

Open and Responsible innovation: 'Addressing the Grand Challenges'



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**The views expressed here are those of the author and may not in any circumstances be regarded as stating an official position of the European Commission*

Is Socrates still instructive?

- “Unexamined *Life* is not worth living”
- “Unexamined *Research* is not worth funding” (Frodeman, Mitcham)
- BUT: “which values to address? Aristotelian “Common Good” is no option in 2011



- The defence of human rights and a justice system based on the full **respect of human dignity is a key part of our shared European values**" Jerzy Buzek, European Parliament President (10 October, 2009)



- "**Europe is a community of Values**". Van Rompuy, First European Council President, 19 November 2009

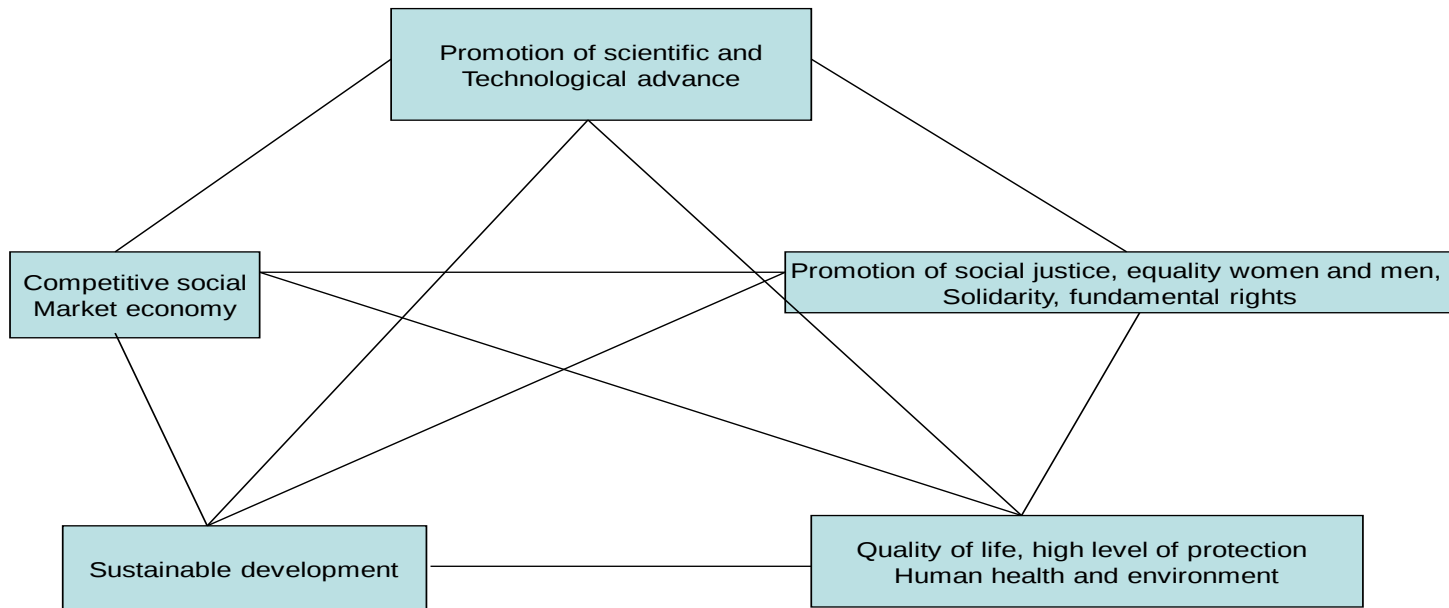


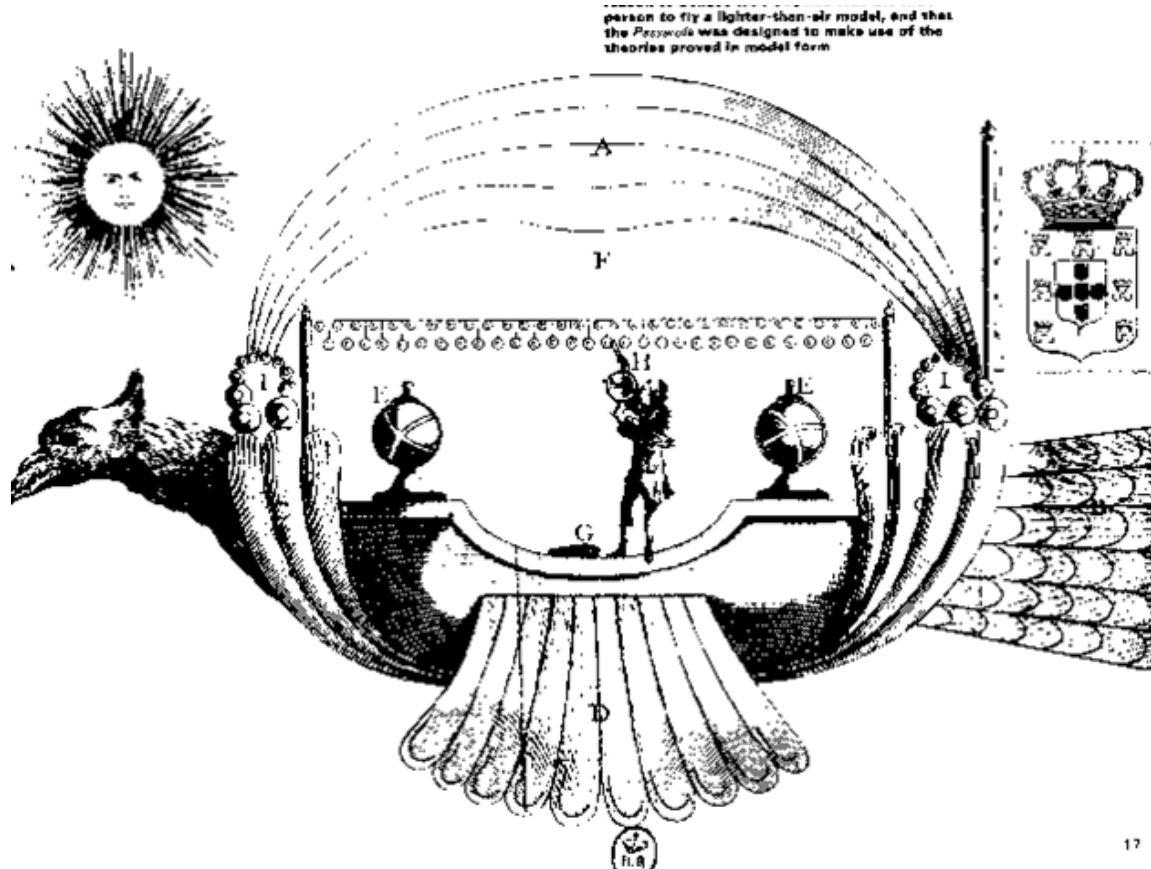
- "**My political guidelines for the Commission's next mandate stress the idea that Europe's actions must be based on its values**". President Barroso, European values in the new global governance, 14 October 2009

Treaty on the EU(art.3)

- The Union shall (...) work for the *sustainable development* of Europe based on balanced economic growth and price stability, *a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment.* It shall promote scientific and technological advance.
- It shall combat social exclusion and discrimination, and shall promote social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the child.
- To promote (..) harmonious, balanced and sustainable development of economic activities, a high level of employment and of social protection, equality between men and women, sustainable and non-inflationary growth, a high degree of competitiveness and convergence of economic performance, a high level of protection and improvement of the quality of the environment, the raising of the standard of living and quality of life, and economic and social cohesion and solidarity among Member States.
- “

Normative anchor points derived from the Treaty on the European Union





***Passarola*- 'Ugly bird'**

"A machine for sailing through the air" 1702

Benefits and Risks of the Passarola

Benefits: 'Manage 200 leagues a day'
'Bring far away countries news and orders'
'The furthestmost regions will be discovered, to the Portuguese nation's benefit'

Risks: 'many crimes will be committed, as (...) to easily flee from one country to another'

Recommendation to the king: "its use will have to be limited"

Technical inventions vs. innovation

Responsible control/use

- Responsible governor-central control agent
- Restricted use
- Benefit for the state
- Moral constraint of governor

Responsible marketing

- "Loss of control agent"
- Democratization of use/privatization of production
- Market-competition for 'benefit of all'-market-success
- Market hurdles

Innovation vs. RRI

Innovation

- State responsibility for risks
- Macro-economic assessment: 'infinite growth'
- steer less, inherently good
- 'the faster, the better'
- Technology-oriented R&D

RRI

- State responsibility for positive outcomes of R&I
- Economic and societal impact of 'knowledge': 'sustained growth'
- responsive to basic needs, reflect basic values
- Innovation is 'managed'
- Issue-oriented R&I

Defining RRI

Responsible Research and Innovation is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its (marketable) outcomes and impacts

FEATURES OF RESPONSIBLE RESEARCH AND INNOVATION

Product dimension: addressing normative anchor points

Process dimension: deliberative democracy

Institutionalization of Technology Assessment and Foresight

Use of Code of Conducts

Application of the precautionary principle; on-going risk assessment; on-going monitoring

Ensuring market accountability: Use of Standards, Certification schemes, Labels

Use of demonstration projects: from risk to innovation governance

Ethics as a design principle for technology

Normative models for governance

Ongoing Public debate: Moderating "Policy Pull and Technology Push"

Science and(vs) Innovation

Collaboration and Competition

- *"Good Science anywhere is good for Science everywhere":*

Credible Science:

- scientific integrity
- open access

Responsible Science:

- foresight on impacts and outcomes

New institutions/extending :

Global Research Council(?)-

Extending ERC in GRC?

New mandate for UNESCO?

Competition and "collaborative competition"

- *Good innovation anywhere, might be beneficial for many, anywhere"*

Enabling Innovation:

- agreement on standards
- IPR but also open innovation

Responsible Innovation:

Joint tackling of Grand

Challenges-"right outcomes"

International agreement on codes of conduct/ethical standards/

"Mutual responsiveness"

Frugal Innovation(Mashelkar):

More(performance),Less(cost),More(people)

- INCOME Inequality: 1000:1
- Access Inequality: 1:1



Frugal Innovation: 28 Dollar Foot



Frugal innovation India

Product	From	TO
Tablet	700 \$	35 \$
Psoriasis Treatment	20.000\$	100\$
Hepatitis B vaccine	18 \$	0.4
Cataract Surgery	3000	30 \$
Artificial Foot	12.000	28 \$

<i>Process dimension</i>	Pro duc t dim ensi on	Technology Assessment and Foresight	Application of the Precautionary Principle	Normative/eth ical principles to design technology	Innovation governance and stakeholder involvement	Public engagement
<i>Technology Assessment and Foresight</i>		X	Development of Procedures to cope with risks	Which design objectives to choose?	Stakeholder involvement in Foresight and TA	How to engage the public?
<i>Application of the Precautionary Principle</i>		Identification of nature of risks	X	Choice and development of standards	Defining proportionality: how much precaution?	How safe is safe enough?
<i>Normative/ethi cal principles to design technology</i>		“privacy” and “safety” by design	Setting of risk/ uncertainty thresholds	X	Which principles to choose?	Which technologies for which social desirable goals?
<i>Innovation governance models and stakeholder involvement</i>		Defining scope and methodology for TA/Foresight by stakeholders	Defining the precautionary approaches by stakeholders	Translating normative principles in technological design	X	How can innovation be geared towards social desirable objective
<i>Public Engagement and Public Debate</i>		Defining/choic e of methodology for public engagement	Setting of acceptability standards	Setting of social desirability of RRI outcome	Stakeholders roles in achieving social desirable outcomes	X

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On Implementing RRI: leave your comments please

Thanks for your attention!