

What is more ethical - to use nuclear energy or to ban it?

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Content

- What is Ethics?
- Development of nuclear energy ethics
 - Development until 1990
 - Development from 1990 – 2000
 - Development from 2000 – 2009
- How does the ethic argument proceed?
- Conclusions

What is Ethics?

„Ethics is a branch of philosophy which seeks to address questions about morality.“

right
wrong

good
bad

fair
unfair

There are three areas of ethics:

- Individual Ethics
- Social Ethics
- Environmental Ethics

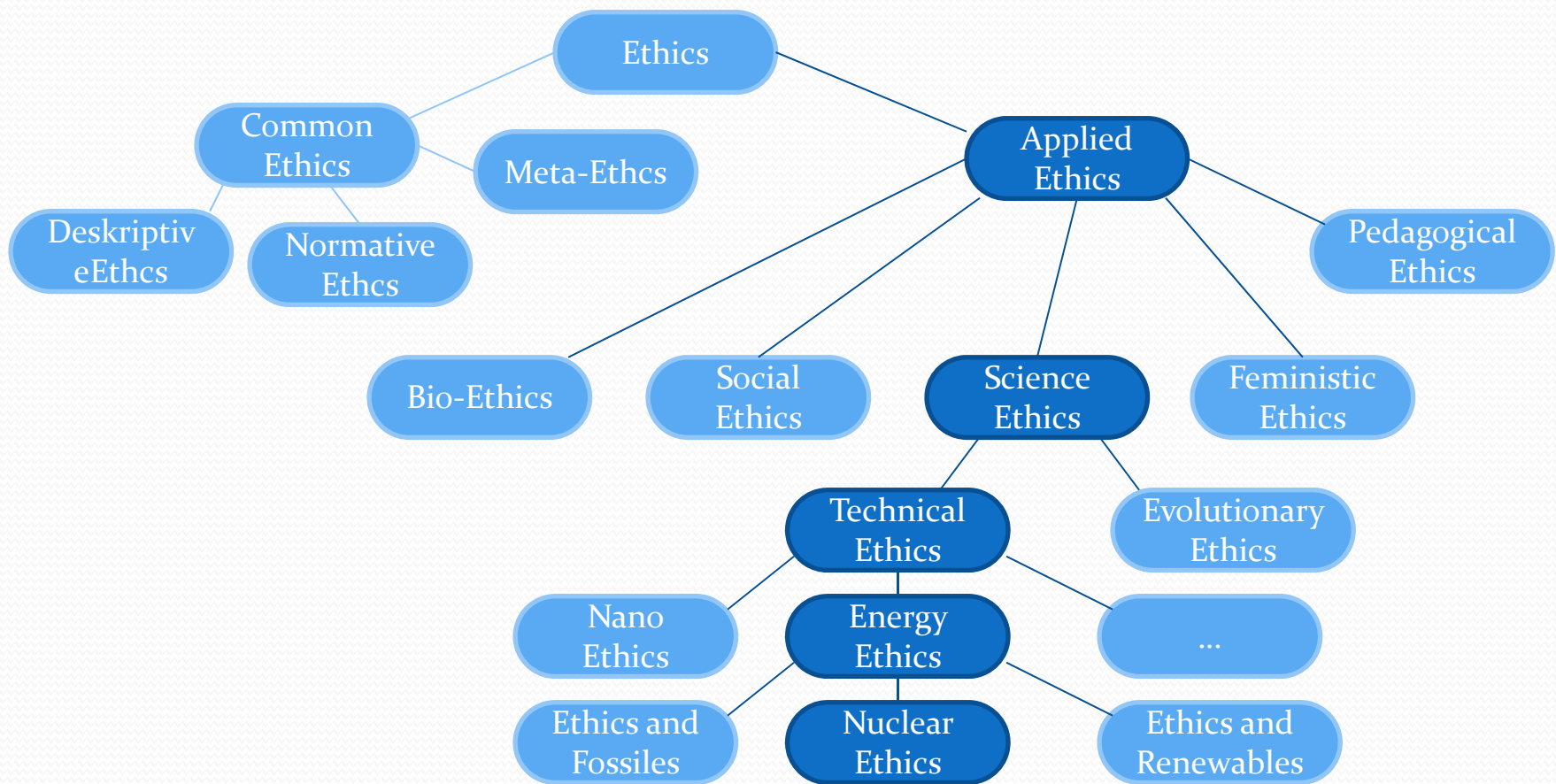
Ethics wants
good living for everybody
in a healthy environment.

Tools of ethics

Main tools of ethics

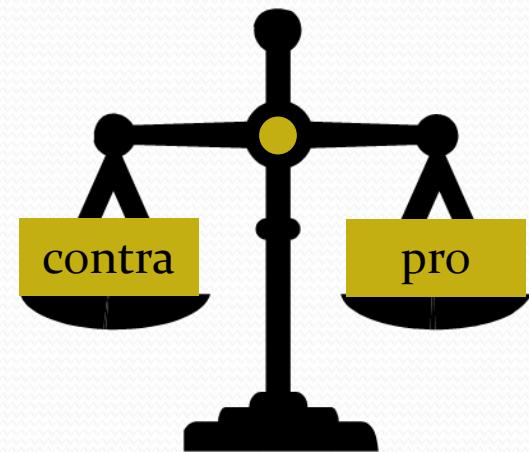
- Understanding
 - Ethical relevant aspects and arguments need to be
 - collected
 - analysed
 - weighted
- Methodical tools are
 - Evaluation of risk
 - Evaluation of outcome
 - Balancing risks and goods

Branches of ethics



Technical Ethics

- The basic elements of technical ethics are
 - Technical action always has ambivalent character
 - All elements of good things and bad things have to be looked at.
 - Advantages (goods) and risks (evil) have to be weighted
- Balancing of “goods”



Development of nuclear energy ethics

The development of nuclear energy ethics can be split in 3 stages

- Stage 1
Development from 1970 - 1990
- Stage 2
Development from 1990 - 2000
- Stage 3
Development from 2000 - today

Development until 1990:

Is Nuclear Energy below Ethics?

In the 70s: Ethical arguments against nuclear energy

- Safety risks
 - Endanger of Humans
 - Environmental Damage
 - Unsolved disposal of radioactive waste
- Caused by incidents
- Uranium mining
 - Transportation
 - Operation
 - Disposal
 - Misusage / Proliferation

Central values of ethics like safety, health and quality of environment are endangered.

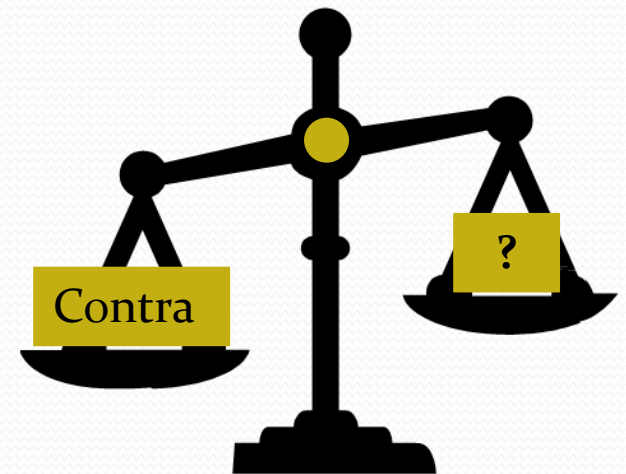
Development until 1990:

Is Nuclear Energy below Ethics?

- In the 80-ties the acceptance crises was biggest

Why do we need NPPs? The power is getting out of my power socket.

- Benefits-Risk-Balance
 - Accident risk personalised
 - Benefits (power) generalised respectively not seen



Development from 1990 to 2000: Broadening Horizons.

In the beginning of the 90s discussion started about

- Environmental issues
- Growth issues

Outcome in ethics

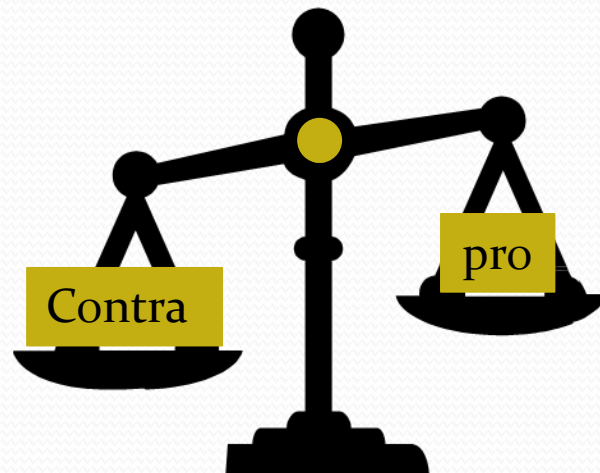
- Term of responsibility is expanded in time and space
- Formulating the principle of sustainability

Sustainable development satisfies the needs of the presence, without risking, that future generations can not satisfy their needs.

Development from 1990 to 2000: Broadening Horizons.

Argument of climate

- The changing of climate is a global threat for humankind and the natural ecosystems.
- CO₂-neutrality of energy production is required by environmental- and social-ethics.



Development from 2000-2009: Nuclear Energy as the Lesser Evil.

Demand to the nuclear ethics discourse

- Factual
- Open learning
- Ready for corrections

The goals of a world wide humanly development and the environmental problems are too serious, to loose time with ideological emotional discussions.

Development from 2000-2009: Nuclear Energy as the Lesser Evil.

Reasons for the new pragmatism in the public opinion about nuclear energy

- Fossil fuel is getting more and more short, more expensive and underlies geopolitical instability.
- Threat by climate change makes CO₂ reduction urgent.
- Despite the call to save energy, the energy consumption is still rising.
- NPP-incidents are rare.

As long as the public wants big amount of power in the socket, they have to learn to make compromises on risks and to do appropriate balancing.

How does the ethic argument proceed?

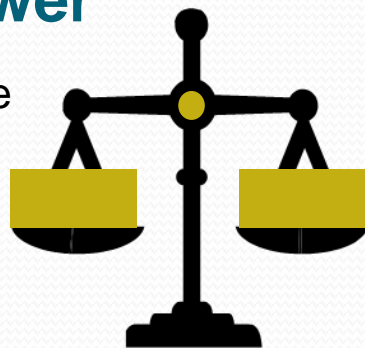
- On the way to a sustainable energy future
 - Look at all pro and contra
 - Balancing has to be done

An action is justified when the evil side effects are not as bad as the evil caused by abandoning the action.

How does the ethic argument proceed?

Contra Nuclear Power

- Risk of radioactivity release
- damage of human being
- damage of ecosystems
- misuse / proliferation risks
- radioactive waste disposal,
- inter-generational inequity
- long planning time for NPPs
- capital intensive construction of NPPs
- undermining of the concept of power saving and raising efficiency
- ...



Pro Nuclear Power

- High capacity
- no power supply gap
- no problematic power imports
- affordability of power
- climate friendly low CO₂-emission power production
- a humanely life needs sufficient energy
- a sustainable energy future needs a higher fraction of electricity
- the society is not willing for a fast change in paradigm
- ...

Weighing of the arguments has to be done individually

Conclusions

Nuclear energy has to be compared now open and broad with other energy production systems in terms of economics, social responsibility and environmentally compatible.

Discussion

