

Débat public sur les nouvelles technologies : quelques évolutions récentes

Alexei Grinbaum

Philosophy of Science Lab (LARSIM),
French Alternative Energies and Atomic
Energy Commission (CEA), Saclay

The Economist

DECEMBER 19TH 2009 - JANUARY 1ST 2010 Economist.com

Turmoil at British Airways

Greece on the edge

Wall Street v London v Shanghai

China's control freaks

Being foreign | The perfect violin | Going to America | The Harry Potter economy

Amur river, graveyard of hopes | The meaning of rice in Japan | Art of abandonment in Detroit

Gordon Rex, a tragedy | Hedonism and claret | Russia and the Holy Land | Politeness | The joy of dirt

Socrates today | Newspapers under threat | The hardest language | Farewell WW1 | Plus...

Progress and its perils



Monsieur Philippe DESLANDES
Président de la Commission Nationale
Du Débat Public
6 rue du Général CAMOU
75007 PARIS

Paris, le 23 février 2009

Monsieur le Président,

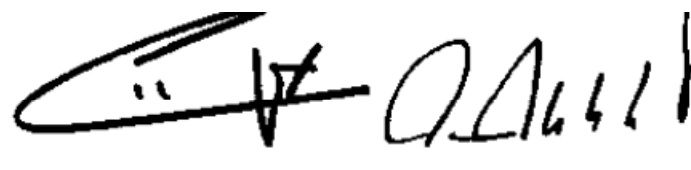
En application des engagements du Grenelle de l'environnement, le Gouvernement souhaite organiser un débat large et transparent sur les risques et conditions de développement des nanotechnologies.



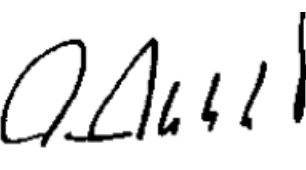
Jean-Louis BORLOO



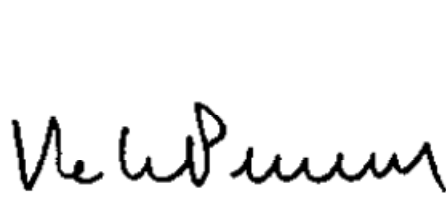
Christine LAGARDE



Brice HORTEFEUX



Michel BARNIER



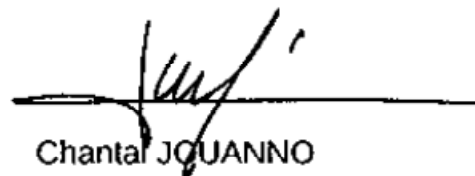
Valérie PÉCRESSE



Hervé MORIN



Roselyne BACHELOT-NARQUIN



Chantal JOUANNO



Plan of the French public debate

VILLE	DATE PROJETEE	SUJETS TECHNIQUES POSSIBLES Compte tenu des activités locales	THEMES GENERAUX POSSIBLES
Strasbourg	15 OCTOBRE	Matériaux nanostructurés	Gouvernance européenne
Toulouse	20 OCTOBRE	Transports / Matériaux / Santé-pharmacie	Cycle de vie des produits nanostructurés et protection de l'environnement
Orléans	27 OCTOBRE	Pharma-cosmétologie / énergie	Nanotechnologies et protection des consommateurs
Bordeaux	3 NOVEMBRE	Nanotubes de carbone et applications / Santé	Process industriels/ Nanotechnologies et protection des travailleurs
Clermont-ferrand	10 NOVEMBRE	Pneumatiques / Automobile	Nanoparticules et pollution atmosphérique
Lille	17 NOVEMBRE	Textile / RFID	Nanotechnologies et textile
Besançon	24 NOVEMBRE	Micro-techniques	Nanotechnologies et compétitivité
Grenoble	1 ^{ER} DECEMBRE	Informatique / Energie / Climatec	Informatique et libertés individuelles Nano-médecine
Caen	8 DECEMBRE	Nano-electronique / Nano-poudres	Matériaux de construction et applications multi-usages
Metz	15 DECEMBRE	Telecoms / Fibre	Habitat et énergie
Rennes	5 JANVIER	Agro-alimentaire / Matériaux nanostructurés	Nanotechnologie et Sécurité alimentaire
Lyon	12 JANVIER	Applications médicales / Optronique	Nanoparticules dans l'organisme. Etudes sur la toxicité
Marseille	19 JANVIER	Optique / Photonique / SCS	Sécurité intérieure et défense nationale
Orsay	26 JANVIER	Nano-electronique / Biotechnologies	Recherche et développement industriel. Convergence nanotechnologies biotechnologies informatique sciences cognitives
Montpellier	9 FEVRIER	Eau / Alimentaire / Santé	Protection de l'environnement. Développement durable Nord-Sud.
Nantes	16 FEVRIER	Nano-poudres/ aéronautique	Nouveaux matériaux pour les biens d'équipement
Paris	23 FEVRIER		Ethique et Gouvernance

NANO MONDE = MAXI CONTROLE! *no NANO*



Aujourd'hui le nanomonde

Le site du débat public sur les nanotechnologies

[Les Nanotechnologies](#) | [Le débat public et la CNDP](#) | [Actualité](#) | [Agenda](#)

Le nanomonde, c'est maintenant qu'il faut le combattre

www.nanomonde.org

Clinatec : Circulez, y a rien à penser



Le pire de la démocratie participative

sur le fond, il tentera juste de balayer ses détracteurs par la rhétorique : « Je peux répondre que vous êtes totalement dans l'erreur (applaudissements nourris). Si ça vous fait plaisir de penser que ma main droite ignore ce que fait ma main gauche, grand bien vous fasse. Si ça vous fait plaisir de penser que j'ai pour objectif de participer à l'avènement d'une société de la contrainte, grand bien vous fasse ». Un cri dans la salle : « L'enfer est pavé de bonnes intentions ».

Innovation scientifreak : la biologie de synthèse

lundi 12 novembre 2012 par Frédéric Gaillard

Geneviève Fioraso, aujourd'hui ministre de l'Enseignement supérieur et de la recherche, a rendu en février 2012 un long, lourd et filandreur « *les enjeux de la biologie de synthèse* ». Frédéric Gaillard, l'un de nos méritants lecteurs, nous rend ici son rapport sur le rapport. C'est quand c'est clair, bref et direct.

Voici donc la plus récente création des laboratoires de l'horreur : la monstruosité verbale – biologie de synthèse – répond à la monstruosité de cette innovation.

Le *bios*, le vivant, c'est ce qui naît – d'où le mot de nature –, et non ce qu'on fabrique, artefacts, artifices, parce que faits de l'art. Ce qui ne vit pas, mais fonctionne.

TOUJOURS PIRE !

Alerte à

LA BIOLOGIE DE SYNTHÈSE

& aux *aliens* de demain





France: debatpublic-nano.org



cndp
Commission particulière
du débat public
Nanotechnologies

→ Réunions

16/01/2010 ORSAY - Recherche et développement industriel / Convergence nanotechnologies	09/02/2010 MONTPELLIER - Protection de l'environnement - Développement durable Nord/Sud - 19 h 30 -	16/02/2010 NANTES - Nouveaux ma- triers - les biens d'équipement - Université de Nantes - A
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Actualités sur le débat
Le programme de la réunion publique de
Marseille est en ligne.
Consultez-le ! [Lire la suite >](#)

Rennes : les vidéos sont en ligne
Regardez l'intégralité de la réunion publique en
vidéo [Lire la suite >](#)

La réunion de Lyon en vidéo
Visionnez les premières images de la dernière
réunion publique [Lire la suite >](#)

Derniers documents
> Contribution d'Isabelle Roussel, Vice-Présidente
de l'APPA

> Contribution Dr M Vincent Service de pneumologie
et laboratoire de minéralopathologie Centre
Hospitalier St Joseph et St Luc Bron

>> [Liste complète des documents](#)

S'informer sur le débat

Faire participer vos amis au débat public

DÉBAT PUBLIC
nano
technologies
JE M'INFORME, JE M'EXPRIME

**Marseille : participez au
débat sur internet**
Nanotechnologies, sécurité intérieure et défense nationale sera le thème de la réunion du 19 janvier à 19h30 et qui sera intégralement retransmise en vidéo sur le site.
Posez vos questions

DEBAT PUBLIC Le débat > CNDP et CPDP > Le cadre législatif > Relations avec les acteurs > Le débat dans l'actualité >	S'INFORMER Documents du débat > Déroulement des réunions > Rapports et études >	PARTICIPER Réunions publiques > Poser une question > Base de connaissance > Donner votre avis > Rédiger une contribution > Proposer un cahier d'acteurs >
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Netherlands: Nanopodium.nl

Nanopodium Maatschappelijke dialoog over nanotechnologie

[Home](#) | [Contact](#) | [English](#)

[WAT IS NANOTECHNOLOGIE?](#) [OVER NANOPODIUM](#) [PROJECTEN](#) [NANOVISIES](#) [NANONIEUWS](#) [AGENDA](#) [PARTICIPEER](#)

“De discussie over nanotechnologie gaat niet zozeer over nano, als wel over de vraag hoe we als samenleving moeten omgaan met nieuwe technologie. Die vraag is misschien wel zo oud als de mensheid.”

- Cees Dekker, universiteitshoogleraar TU Delft

[> Lees deze nanovisie](#)

Amiovert 200M

1 2 3 4

Nanopodium

Commissie Maatschappelijke Dialoog Nanotechnologie

Verantwoord verder met nanotechnologie

Bevindingen maart 2009 – januari 2011



27 januari 2011

UK: nano and me

cea



Rahmen der FachDialoge 2011/2012

Die FachDialoge werden jeweils an zwei aufeinanderfolgenden Tagen in den Räumen des BMU in Berlin stattfinden. Zu jeder Veranstaltung werden ca. 20 Vertreter und Vertreterinnen der Stakeholdergruppen sowie aus Ressorts und Behörden eingeladen. Das BMU wird zu den Themen Berichte publizieren, in denen die Ergebnisse der FachDialoge wiedergegeben werden. Der Schwerpunkt der FachDialoge soll auf der gesellschaftspolitischen Einordnung der jeweiligen Themenstellungen liegen.

Themen und Termine der FachDialoge

Die folgende Tabelle zeigt die vier FachDialoge und ihre geplanten Termine.

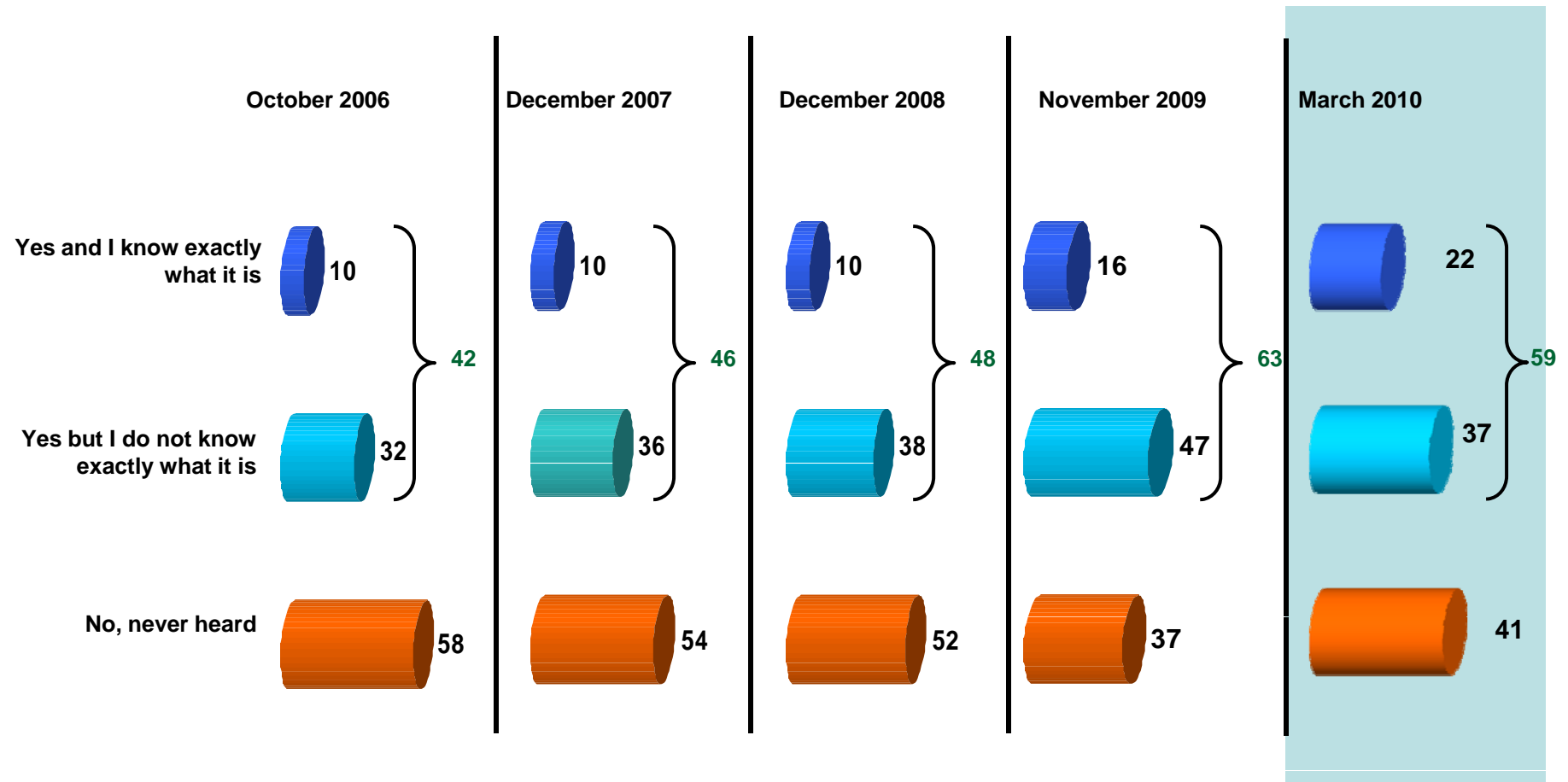
Fachdialog	Thema	Termin
FD 1	"Risikomanagement in der Nanowelt"	01.12. - 02.12.2011
FD 2	"Rückverfolgbarkeit von Nanomaterialien"	21.02. - 22.02.2012
FD 3	"Nachhaltigkeit von Nanotechnologien - green nano"	12.06. - 13.06.2012
FD 4	"Potenziale der Forschung als Standortfaktor"	16.10. - 17.10.2012

Source: *Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit*



Question : Have you heard about nanosciences and nanotechnologies ?

Source: IPSOS « Les Français et les nanotechnologies », mars 2010. Sondage de 1013 personnes, constituant un échantillon national représentatif de la population française âgée de 15 ans et plus.





Nanotechnologies from the consumers' point of view

What consumers know and what they would like to know

March 2012

Even though the knowledge about all fields of application has decreased, particularly striking is the decline in the fields of surface coatings, construction materials and environmental engineering. In sum, it can be hypothesised that consumer communication on the part of product manufacturers has decreased considerably, or that the information does not reach the target group to the same extent. The public knowledge on nanotechnologies has become more abstract.



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Public Health FOPH

• , ; • • STIFTUNG
• RISIKO-DIALOG
ST.GALLEN

European reports on ethical questions of nano



Understanding Public Debate on Nanotechnologies

Options for Framing Public Policy

Edited by René von Schomberg and Sarah Davies⁽¹⁾

A Report from the European Commission Services



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Scientific and Technological Trends

Economic Data

Societal Issues

- Responsibility/codes of conduct
- Nanobiomedical ethics
- Privacy and security
- Communicating nanoethics
- Ethics Toolkit**
- Ethics and ELSA literature
- Nanoethics and ELSA experts
- Links to relevant projects

Societal Issues **Ethics Toolkit**

REPORT ETHICS TOOLKIT

1.5 Toolkit for ethical reflection and communication

This Toolkit offers a structured approach and conceptual tools for a reflection on ethical questions concerning nanosciences and nanotechnologies.

Document details:

Vits: 892, Published on: April, 21st 2009, 11:28 AM GMT

Other documents in this catalogue entry

Showing 0-1 of 1 results

[Toolkit for ethical reflection and communication](#)
This Toolkit offers a structured approach and conceptual tools concerning nanosciences and...

Report chapters

1.5 Toolkit for ethical reflection and communication

We need to open up the politics of responsible development

Nanotechnology is currently a focus for much excitement and anxiety, and the notion of 'responsible development', with its emphasis on safe and beneficial innovation, lies at the heart of current thinking on its governance. But what does responsible development mean in practice? And how can the development of new technologies be infused with the values of democracy and public participation? This report argues that, if responsible development is to succeed in opening up public debate on nanotechnology, it needs to be substantially rethought.

Nobody knows... we are all in it together
This is a new focus of attention

WEBS
deliberate...

COMMUNIQUE & DIALOGUE

IT BEGINS HERE

SCIENTISTS ALSO FEEL POWERLESS

COLLECTIVE RESPONSIBILITY

RECONFIGURING RESPONSIBILITY
Deepening Debate on Nanotechnology

Logos: CEA, Durham University, Technische Universiteit Eindhoven, University of Twente

FRAMING NANO
Governance in Nanosciences and Nanotechnology

FramingNano Project:
A multistakeholder dialogue platform framing the responsible development of Nanosciences & Nanotechnologies

THE FRAMINGNANO GOVERNANCE PLATFORM
A NEW INTEGRATED APPROACH TO THE RESPONSIBLE DEVELOPMENT OF NANOTECHNOLOGIES

FINAL REPORT
February 2010

PROJECT COORDINATOR

Logos: European Commission, ECN, ELSA, ELSA, ELSA, ELSA

NANO CODE

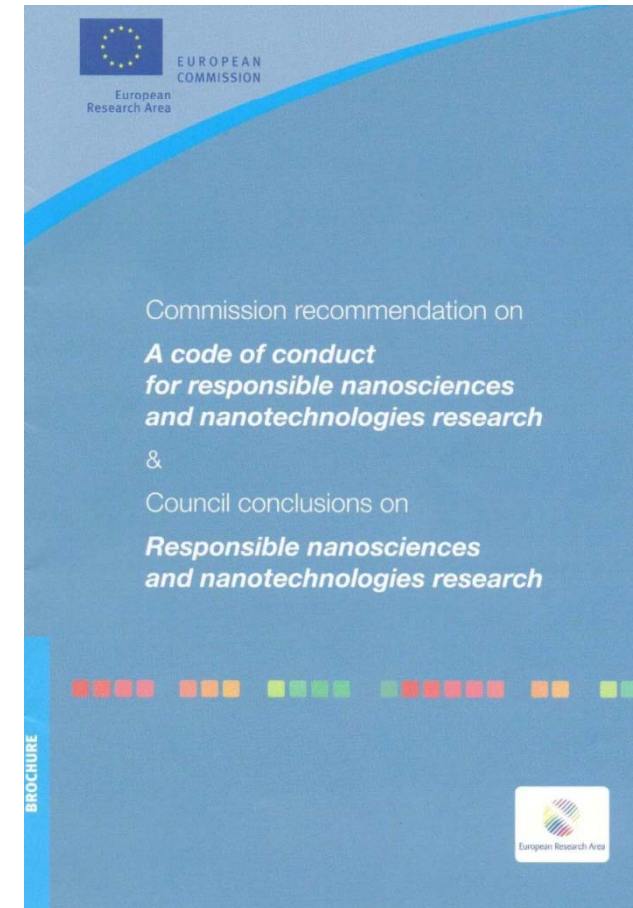
COMMISSION RECOMMENDATION
of 07/02/2008
on a code of conduct for responsible nanosciences and nanotechnologies research

Deontological ethics



Commission Recommendation on a Code of Conduct for Responsible N&N research

- 7 general principles and 27 guidelines
- Instrument for Member States, companies, funders, research institutions, all researchers, and civil society organisations for initiatives and strategies on responsible nano research



European code of conduct



MasterPlan

Issues and Options on the Path Forward
With the European Commission Code of Conduct on
Responsible N&N Research



3.7 Accountability

Researchers and research organisations should remain accountable for the social, environmental and human health impacts that their N&N research may impose on present and future generations.

13. The explicit attribution of accountability to N&N researchers for potential impacts of their research on future generations seems unacceptable. The EU-CoC should be more specific so that it is clear *who needs to do what* to be “accountable”. Scientists remain accountable for adopting good scientific practice, but not for what is done with their work by others in the future.
14. It is crucial to recognize that criticism about the understanding of the “Accountability” principle has contributed to an overall rejection of the EU-CoC among a considerable number of N&N stakeholders. Fundamental revision and/or clarification of this principle is therefore pivotal to the success of the revision and further implementation of the EU-CoC. The objecting stakeholders should be included in the revision and reformulation of this principle. Particular care is needed in the translation of the term in the various languages.



As seen by the European Commission

Area 5.1.2.1 Broader engagement on science related questions

SiS.2012.1.2.1-1: International Coordination in the field of Responsible Research and Innovation (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 on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (in order to allow a proper embedding of scientific and technological advances in our society)

**Table 1 - Process dimension:
values, tools and methods for RRI (examples)**

R&I (voluntary) initiatives

- Codes of conduct.
- Standards, certification/accreditation schemes, labels.
- (Precautionary) risk management systems
- Corporate social responsibility.
- Novel inclusive/participatory processes to conduct R&I.
- Ethics and safety by design.

R&I policies

- Funding of novel research programs on RRI (both social and natural science).
- Regulation oversight.
- Ethical reviews (e.g. biomedical field).
- Technology assessment/foresight tools including evaluation of ethical, societal impacts.
- Participatory processes, stakeholders and public (“upstream”) engagement for policy priority setting.
- Ethical, social, safety observatories.
- Supporting ethical reflection in education.
- Supporting of open access to scientific information.



*Options for
Strengthening*

Responsible Research and Innovation

Research and
Innovation

6	Outlining policy monitoring and evaluation.....	51
7	Annex I – <u>Definition of RRI</u>	55
8	Annex II – Examples of contested innovations.....	59
8.1	Smart energy meters and privacy.....	59
8.2	CCS and safety concerns.....	60
8.3	Patient cards in the netherlands and concerns of privacy.....	63



Consequentialism

Consequentialism is an ethical doctrine based on the obligation to act in ways that produce the best consequences.

Consider available options, predict which one will likely lead to the best outcome and then choose a preference. For this, specify weights (costs and benefits) of relevant consequences and use a utility function.

Precautionary Principle

“The absence of certainties, given the current state of scientific and technological knowledge, must not delay the adoption of effective and proportionate preventive measures aimed at forestalling a risk of grave and irreversible damage to the environment at an economically acceptable cost.”

EU Maastricht Treaty



Responsible innovation

- ❖ Individual vs collective responsibility
 - ❖ Liability (legal) vs accountability (moral)
 - ❖ Responsibility and vulnerability
 - ❖ ‘Role responsibility’ and its limits
 - ❖ ‘Responsible for being responsible’
 - ❖ Taking responsibility vs being held responsible
- ✓ “Parental” individual responsibility
 - ✓ Political collective responsibility
 - ✓ Passion beyond prudence
 - ✓ Teaching ethical complexity through narratives

A. Grinbaum and C. Groves, “What is ‘responsible’ about responsible innovation? Understanding the Ethical Issues”,

In: **Responsible Innovation: Managing the Responsible Emergence of Science and Innovation in Society**, Wiley, 2013, pp. 119-142.



The return of collective responsibility

“O opportunity, thy guilt is great”

Shakespeare, *The Rape of Lucrece*

- Jaspers: collective guilt
- Arendt: collective responsibility

- 1) A person is held responsible for something she has not done.
- 2) The reason for her responsibility is her membership in a group which no voluntary act of hers can dissolve.

Collective responsibility is a political phenomenon.



Toolkit for ethical reflection and communication



observatoryNano:

European observatory for science-based and economic expert analysis of nanotechnologies

Work package 4: Ethical and societal impacts

TOOLKIT FOR ETHICAL REFLECTION AND COMMUNICATION

(DELIVERABLES D4.4.1 AND D4.4.2)

CEA-LARSIM

1. Introduction
2. Classifying ethical and societal issues
3. Thinking with the help of ethical concepts
4. Responsible communication
5. Narratives of nanotech
6. Glossary

75 pages, can be downloaded from www.observatorynano.eu



2. Classifying ethical and societal issues

1. Nanobiotechnology
2. Nanomedicine
3. Food and cosmetics nanotechnology
4. Information and communication technology
5. Nanotechnology in the military: questions of dual use
6. Questions relative to risk and uncertainty
7. Questions relative to public communication on nanotechnology
8. Questions relative to visions and fictions
9. Questions of social justice
10. Questions of responsibility
11. Questions of epistemology



5. Narratives of nanotech

Introduction: What is a myth? Why does it matter for science?

- I. Prometheus
- II. The Golem of Jeremiah
- III. Frankenstein
- IV. A positive Prometheus?
- V. Pandora's box
- VI. Daedalus
- VII. The Matrix



5. Narratives of nanotech

- I. Prometheus
- II. The Golem of Jeremiah
- III. Frankenstein
- IV. A positive Prometheus?
- V. Pandora's box
- VI. Daedalus
- VII. The Matrix

Ambivalence of technology

Technology and politics

Technology and hubris

5. Narratives of nanotech

- I. Prometheus
- II. The Golem of Jeremiah
- III. Frankenstein
- IV. A positive Prometheus?
- V. Pandora's box
- VI. Daedalus
- VII. The Matrix



Jan Cossiers, *Prometheus Carrying Fire*, 1637 (Madrid)

Prometheus becomes the hero of the American engineer



Paul Manship, *Prometheus, Teacher in Every Art*, 1934 (Rockefeller Centre)

5. Narratives of nanotech

- I. Prometheus
- II. The Golem of Jeremiah
- III. **Frankenstein**
- IV. A positive Prometheus?
- V. Pandora's box
- VI. Daedalus
- VII. The Matrix



Making life from death

Blindness to ethical consequences

Social status of artefacts



5. Narratives of nanotech

- I. Prometheus
- II. The Golem of Jeremiah
- III. Frankenstein
- IV. A positive Prometheus?
- V. Pandora's box
- VI. Daedalus
- VII. The Matrix

Technology and desire



5. Narratives of nanotech

- I. Prometheus
- II. The Golem of Jeremiah
- III. Frankenstein
- IV. A positive Prometheus?
- V. Pandora's box
- VI. **Daedalus**
- VII. The Matrix

Science, tinkering and rationality

Technology and values

The scientist and other humans

5. Narratives of nanotech

- I. Prometheus
- II. The Golem of Jeremiah
- III. Frankenstein
- IV. A positive Prometheus?
- V. Pandora's box
- VI. Daedalus
- VII. The Matrix

Knowing is making

Intermediate status of technical objects



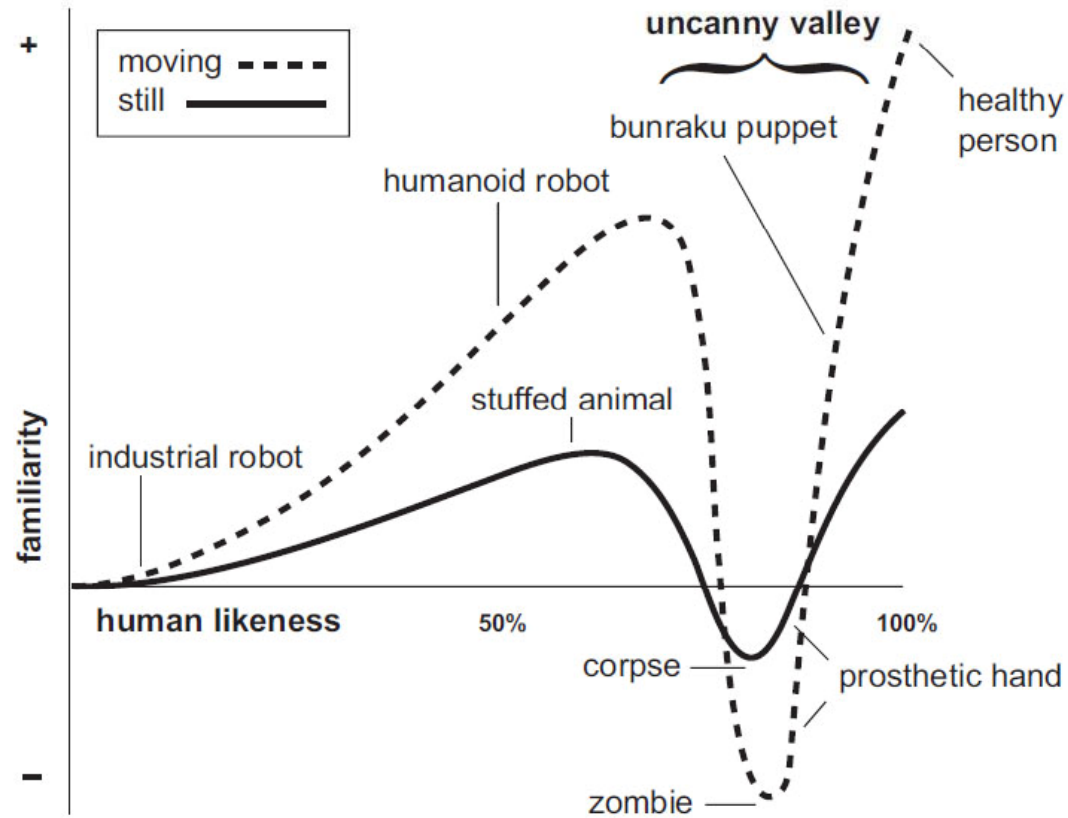
Nanoethics (2010) 4:191–198
DOI 10.1007/s11569-010-0103-x

ORIGINAL PAPER

The nanotechnological golem

Alexei Grinbaum

Uncanny valley





Uncanny valley explained by Girard's theory

