practical Philosophy and Philosophy of Language
- PRAXIS. Philosophy of Science and Technology Group

# Training Activities

- **Activities of the Master's Degree and Doctorate School**
- Course in Information Tools and Resources for PhD Degree, Optional 12 hours
- Trans-boundary doctorials, Optional 40 hours
- **Programme activities**
- Seminar of dissertations advances, Compulsory 24
- Publication in a reference journal, Compulsory 100
- International Graduate Summer School, Optional 50
- Contributed paper at scientific conference, Compulsory 40
- Specific PhD students' seminars, Optional 15
- Stays at other institutions, Optional 300
- Thematic research seminars, Optional 15

# Training Activities (2)

- **2016 Courses:**
- Scientific English
- NVivo methodology
- Oral scientific communication
- Writing a scientific paper (design methodology)

# PhD dissertations

- Política cívica de la ciencia: culturas científicas, representaciones del riesgo y gobernanza, 2007.
- Dinámicas de constitución del riesgo: una propuesta composicional para la gobernanza del riesgo, 2007.
- The Causal Structure of Quantum Mechanics. Reichenbach's Common Cause Principle and Quantum Correlations, 2008.
- Diseño y gestión social de las electroenergías. Abordando su dimensión controversial, 2009.
- Supertareas newtonianas: la relación del indeterminismo con la pérdida de la energía en sistemas newtonianos anómalos, 2009.

## PhD dissertations (2)

- La constitución de una población. Prácticas representacionales en ecología de poblaciones, 2009.
- El diseño industrial en la sociedad de consumo: su rol en la configuración funcional y en la representación estética de los artefactos, 2009.
- La comunicación del riesgo: hacia un modelo efectivo y situacional de la comunicación del riesgo, 2010.
- Las pruebas genéticas predictivas y sus implicaciones para el consentimiento informado, 2010.
- Comunidades de conocimiento en el sistema vasco de ciencia, tecnología e innovación, 2012.
- La innovación tecnológica como red de interacción: la constitución reticular de un dispositivo tecnológico, 2013.

# PhD dissertations (3)

- La praxis constructiva del diseño tecnológico. Un análisis de sus dimensiones ontológicas, epistemológicas y metodológicas, 2014
- Eficiencia y confiabilidad en la lógica del descubrimiento científico , 2014
- Crítica del proceso de construcción del autoconocimiento en Ernst Cassirer: coordinación funcional, construcción simbólica y contextualización cultural, 2015.
- Evaluación de la actividad científica: conectividad relevante y calidad relacional. Una propuesta teórico-metodológica, 2015.
- Knowledge, Difference and Democracy: Group difference as an epistemic resource for democratic authority in multinational settings, 2016.
- Establishing a sustainable nanogovernance in Argentina. Nanotechnology with and for society, 2016.

# PRAXIS Research Group

- Diversity of lines of research:
  - \* Philosophy of science and technology
  - \* Epistemology,
  - \* History of science,
  - \* Science, technology and innovation studies.

[http://www.ehu.eus/es/web/miguel.sanchez.maza/katedra/praxis  
/about](http://www.ehu.eus/es/web/miguel.sanchez.maza/katedra/praxis/about)

# Responsible Research and Innovation (RRI)

## **Definition:**

“Responsible research and innovation means that societal actors work together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society.”

## **Six dimensions:**

Engagement

Gender Equality

Science Education

Open Access

Ethics

Governance

# RRI: Innovation as a contingent issue

- Contingency of:
  - Aims (right demands)
  - Expected solutions
  - Values, criteria, ... underlying assessment
- These need to be exposed to public debate as a constitutive part of innovation dynamics.

# A substantive view on RRI assessment

- By operationalizing RRI the scope of what may be conceived, debated and implemented is limited
- Two examples:
  - “Indicators for promoting and monitoring Responsible Research and Innovation” (Report from the Expert Group on Policy Indicators for RRI), 2015. [*Report*]
  - “Quality criteria and indicators for responsible research and innovation: learning from transdisciplinarity” (F. Wickson, A.L. Carew)

Criterion	Performance indicators		Perception indicators	Key actors
	Process indicators	Outcome indicators		
<b>Governance</b>	Identification of formal and informal networks of R & I that promote RRI, at both the national and the EU level	<p>For each of these networks:</p> <ul style="list-style-type: none"> <li>• number of RRI debates</li> <li>• number of RRI protocols</li> <li>• number of RRI policies</li> <li>• number of RRI agreements</li> </ul>	<p>Involvement of the wider public in RRI debates, measured for example through social media</p> <p>Involvement of the wider public in RRI policy, the development of policy, protocols</p>	National and supranational governments, major stakeholders in science and society
<b>Governance</b>	Activities of funders to promote RRI	<p>Number of funding mechanisms to support RRI activities</p> <p>Number of euros invested in RRI projects</p>	<p>Number of references in applications to RRI</p> <p>Number of collaborative RRI projects</p>	Funding organisations, stakeholders

## Proposed indicators for governance

Table 1. A rubric for assessing RRI.

Criteria	Exemplary	Great	Good	Routine
Socially relevant and Solution oriented	<p>Addressing a grand social challenge.</p> <p>Ongoing analysis of objectives and processes to favor the delivery of ‘wicked solutions’ (solving multiple challenges simultaneously)</p>	<p>Addressing a significant social need.</p> <p>Ongoing analysis of objectives and processes to maintain a focus on delivering a successful solution</p>	<p>Focused on a marginal or self-defined problem.</p> <p>Employing processes aimed at generating insights toward a solution, or a partial solution</p>	<p>Pursuing a purely personal interest.</p> <p>Possibility that process/product will only result in the creation of decontextualized knowledge or new problems</p>
Sustainability centered and Future scanning	<p>Inclusion of formal processes of future casting to at various points throughout the research and innovation process.</p> <p>Generating a range of positive and negative future scenarios and identifying and assessing associated risks and benefits of these for social, environmental and economic sustainability.</p> <p>Clear avenues for embedding responses to these possible futures and risk/benefit assessments into the project development</p>	<p>Inclusion of future casting activities at some point during the research and innovation process.</p> <p>Some attempt to integrate an assessment of the risks and benefits for social, environmental and economic sustainability.</p> <p>Identifiable points and possibilities for adaptation of the process to respond to the future scanning and risk/benefit assessment activities</p>	<p>Informal attempts to future cast at limited points in the project.</p> <p>A consideration of some associated risks and benefits in terms of one or more of the three dimensions of sustainability.</p> <p>Little indication of how the research and innovation process may adapt and respond to either identified possible futures or their risks to sustainability</p>	<p>A singular optimistic prognosis for future project outcomes with no clear effort to identify risks or survey possible future scenarios</p>
Diverse and Deliberative	<p>Openly and actively seeking ongoing critical input, feedback and feed-forward from a range of stakeholders.</p> <p>Encouraging and rewarding transformative mutual learning.</p> <p>Employing an evolving integrative method and consciously employing a TD process</p>	<p>Inviting, incorporating and integrating stakeholder views at various points along the research and innovation process.</p> <p>Actively seeking dialogic interaction with stakeholders and open to mutual learning.</p> <p>Encompassing a wide range of methods and adopting an interdisciplinary process</p>	<p>Limited stages of the research and innovation process open for stakeholder engagement.</p> <p>Tendency toward one-way forms of communication with stakeholders but open to some interaction.</p> <p>Involving some level of methodological diversity and multidisciplinary practice</p>	<p>Communicating with stakeholders only toward the end of the research and innovation process.</p> <p>Use of one-way communication approaches and defensive in the face of counter-views or stakeholder questions.</p> <p>Mono-methodological and mono-disciplinary</p>

# A Relational Assessment View

- Focused on *relational quality*
  - *relevant connectivity*,
  - *socio-technical robustness*
- Combines relational and dynamic elements taking into account the two categorial components of RRI:
  - *co-responsability (responsiveness)*,
  - *social desirability*.

# A Relational Assessment View (2)

- J. Barrenechea, A. Ibarra, “Operationalizing RRI: Relational Quality Assessment & Management Model for Research and Innovation Networks (REQUANET)” in I.I Ràfols, J. Molas-Gallart, E. Castro-Martínez, R. Woolley, *Proceedings of the 21st International Conference on Science and Technology Indicators*, Valencia, Universitat Politècnica de València, 2016, 971-981.
- A. Eizagirre, H. Rodríguez, A. Ibarra, “Politicizing Responsible Innovation: Responsibility as Inclusive Governance”, *International Journal of Innovation Studies* 2016 (in press).
- H. Rodríguez, A. Eizagirre, A. Ibarra, “Dynamics of responsible innovation constitution in EU research policy: tensions, possibilities and constraints” in R. von Schomberg, *Handbook – Responsible Innovation: A Global Resource*, Edward Elgar Publishing (2016 in press).

Muito obrigado!

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