The ethics of radiological risk governance –
The justice of justification as a central concern

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content

Dealing with risk: between knowledge and fairness
What is an acceptable risk?

Topical socio-economic reports / expert viewpoints
[…]
"Risk governance:
What is an acceptable level of (nuclear) risk for the public at large?"

my answer:

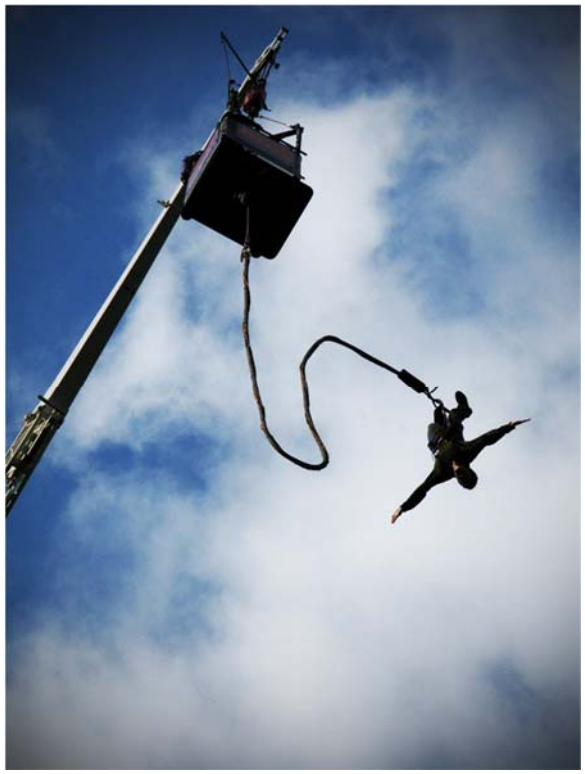
There exists no objective (scientific, economic, social, political or philosophical) rationale for the determination of the acceptable level of nuclear risk for the public at large.

An acceptable nuclear risk is simply a risk that an informed democratic society justifies as acceptable.

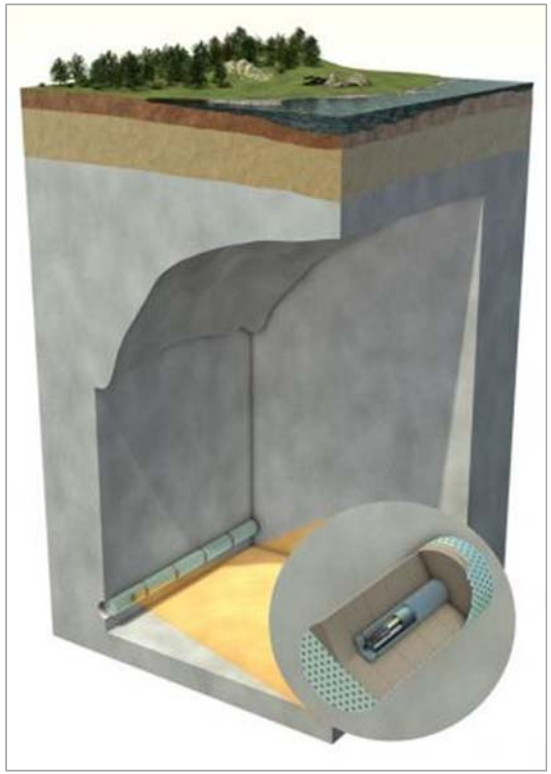
http://www.eesc.europa.eu/?i=portal.en.events-and-activities-symposium-on-nuclear-fission-papers

Dealing with risk: between knowledge and fairness
The fairness of self-determination

do we need fairness as a principle for self-determination?



do we need self-determination as a principle of fairness?



Dealing with risk: between knowledge and fairness

The assessment of what is an acceptable risk for society is a matter of justice

- A risk is not a mathematical formula; it is a potential harm that
  - you cannot completely know and
  - you cannot fully control.

- Acceptable risk?
  People will accept a risk they cannot completely know and that they cannot fully control simply when they **trust** that its justification is **marked by fairness**.

Fairness ‘the right to be responsible’

risk taken by society	the right to co-decide	from a joint decision follows
	↑	↓
	the right to be responsible	**the right to be protected**
risk taken by an individual	↓	
	the freedom to hurt yourself	

- For a collective risk, ‘the right to be responsible’ = ‘the right to co-decide’

  Enabling this right is a principle of justice.

Dealing with risk: between knowledge and fairness
The idea of fair and effective risk governance

- No scientific, societal, cultural or political authority can determine alone what would be an acceptable risk.

- Good science and engineering, open and transparent communication and the 'promises' of a responsible safety and security culture are necessary conditions but can never generate societal trust in themselves.

  The reason is that there will always be essential factors beyond full control: nature, time, human error, misuse of technology.

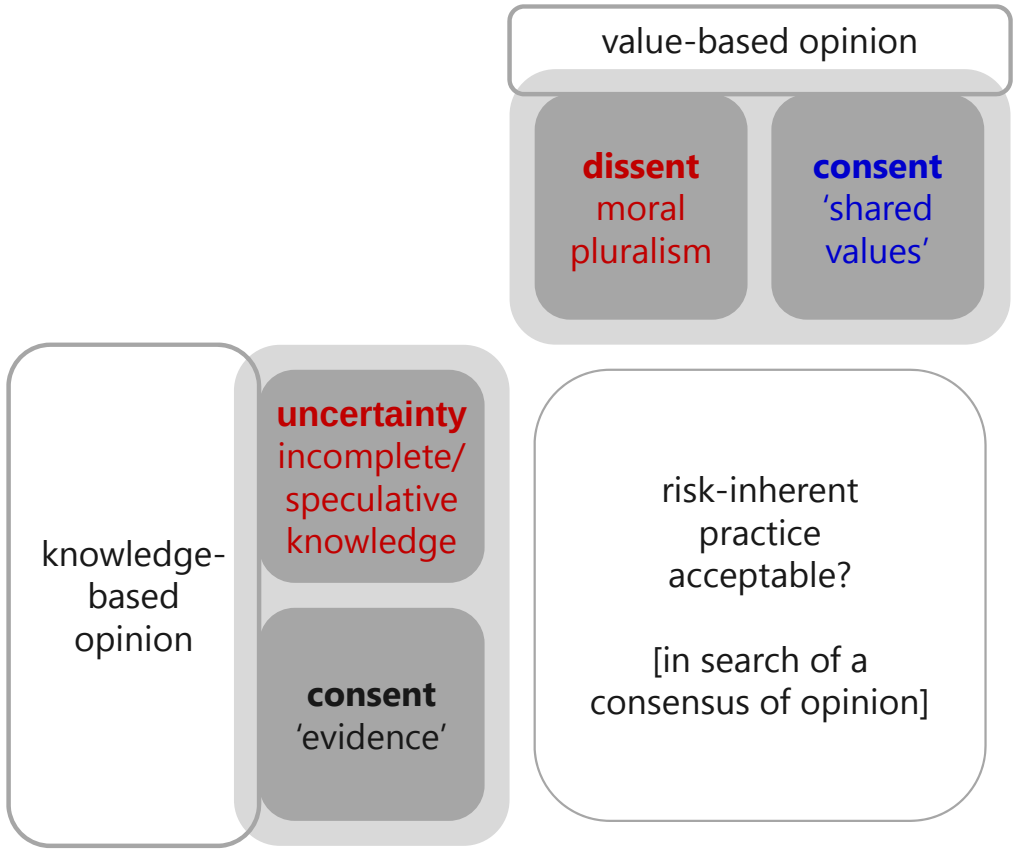
  Which implies that one always has to deal with knowledge-related uncertainty and value pluralism.

↘ Fair risk governance is risk governance **of which the method of knowledge generation and decision making is trusted as fair** by society.

↘ When the method of risk governance is **trusted as fair** by society, that risk governance **has also the potential to be effective**, as the outcome of decision making will be trusted as fair, also with those who would have preferred another outcome.

Dealing with risk: between knowledge and fairness

Key concepts of fair and effective risk governance



incomplete/speculative knowledge

The science of hypotheses, probabilities and foresight.

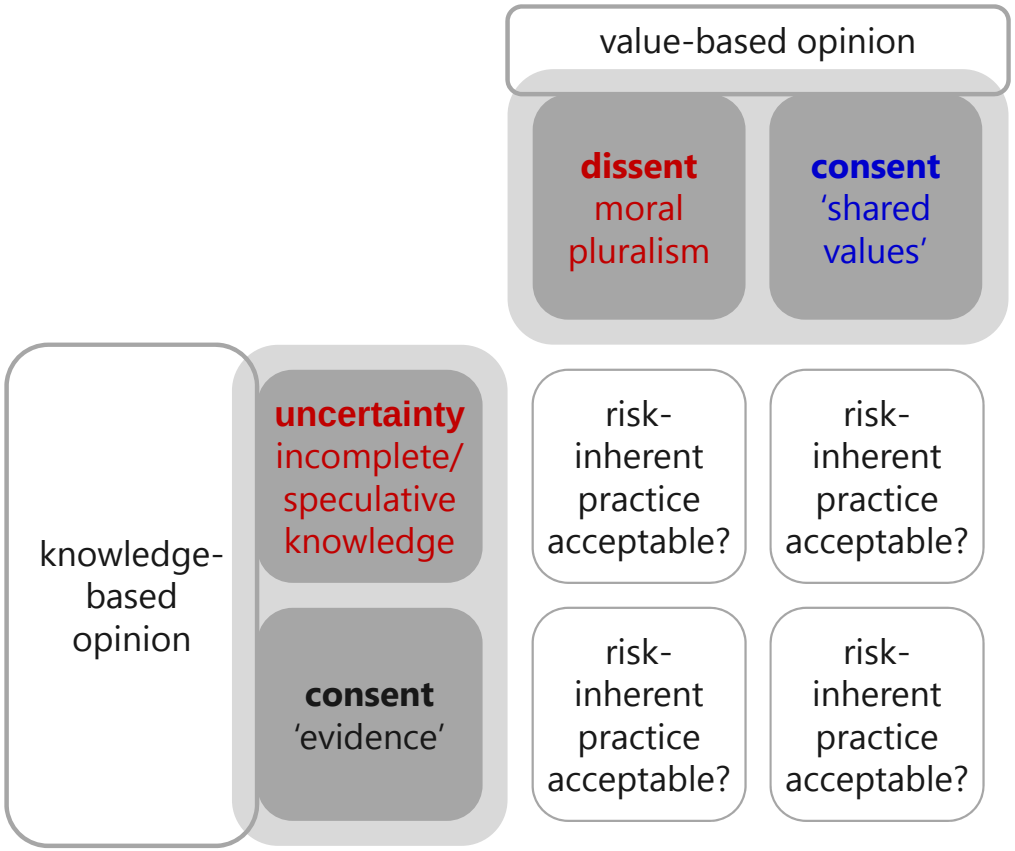
moral pluralism

Even if we would all agree on the scientific knowledge base for the assessment of the risk, opinions would still differ on its acceptability.

Science may thus inform us about the technical and societal aspects of options, it cannot instruct or clarify the choice to make.

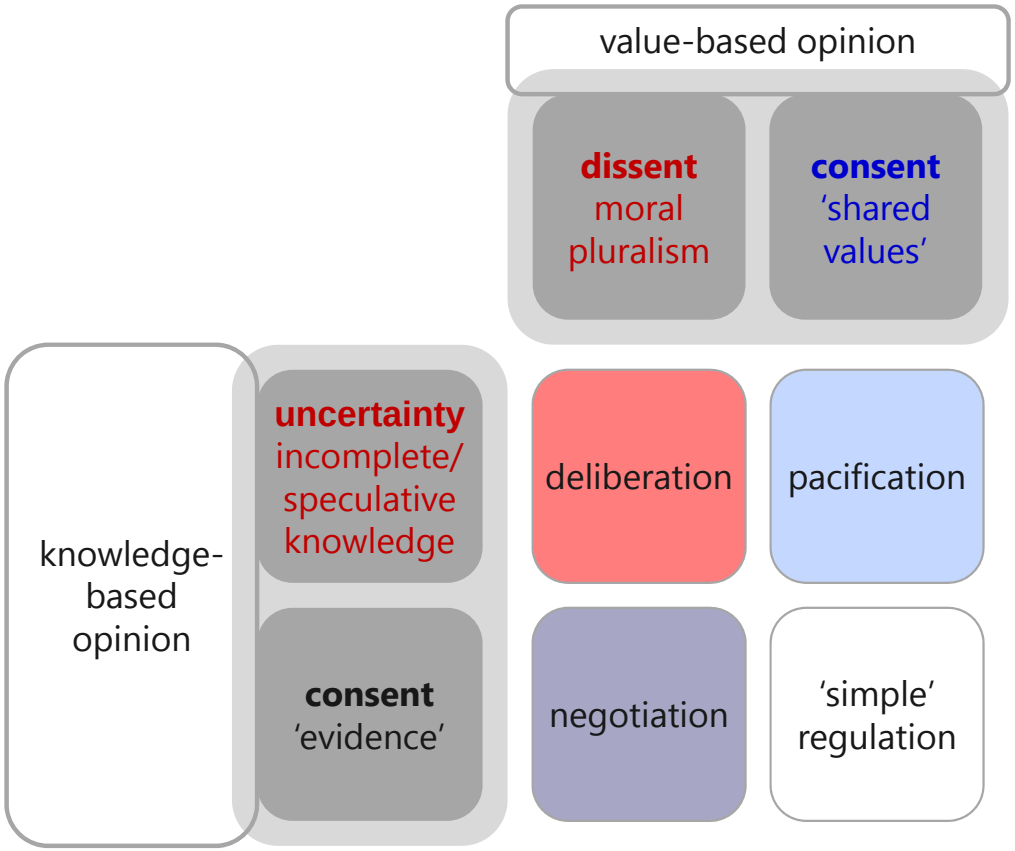
Dealing with risk: between knowledge and fairness

Key concepts of fair and effective risk governance



Dealing with risk: between knowledge and fairness

Key concepts of fair and effective risk governance



Four models of 'governance'
(adapted from
Hisschemöller & Hoppe 1996)

Dealing with risk: between knowledge and fairness

Key concepts of fair and effective risk governance

value-based opinion

dissent moral pluralism

consent 'shared values'

knowledge-based opinion

uncertainty incomplete/ speculative knowledge

consent 'evidence'

'simple' regulation

need for **fairness**:

key governance concepts: precaution & fair play

Dealing with risk: between knowledge and fairness

Key concepts of fair and effective risk governance

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dissent moral pluralism

consent 'shared values'

knowledge-based opinion

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consent 'evidence'

pacification

need for **fairness** in dealing with incomplete & speculative knowledge

key governance concepts:
precaution
informed consent
freedom of choice

Dealing with risk: between knowledge and fairness
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deliberation

need for **fairness** in dealing with incomplete & speculative knowledge and moral pluralism

key governance concepts:
precaution
confrontation of rationales used to defend interests
accountability to next generations

Dealing with risk: between knowledge and fairness

Key concepts of fair and effective risk governance

value-based opinion

dissent moral pluralism

consent 'shared values'

knowledge-based opinion

uncertainty incomplete/ speculative knowledge

consent 'evidence'

deliberation

negotiation

need for **fairness** in dealing with incomplete & speculative knowledge and moral pluralism

key governance concepts:
precaution
confrontation of rationales used to defend interests
accountability to next generations

Dealing with risk: between knowledge and fairness
Intermediate conclusions

- The assessment of what is an acceptable risk for society is a matter of justice.

  Fairness of self-determination : 'the right to be responsible'

- ↘ For a collective risk, 'the right to be responsible' = 'the right to co-decide'.

  Enabling this right is a principle of justice.

- But 'the right to co-decide' is not enough, as dealing with collective risks implies dealing with the 'complexity' of knowledge-related uncertainty and value pluralism.

- ↘ Fair risk governance is therefore risk governance **of which the method of knowledge generation and decision making is trusted as fair** by society.

  ('trust by method instead of proof')

Dealing with risk: between knowledge and fairness
Intermediate conclusions

- What are fair methods of knowledge generation and decision making?

↘ The key governance concepts mentioned before

precaution, fair play, informed consent, freedom of choice,
confrontation of rationales to defend interests,
accountability towards next generations

suggest an **ethics of method** that

first can be formulated in terms of **attitudes** and **interaction modes** in the interest of **a fair dealing with knowledge-related and value-related complexity**,

and subsequently can be translated in **practical governance approaches**.

↘ The attitudes and interaction modes are independent of the application contexts (energy, medical, …) but only get their practical meaning in these concrete application contexts.

Ethical attitudes and interaction modes for a fair dealing with complexity

The preparedness to recognise complexity

- Recognising fair risk governance as a fair dealing with knowledge-related and value-related complexity is only possible if one is prepared to 'look beyond' the own interests, hopes, concerns and beliefs.

- ↘ Recognising knowledge-related and value-related complexity results in recognising that there are no privileged positions to make sense of that complexity.

Ethical attitudes and interaction modes for a fair dealing with complexity
Demarcating meaningful application contexts

- Making sense of fair and effective risk governance in practice (in applied research and policy) can only be done in 'thematic application contexts' of concrete technological applications (energy, medical, chemicals in food, mobile phones…).

↘ pragmatic motivation

Only in this way, the attitudes and interaction modes inspired by the ethics of method can get a practical meaning for research and policy.

↘ ethical motivation

Comparing risks among different application contexts (e.g. nuclear energy versus mobile phones) is meaningless and misleading.

A neutral application context also enables making a meaningful relation of the **ethics of adverse effects** of applying risk-inherent technologies with the **ethics of their justification**.

Ethical attitudes and interaction modes for a fair dealing with complexity

Demarcating meaningful application contexts / example: energy

'pragmatic' foundation principles for energy governance are technology independent

→ minimising impact on health and the environment for this and next generations, through optimising energy consumption & a 'deliberate' use of technologies for production

→ a geopolitics of cooperation among regions & nation states (instead of competition) ('principle of the commons')

→ affordable access to energy for all, taking into account local contexts and needs ('principle of equality')

→ transparency of energy markets, enforced by regulation (to check whether they are socially responsible)

the character of the energy technologies complicates deliberation on their use and therefore indirectly all other principles

technology assessment:

capacities availability
flexibility
efficiency
reasonable cost

risk potential harm to human and environment health

potential misuse

The foundation principles for energy governance are technology independent, but **provide a framework for deliberation** on energy technology options.

Ethical attitudes and interaction modes for a fair dealing with complexity
Mutual agreement as the goal

- In complex justification cases such as that of considering nuclear technology applications, a risk cannot be justified through one-directional 'convincing explanation', but only through **mutual agreement** among concerned actors.

Ethical attitudes and interaction modes for a fair dealing with complexity
Intellectual solidarity as a joint responsibility

elements ↘ **recognising limits to rationales**

- the limits of scientific rationales to provide evidence
- the relativeness of political rationales to defend interests
- the unability of economic rationales to formulate their own ethics

↘ open and transparent communication

↘ seeking **raprochement** and **intellectual confrontation**

'open and transparent communication' can still be detached and strategic

What will really make a difference is the organisation of rapprochement in the form of an intellectual confrontation of the rationales actors use to defend our interests.

↘ fostering **intellectual emancipation**

↘ **deliberate resignation** as part of the accountability towards the future

Ethical attitudes and interaction modes for a fair dealing with complexity
Intellectual solidarity concerns us all

- As scientist, manager, politician, entrepreneur, medical doctor, consultant, activist or citizen, **we are all moral agents** when we reason about complex issues such as the applications of nuclear technology.
- Moral reasoning requires the development of specific 'skills'

→ reflexivity: awareness of **context** (social, political, historical)
awareness of **the own position** (awareness of why you know what you know and why you value what you value)

→ insight: **analysing and understanding**
- complexity, uncertainty, value reference, consent, dissent
- the societal implications of risk justification for specific applications
- the possibilities and limitations of science

→ curiosity: crossing borders between 'disciplines'
leaving the comfort zone: developing a critical sense & an open mind

→ these skills / competences' **are not 'additional' but are needed to support** traditional scientific and managerial skills / competences.

An enriched ethical understanding of the idea of deliberative democracy
Deliberative democracy as an advanced capacity to deal with complexity

- Traditional (academic) understandings of deliberative democracy start from the idea that 'legitimate democracy issues from the public deliberation of citizens'.

  (Bohman, James and Regh, William. 1997. Deliberative Democracy – Essays on Reason and Politics. The MIT Press.)

  ↘ 'democratic participation', 'rational self-government'

  ↘ an alternative to the idea of democracy as organised political conflict

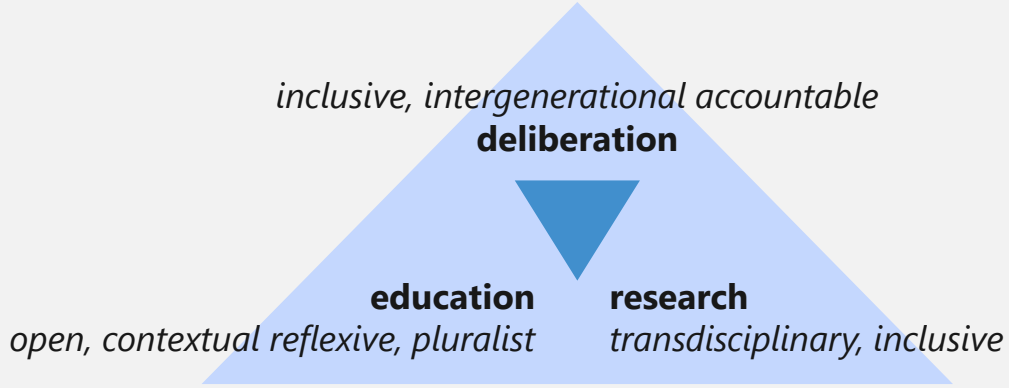
An enriched ethical understanding of the idea of deliberative democracy
Deliberative democracy as an advanced capacity to deal with complexity

alternative ■ Deliberative democracy as an **advanced capacity to deal with complexity**, based on a normative understanding of the three modes of making sense of complexity: education, research, deliberation.

↘ fundamental value: intellectual solidarity

Intellectual solidarity requires 'responsible attitudes and interaction modes' that can be stimulated by 'responsible forms' and vice-versa.

the capacity triangle



An enriched ethical understanding of the idea of deliberative democracy
Deliberative democracy as an advanced capacity to deal with complexity

additional ideas

- a need for a 'neutral' pragmatic look at reality:

↘ Issues such as

technological *risk*, environmental *occupation*, economic *profit*, labour *instrumentalisation*, market *dependency*, information *mediation*, heritage *depletion*, trans-generational *burden*

can be considered as 'artefacts of civilisation'. Today, whether we want it or not, striving for social well-being implies these 'artefacts of civilisation'.

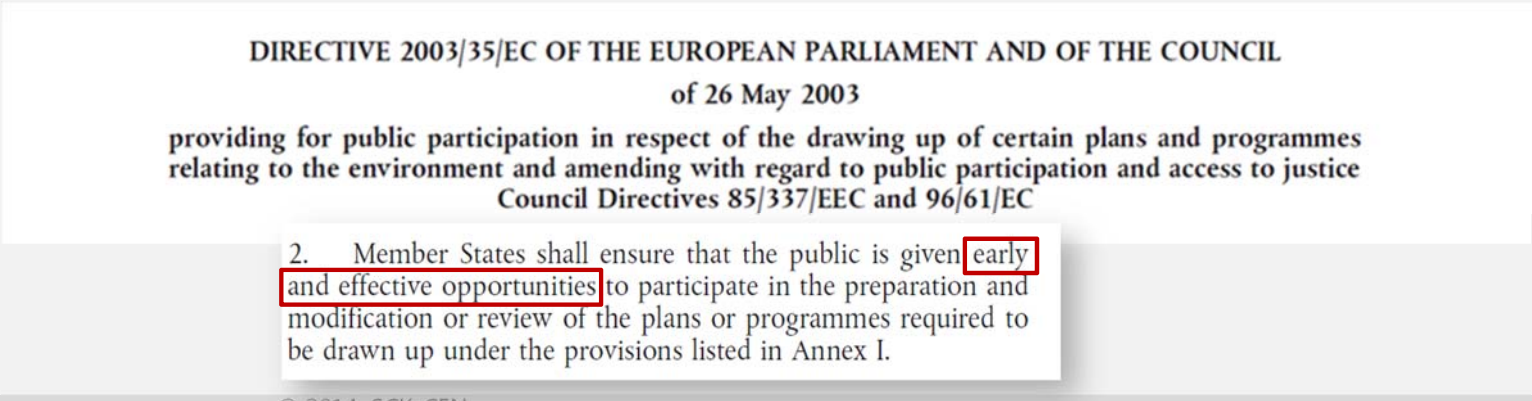
↘ Going beyond 'party politics': the need to deliberate the justification and governance of practices (troubled by knowledge-related uncertainty and moral pluralim) within a '**neutral theme**' ('energy', 'health', 'transport', …).

- With the recognition that there are no privileged positions to make sense of complexity follows a **human rights principle** that would provide humans with the equal right to contribute to making sense of that complexity.

An enriched ethical understanding of the idea of deliberative democracy

In the context of energy, a fair dealing with complexity is today hindered by

- ↘ a 'comfort of polarisation' over the nuclear issue in the public and institutional sphere and in the organisation of civil society;
- ↘ a geopolitics that is focused on nation state sovereignty and economic competition instead of on cooperation;
- ↘ a system of representative democracy driven by party politics that
  - stimulates polarisation over issues based on party ideologies;
  - enables and stimulates strategic uses of science in political decision making;
  - cares for public participation 'in principle' but that avoids deliberation with society about its practical conditions.



DIRECTIVE 2003/35/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 26 May 2003

providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment and amending with regard to public participation and access to justice Council Directives 85/337/EEC and 96/61/EC

2. Member States shall ensure that the public is given early and effective opportunities to participate in the preparation and modification or review of the plans or programmes required to be drawn up under the provisions listed in Annex I.

An enriched ethical understanding of the idea of deliberative democracy
Pragmatic approaches for tomorrow (deliberative democracy 'light')

↘ A 'fair' method of knowledge generation for decision making

in principle - to practice the science of technology assessment as a reflexive and deliberate science, taking into account the rational possibilities of scientific assessment and scientific foresight evenso as the limits to their rationality (taking into account uncertainties, unknowns and value pluralisms).

in practice - 1 education and research inspired by transdisciplinarity and ethics, with the aim to foster a reflexive and socially engaged science;

2 inclusion ('participatory technology assessment');

3 organising and formalising policy supportive knowledge generation independent from politics (to avoid political 'science shopping').

An enriched ethical understanding of the idea of deliberative democracy

Pragmatic approaches for tomorrow (deliberative democracy 'light')

↘ a 'fair' method of decision making

in practice - 1 taking public participation serious

- organising deliberation with 'informed civil society' and citizen representation;
- not using practical difficulties of participation to question the principle as such;
- going beyond the paternalistic idea of the need to 'educate the public';
- taking the outcome of public participation serious;

2 allowing strong international and transnational institutions to enable and enforce geopolitical cooperation beyond nation state positionism;

3 organise participative 'meta-deliberation' on

- the method of participation (what is early? what is effective?);
- the allocation of political responsibilities and mandates;
- the way policy supportive knowledge generation can be organised.

The ethics of radiological risk governance

The need to demarcate a meaningful context for ethics

The challenge of ethics in relation to the radiological protection system

The justice of justification as a central concern

The ethics of radiological risk governance
The need to demarcate a meaningful context for ethics

- What are we speaking of when we speak of ethics in relation to the radiological risk? There is a need to distinct 4 contexts:

1. The context of 'naturally enhanced' natural radiation.
   → joint evaluation of justification is meaningless
   → concern is with the evaluation of the possibility of protection, mitigation or avoidance

2. The context of industrial practices that involve technically enhanced natural radiation.
   → joint evaluation of justification is meaningful but not decisive for the justification of the practice
   → concern is with the evaluation of the possibility of protection, mitigation or avoidance

3. The context of peaceful applications of nuclear technology (energy, medical, industrial).
   → given the 'neutral application context', a joint evaluation of justification is meaningful
   → the 'neutral' context enables meaningful divergences of opinion

4. The context of the use of nuclear technology or material as a weapon, either as a mean for political deterrence, in organised military operation or in terrorist actions.
   → a joint evaluation of justification is not possible, as the context of application is not neutral

- The ethics of radiological risk governance concern the third context.

The ethics of radiological risk governance
The challenge of ethics in relation to the radiological protection system

- A radiological protection system cannot provide the rationale for societal justification.

→ Fostering a responsible radiological protection culture is a **necessary but insufficient condition** for the societal justification of (the risk of) nuclear technology applications

↘ A radiological protection system works for the occupation context of a 'societally justified practice', but it cannot and should not be stretched to provide the full rationale for societal justification of that practice.

- The ethical dimension of the radiological protection system

↘ concerns **showing awareness of the limits of the system** when it comes to providing a rationale for societal justification of a radiation risk;

↘ also concerns **raising awareness for the responsible attitudes and interaction modes** that would enable fair and effective radiological risk governance.

The ethics of radiological risk governance
The justice of justification as a central concern

There is a need for a new ethical spirit for risk governance in the context of peaceful applications of nuclear technology:

ethical spirit — fair and effective risk governance as a fair dealing with knowledge-related and value-related complexity,

with the justice of justification as a central concern,

↘ to inform and change education, research and policy making.

However — fair and effective radiological risk governance means different things in the two main application contexts of nuclear technology (energy, medical)

for the simple reason that the 'justice of justification' has a different character.

The chalenge — to formal approaches to radiological risk governance (education, research and policy making):

to become more 'application theme – oriented' without loosing connection on the common concern for that ethical spirit.