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Strengthening Technology Assessment for Policy-Making

30 years of Technology Assessment for Parliaments - and still valid today

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What legitimacy for Technology Assessment ?

To ensure the legitimacy of TA, it is necessary to:

- Discuss its rationale
- Define for what and for whom it is established

-> Before debating «How to do TA», we need to debate «Why to do TA».

Faith in progress, a contemporary ideology

Since the Renaissance, and even more since the Industrial Revolution, "mainstream" thinking states that:

- “Progress" cannot be discussed.
- Progress, together with technological development, will continually do more to satisfy human needs.
- Humanity necessarily changes for the better.

Key figure: Auguste Comte (1798-1857).

Broad consensus from Liberals to Marxists.

Technology has also its opponents

On the other hand, innovations have always been controversial:

- 19th century: mechanization in manufactories is contested (fear for employment); fear of travelling at a higher speed than horses (railway).
- Early 20th century: restrictions on car use, etc.

Technology doesn’t fall from the sky

- Innovations have always been driven by state interests and economic perspectives (military innovation, opportunities for new markets).
- Examples:
  - Creation of multinational food companies in the 19th century
  - agricultural chemistry after World War I (explosives -> nitrogen fertilizer; poison gas -> pesticides).

Technology doesn’t fall from the sky (cont.)

Central issue:

- Among the many scientific and technical discoveries, only those that meet a State or business imperative are implemented.

There is no clear relationship between needs and means.

Establish a link between needs and means

Clear criteria and a scale of values are important to define the common good.

For example, how far and under which conditions is a given technology promoting:

- human rights?
- social and economic rights (food, water, housing, health, education, etc.) as defined in the United Nations Convention on Economic, Social and Cultural Rights?
- sustainable development, i.e. a development that responds to a hierarchy of needs and protects the rights of future generations?

Make progress to be real progress

Einstein highlighted the growing gap between our technological capabilities and our moral capacities.

Does our ethics live up to the increasingly powerful techniques that we create ?

Some current controversies

More recently, public opinion has been contesting several technological developments:

- Agricultural pescticides (Rachel Carson, 1964).
- Critical movement against the civil use of nuclear technology (since the 1970s).
- Fear of genetic engineering, on different levels (ecological, but also social as peasants lose their ownership on seeds).
- Medicine (vaccine refusal, issues related to incurable diseases, etc.).

The need for a user manual

- An ethical and democratic vision of our society requires that citizens have their say on the issues that affect them directly.
- These issues are related to strong economic challenges, that can be experienced either positively (new developments, jobs, etc..) or negatively (commercial interests are being put before those of the people).
- Fears and hopes, values and interests give rise to many conflicting messages.

A need to discuss and structure

Being confronted with these controversies, it is necessary to:

1. Set up debates (not only on issues where opposition, clustered around interest groups, is focusing attention).
2. Structure the debate, i.e. distinguish between uncontested evidence (e.g. how the technology works) and elements of controversy.
3. Find out what is the common good.

The example of information technologies

For a long time, information technologies were not considered problematic.

Today, some negative points are emerging:

- Addiction and escape into virtual worlds
- Problematic contents (violence, racism, etc.).
- Extensive surveillance of persons... for the benefit of companies and/or state security
- Energy and environmental dimensions (lifecycle leading to ecological and social damages).

-> Need for a user manual

Mission of TA

TA aims to ensure a double systematic:

- Issues submitted to its consideration are sometimes already debated in the public space, but sometimes they are not debated at all or only in certain circles.
- In the manner of debating: often the debate is contentious and fueled by hidden interests and positions

-> A scientific methodology to talk about the effects of science.

TA is based on a credible methodology

TA doesn’t make claims about «the truth». It is an approach to structure the debate:

- It is impartial
- Its credibility comes from it methodolgy
- It first documents, then shows the positions at play and creates scenarios.
- It doesn’t make any judgement, but is a tool to facilitate decisions.
- It doesn’t exlude, but includes

In short: A philosophy

Technology is changing the world, for better and worse

Progress is not a fatality

- Technological innovation doesn’t necessarily mean cultural, human and social progress
- Cultural, human and social progress is not automatic
  - There is a need for a user manual
  - Innovation has to be in line with needs
  - It is a democratic requirement to have a transparent and informed debate

The Swiss case: TA birth

- **1982:** A Parliamentary postulate demands to consider the creation of a tool that would foster systematic debate and foresight on the consequences of technological innovation: Technology Assessment (TA)
- **1992:** the Swsiss Science Council, an advisory body to the federal government for issues related to science and higher education, launches the «TA-SWISS Programm» (first as a pilot project, then as a standing programm).

The example of TA-SWISS

- Since 2008: TA-SWISS is part of the Academies of Science, a public funded association representing Swiss researcher bodies.
- Budget of approximately € 1 million.
- Working in synergy with other public (or publicly funded) institutions.

TA-SWISS : procedures

- Level 1: literature study.
- Level 2: an analysis of the situation, with survey of players (experts, stakeholders, etc.), desk research, scenario proposals and user manuals based on assumptions.
- Level 3: promoting debate on technologies and their consquences, using communication and participatory tools (press communication, workshops, consensus conferences, focus groups, citizen summits, etc.).

In place of conclusion…

- Controlling the interface between science and society is a major challenge, a key to a humanism of modern times.
- A democracy not achieving this goal is falling short of its ideals.
- We should guide innovation and work out user manuals.
- TA provides a platform and a toolbox useful for fostering and strengthening democracy in a technological age.

In place of conclusion...

- But the TA approach remains fragile and subject to partisan attacks.
- Bringing order to partisan debates is not necessarily in the interest of all elected officials and stakeholders.
- Some persons or organizations may prefer not to turn the spotlight on certain issues or technologies.
- It is time to proclaim the maturity of TA and its needs, and to include it in the decision aid toolbox.