Commissioner Janez POTOČNIK

Speech

Truth, progress and responsibility:
The key values that anchor science in European societies

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Knowledge, Ethics and Responsibility

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Dear Excellencies,

Dear President,

Dear Professors,

Ladies and Gentlemen,

It is always a great honour for me to participate in such international conferences and to be given the opportunity of sharing my views with you.

Before getting into the subject, I would like to convey to you the full support of President Barroso to this event. He is convinced that openly debating the interaction between science and society is a key element to European construction and, further, to international dialogue.

I will proceed in **three stages**.

- I would like to start by acknowledging the depth and complexity of the **relationship between science and European society**.

- Then, I will present an overview of how **EU research policy** contributes to the fostering of a research-friendly European society.

- And finally, I will address the issue of **scientific expertise** to show how the democratic knowledge-based society requires a sound handling of scientific advice and the development of a critical citizenship.

1. *Science is an engine for European societies*

Science has always been one of the engines of European societies.

There has been a **growing demand** for scientific knowledge in the EU political agenda. This can be demonstrated in many ways. For instance, science intervenes in fundamental political debates which command the future of Europe, such as the Strategy for Sustainable Development and the Strategy for Health and Consumer Protection which are of special interest for citizens.

In parallel, **expectations** are high for science and research. Not only as a primary source of knowledge, but also as a catalyst for innovation, economic growth and social welfare. Science and research require a strong degree of commitment from society to be sustained and to flourish.

As **central features** of European societies, science and technology fill **all fields of human activities**. Scientific expertise tends to be called upon in any circumstance where

urgent questions emerge at the forefront of the news, be it avian flu or the latest environmental disaster.

But there are growing difficulties in tackling the nature, size and complexity of current societal dilemma such as global warming, health threats and poverty. As a result, **scientific expertise is put on trial**.

The **perception** and the role of science and scientific expertise are **evolving** and, with it, the functioning of our democracies.

The **concerns expressed by citizens** must be given the attention they deserve, and it is my ambition, as Commissioner in charge of the European Research policy, to bring research closer to society and to encourage scientists to multiply the opportunities to engage in broader dialogue.

Bringing research closer to society?

But what exactly does it mean to have the aim of: "Bringing research closer to society"? I would like to take a moment with you to reflect on the meaning of this expression.

First, let's recognize that **research is not** somehow an alien or **extra-terrestrial** activity. It has always been implemented by men, and …(still too few) women!

In this sense, research has always been not only close to society, but the **fruit of society**.

Why then, do we feel the need to "bring research closer to society?" What is behind this sense of distance that we imply by using this expression?

With this common expression, "bringing research closer to society", we express an **uneasiness with our established references and mental tools** to think about science and its role in society.

Three key values can be identified which anchor science in European societies: **truth, progress and responsibility.**

These anchoring values have been inherited from European history in three **successive waves**:

- From the Renaissance to the Enlightenment, i.e. the 16th-18th centuries,

- The Industrial revolution, i.e. the 19th century,

- The Knowledge-based society, i.e. the second half of the 20th century.

From the **16th-18th century period**, we inherit the vision of science as an endeavour which aims at discovering the **underlying laws of nature**. Galileo and Kepler open this new era for science, based on observations and experiments. Science is about **truth**. Beliefs should not interfere with science. This is translated in the fundamental principle of the **academic freedom**[1], and grounds the legitimacy of the self-governance of the scientific community.

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[1] Article 13 of the Charter of Fundamental Right: *Freedom of the arts and sciences:* "The arts and scientific research shall be free of constraint. Academic freedom shall be respected".

From the **19th century**, we know that scientific discoveries lead to technological developments which impact on our way of life. These impacts are mainly positive, and are associated with **progress**. They opened vast new areas for economic activity, and today play a central role in **growth and employment**. What would our lives be without thermodynamics, solid-state physics, and all other forms of scientific knowledge, including economy, sociology and the other social sciences and humanities?

In the 20th century, science and technological developments continued to live up to their promises, but the concepts of **truth** and **progress** showed some **limits**.

Indeed we have known that scientific knowledge does **not** correspond to an **absolute truth** or a pre-existing reality, but instead to efficient modes of representation which allow us to predict phenomena and interact with them.

In the second half of the 20th century **new fronts of political concern** opened up:

- **Misuse** of technologies with the use of the atomic bomb;

- **Sustainability issues** with the first oil crisis, pollution, biodiversity, climate change;

- **Ethical** issues, mainly but not exclusively linked to biotechnology.

With these new fronts of political concern, science is recognized as **ambivalent**. It is **not** identified anymore only and **blindly** with **progress**, but also with "new issues to be dealt with". Science is part of the problem **and** part of the solution.

With the ambivalence of science, the question of **responsibility** is brought to the forefront. And it is intimately linked with issues which are now within the realm of human action and, consequently, subject to political deliberations.

Nuclear energy, for instance led to the *potentiality* of mass destruction, opening a drastically **new dimension** in the

realm of public action, that is to say the fact of ***not activating*** this potential for mass destruction.

Science and technological development have also led to **sustainability issues** related to the massive use of fossil fuels and other natural resources, or to the impact on the environment of by-products of industrial activities.

In addition, with developments in biotechnology, science brings into the political sphere issues such as the **frontier between human and non-human**, or the issue of **when life begins and ends**.

Whether we like it or not, all these issues fall now under human responsibility. Decisions need to be made collectively in one way or another. This is what I mean when I say: "**becoming a political issue**". It is a political agenda that would certainly not be recognised by the policy-makers of our grandfathers!

2. *The triple objective of the European research policy.*

So, to return to my initial question: "What do we mean when we say "bringing research closer to society"? my answer is that we mean to aim at:

- Protecting the **integrity** and independence of science;

- Fostering the **innovation** process;

- Ensuring the **societal relevance** of science and its applications;

In order to "foster European integration".

And indeed, this is what we are aiming at with our proposal for the 7th "Framework Programme" which is the main instrument of EU-research policy for the period 2007 to 2013. It is my objective to **ensure that this framework programme contributes to this triple objective**:

- Being a **protector** of the integrity of science;

- A **supporter** of innovation;

- A **guarantor** of societal relevance.

This **first objective** - to protect the integrity of science - has led to the establishment of **strong scientific institutions**. Our **host today** and many participants at the conference are here to attest its long term strength. The future **European Research Council** is meant to give a further impulse in the same direction. It will rest on the principles of autonomy and the integrity of the scientific community. Research teams will compete at European level across all scientific disciplines and it aims at funding the best of European science and scholarship, as assessed by peer review.

To feed the innovation process and make full use of it – the **second objective** - calls for another type of actor, mainly businesses, as well as fruitful and efficient **public-private partnerships**. Specific fora have been conceived to involve businesses in setting and implementing the research agenda.

The **third objective** – of ensuring the societal relevance - brings with it another broad and ambitious dimension, and one in which we are still in the "learning by doing" phase. It implies modes of governance which ensure not only that

citizens are well informed, but that they also have a say and are listened to.

In order to reinforce the societal relevance of research, we will **increase the involvement of organised civil society in the research policy cycle**.

Already academics and industrialists are well involved, but progress needs to be made regarding civil society. **Broadening access to research** can only improve the relationship between science and society by showing that research brings value to society and is accessible to all.

The European Framework Programme for research integrates this new challenge. The **Science in Society strand** of this Programme represents a significant extension of the pilot work that we have previously undertaken in this area across a wide range of activities. We aim to mobilise both **knowledge and energies** to anchor science in societies. We will **fund research** on science in society and **support all stakeholders** involved in developing the scientific culture in our societies.

3. The use of scientific expertise in democratic knowledge-based societies.

But bringing research closer to society means also **channelling scientific results into policy-making** to ensure sustainability, public health and food safety. The policy makers are here confronted with the responsibility of making good use of scientific advice.

The use of scientific expertise in democratic deliberations

In fact, we have to recognize **paradoxical trends**: there is a **growing demand** for scientific expertise, and at the same time, it is confronted with an **increasing scepticism**. This comes from two difficulties:

1. The fact that the use of scientific advice **rarely** prescribes a single political option;

2. The fact that scientific expertise requires a **validation process**, where an interaction between scientific knowledge and lay knowledge takes place.

Society and science are **not** in a simple "**question and answer**" relationship and scientific knowledge does not banish uncertainties and ambiguities. Science produces elements for debate and when there is a controversy, scientific arguments are mobilised by all sides of the controversy.

It is therefore necessary to compare and **integrate the scientific arguments** that feed the different positions. In that way, scientific advice cannot be seen as a means to shortcut political deliberations in an authoritative way. Of course, **it shapes** the landscape for **meaningful alternatives**, and sets both the **potentialities** and the **boundary constraints** of the situation. But it should not be looked at as a source of authoritative judgements.

What **kind of expertise** should be taken into consideration once a technoscientific problem has been identified? What constitutes the "**sound science**" that is necessary to make "sound decisions"?

Blind faith in scientific methods and scientific proof creates the **risk** of not asking the right types of questions, and indeed of **failing the validation process**.

Indeed, scientific knowledge is produced under purified laboratory conditions. Many cases have shown how difficult the **transfer of this knowledge** is into the much more complex and messy situations of "real life".

In **scientific research**, scientists formulate their questions. In the field of **expertise**, scientific knowledge is mobilised to deal with a question imposed on the scientific community. These are two different exercises!

The validation of scientific knowledge outside laboratory conditions is a **critical stage** where questions from lay people and other forms of knowledge come into play. It is a central element for the modes of governance in the European knowledge-based society.

In the **culture of a democratic knowledge-society**, the relevance of questions should not simply be measured against their scientific conformity. In its very nature the concept of a knowledge society also requires the **diversification of types of knowledge** recognised as being relevant.

Indeed recent experiences have shown that citizens, once they became involved in technoscientific issues, managed to develop a **rather fine-grained vision** of the problems at stake.

Citizen panels, for example, show how their **testing of scientific expertise** renders it more **socially robust**.

The added value is in **challenging** the ways in which **questions** about tomorrow are posed by experts and ensuring that emerging problems are viewed from different angles.

It is further seen as crucial to **give up the classical fiction of the fact-value divide** in public technoscientific issues, as it

hinders more open forms of debates and it makes misleading assumptions about the values that are embodied in expert knowledge.

If you will allow me to use an **analogy**, the **use of scientific expertise** in the policy making process and in public deliberations is to the democratic knowledge-based society what the **circulation of blood** is to each of us: what makes us live, nothing less.

Critical citizenship should not be regarded as problematic for the technoscientific development of societies, but rather as playing a **central**, positive role in building **democratic societies**.

Public "resistance" to technoscientific developments cannot be understood as simply rooted in ignorance or anti-scientific orientation. It is part of the appropriation process of these developments by society and is essential to the development of **robust science in contemporary societies**.

Far from hindering the transfer of science from the laboratory to society, **critical citizenship** is a key condition for a **vivid validation process**; channelling scientific knowledge into features of our everyday life in Europe.

Conclusion

As we speak, we are learning to live in a collective environment where science has to be fully accepted and firmly established at the heart of public deliberations. Let's apply to **policy-making** the mix of **enthusiasm** and **scepticism** that makes scientific research so powerful and we Europeans so proud of our scientific legacy.

Let's be **confident** in ourselves, in building the future, and coping with the challenges that we will face. **Science and technological developments are the very essence of the European Union**.

As Commissioner for research, I can assure you of the **full commitment** of the EU in this endeavour.

Thank you for your attention.