Documentation

Another Science, Other Technologies Are Possible: Meeting the Challenges

Seminar organised by INES (International Network of Engineers and Scientists for global responsibilities) **and WFSW (**World Federation of Scientific Workers)

Edited by Reiner Braun and Kristin Kropidlowski

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Preface

This documentation covers speeches, presentations and conclusions by speakers and moderators of the seminar “Another Science, Other Technologies Are Possible: Meeting the Challenges”, which was organised by INES (International Network of Engineers and Scientists for global responsibilties) and WFSW (World Federation of Scientific Workers) in spring 2007.

Shortly before the G8 member states (Canada, France, Germany, Italy, Japan, Russia, United Kingdom, United States of America) were meeting in Heiligendamm, researchers, professors and teachers, students, engineers and technicians talked in Berlin about science.

Next to a critical analysis of the European science policy, as described in the framework program seven (FP7) of the European Commission, the aim of the seminar was to develop and discuss alternative ways, coherent with the ideas and part of a clear strategy of sustainable development, where cooperation will be preponderant over competition.

The sustainable development of society as a whole raises problems related to water supply, energy, health, security, climate, but also to poverty, freedom of movement (impediment in rich countries to the immigration coming from poor countries), and to the brain drain. These are just a few examples. To find solutions to the great problems of humankind, efforts of social as well as natural scientists and their interdisciplinary work and research are needed. This multitude of challenges and their pressing nature imposes a definite stop to all kind of militarisation of science and society, too.

The seminar in Berlin was a starting point for a renewed and controverse analysis of the problems we face as societies. Their challenge is to address the problems effectively. s

The organisers will continue their work in enhancing the responsible culture of scientific responsibility, and those of you who would like to get involved please do not hesitate to contact us. The homepages of the two organisations INES and WSFW provide further information. We hope this documentation will do a first and important step.

A special thanks goes to the speakers and moderators of the seminar, but also to all participants whose contributions have been of great value.

Berlin, July 2007 Reiner Braun, Kristin Kropidlowski

Summary

Reiner Braun, Dr. Stuart Parkinson

Summary

By Reiner Braun and Dr. Stuart Parkinson

A couple of days before the G8-meeting in Heiligendamm, close to the end of German EU-presidency, around 70 researchers, professors and teachers, students, engineers and technicians participated in the seminar "Another science, other technologies are possible: Meeting the challenges". They tried to tackle within two days the topic "Science in Europe". The European science and research policy resulting from the neoliberal orientations of the governments, its consequences on the role of science and its very future were critically discussed. And a lot of questions were asked: What for instance is the divergent element between science policies in different regions of the EU like the East and the South? Is science maybe already geared to interests of the big industries?

For the first time a serious attempt was made to restart the analysis of European science and research policy. The speeches and presentations of the seminar you will find in August on the webpage www.inesglobal.com. The speakers showed that science policy is in the end quite similar in different European countries. And this is not always a good thing. Instead, science seems to be short-sighted and partly too unidirectional: Nano-, bio- and atom technologies are emphasised, meanwhile fundamental research is undervalued. Especially highlighted was the lack of democracy in some universities and research institutes that leads to dependencies of particular younger scientist and researchers.

The function and role of science and research was discussed more generally. Both are partly responsible for the huge problems the humankind is facing. Weapons are invented by scientists and engineers, new computer systems can increase unemployment and raise the productivity which again increases the environmental pollution. But on the other hand science and research can also be part of the solutions to global challenges. The scientists of the Intergovernmental Panel on Climate Change (IPCC) are only one outstanding example. What exactly sustainable science looks like was debated zealously.

Unfortunately the dialog between science and politics as well as between science and the public is almost completely missing. But science and research are far too important fields to be left to the scientists, researchers and engineers only.

And still, one can hardly find anything about the societal relevance of science and research. Critical evaluation only takes place at the margins of research. Instead, the militarisation of science increases. And here it is often not quite clear exactly who is actually carrying out the work with the dual use problem being just one of the key issues.

The alarming elements of the analysis could be continued. But alternatives exist as well. We can often find them outside rather than within the science and research system. But they need to be recognised and can only be promoted with a radical and fundamental change of the policies inside the European countries and at the European level itself.

Many encouraging examples have been presented at the seminar. They include for instance sustainable science, peace research, climate research, sustainable land use, alternative technologies and renewable energy research.

Every change requires “actors“: people that are willing to put the new and maybe better ideas into action. But they also are often missing. Encouraging projects are obstructed by apathy and conformity. Much needs to happen before science and research are again taking the responsibility to be a crucial part of the enlightened culture, so that the dominating structural irresponsibility in science stops.

The seminar was a small and hopefully motivating example. The organisers will continue their work in enhancing the responsible culture of scientific responsibility, and those of you who would like to get involved please do not hesitate to contact us. The homepages of the two organisations INES and WSFW provide further information. The documentation is coming up soon.

Welcome Remarks

Prof. Jean-Paul Lainé

Welcome Remarks

by Prof. Jean-Paul Lainé, France

Content

1. History of this concrete initiative: foundation and growths of the project

2. Situation from a longer perspective:
- Consequence and part of the European Social forum, the ESSF network

- Common desire to bring an awareness of the problems of science and technology to all citizens, by enhancing partnership between NGOs, associations of concerned people, particularly scientists and trade-unions

- Common actions and convergence of INES and WFSW: towards gathering of concerned scientists in a network of networks

1. History of this concrete initiative: foundation and growths of the project

It is already more than three years since we introduced one seminar and several workshops on Science in the ESF; it was in Paris. Science, in our mind is used in its widest sense, not only the present state of scientific knowledge but mainly the choices of scientific policy, of technological developments, of use of results from all fields of science made by politicians on behalf of people. In that meaning we can speak of " another science" and say like for the entire world : "an other science is possible". I wanted to clarify this
title: we will not during these two days speak of meta-science or alchemy but will demand critical analysis of choices made in our name. Some of the people present in Paris proposed the organisation of a European assembly of citizens on science as did the conclusion of the seminar on science. What we are beginning today is somehow the beginning of something like that.
In London INES and WFSW, together with associations like "espaces Marx" and peace movements organized common events for the first time. Thus we officially created the European Social Science Forum (ESSF) network whose first concrete action was analysis and criticism of the first draft of the Framework Program (FP) 7. A big event, on a European scale, outside the ESF itself, seemed to be unrealistic at that time.
In Athens new and more people participated in seminars and workshops: following one seminar a spontaneous meeting raised the questions: what to do, what can we do as whistleblowers? … and this was the first step in building this seminar.

Here in Berlin, and to day: the place and the date are meaningful: soon and close to here will take place the G8 meeting intending to speak of knowledge. In addition it is now 7 years since the heads of European union made a declaration on the "society of knowledge" in the famous "Lisbon strategy".

Since last June we nearly met or organised phone conferences every two months. Designing the content and during the whole process we kept in mind this main goal: ensure enlargement towards new organisations and individuals, if not for this first initiative at least for the future steps.

At that step, on behalf of the organisers, I would like to welcome all of you and I dare to say – even before the beginning of our work – that we already made a part of the walk, we fulfilled a part of the aims.

2. Situation from a longer perspective

This last remark is a kind of transition to the points I wanted to mention at this very beginning of the seminar:

Our place inside the ESF process

I consider our initiative as a good example of what the ESF can provide, following the WSF model. ESF is a crossroad, ESF is not a corset but it brings opportunities to build networks, continuous co-operations and initiatives, it stimulates action against neoliberal policy, against this harmful but main stream in this beginning 21st century.

INES, WFSW, ATTAC, EspacesMarx/Transform and trade-unions present here made the choice to invest into ESF. In spite of grains of sectarianism, of a somehow "unreal" ESF, is an original concept which already proved its usefulness. This seminar is a example.

We want to bring awareness of the problems of Science and Technology to all citizens in order to influence policy makers with their support.

Here we are not in a traditional academic meeting. We are activists for justice, peace and a human, social, environmental development. If here we are still a majority of scientists or people concerned by science, we consider we have two duties:

- to improve and enlarge the "citizenship attitude", the responsibility of our colleagues, of scientists and engineers (these are and stay the" fundamentals"of our organisations, of mine for example (TU of University teachers in France)
- to make citizens aware of the problems of Science and Technology and more, aware of the necessity and possibility to intervene.

This is our challenge; this is why we consider it crucial to enhance partnerships between NGO,s, associations and trade-unions as well as dialog with political parties.

INES and WFSW partnership

Before concretely enter in the seminar, before to give the floor to speakers I can´t help saying my personal view and satisfaction to note that after experiences of co-operation inside ESF we actually co-organized an event for the first time. Undoubtedly this is the beginning of a new step: common initiatives will be in the output of the seminar. Our common investment in international forums - a major circumstance to become more visible and even useful in the political landscape- will go on. Common practices will induce convergences of thoughts. If we add the external pressure: with the necessity to grow to survive, I do think we can realistically dream of a gathering of concerned scientists in a network of networks.

Science and Research Policies in the Lisbon Strategy

Dr. Daniel Thomas

Science and Research Policies in the Lisbon Strategy

Speech by Daniel Thomas, France

The role of science should not be determined by the sole decisions of a few economic superpowers or a few top level scientists. The neoliberal orientations of the global economy and their effect on the evolution of science should be questioned in the framework of an actual new democracy.
A critical analysis of the European science policy is needed not only as far as the framework program seven (FP7) is concerned but also on a wider basis for all the European Research Area (ERA). It is also of a critical importance to discuss the "Science and research policies in the Lisbon strategy".

Introduction

ERA is the first attempt to set up an unique European research policy. National research policies and Union policy overlap without forming a coherent whole. If more coherence is to be made a broader approach is needed than the one adopted to date. The enlargement of the Union is increasing this need. In any case the Europe of 30 countries will not be able to operate with the methods used so far.
The aim of ERA is to look at how to progress towards a neoliberal organisation of research in Europe and to put forward suggestions for consideration and debate (summit of Lisbon, March 2000). This is not a new idea, but the conditions required to process towards achieving this now seem to be in place. The ERA strategy is actually neoliberal even if some aspects could be used to develop alternative ways.

ERA policy embraces the following aspects:

- **Networking** of existing centres of excellence in Europe and the creation of virtual centres through the use of new interactive communication tools.
- A common approach to the needs and means of financing large research facilities in Europe.
- **More coherent implementation** of national and European research activities and closer relations between the various organisations of scientific and technological co-operation en Europe.
- Better use of instruments and resources to encourage investment in research and innovation : systems of indirect aid (within the Community rules on State aid), patents, and risk capital.
- Establishment of a common system of scientific and technical reference for the implementation of policies.
- **More abundant and more mobile human resources :**
    - Greater mobility of researchers and introductions of a European dimension to scientific careers.
    - More prominence to the place and role of women in research
    - Simulating young people's taste for research and careers in science.
- **Greater European cohesion in research** based on the best experiences of knowledge transfer at regional and local levels and on the role of the regions in the European research efforts.

- Bringing together the scientific communities, companies and researchers of Western and Eastern Europe.
- Improving the attraction of Europe for researchers from the rest of the world.
- Promotion of common social and ethical values in scientific and technological matters.

Essentially, a European research area will reduce the freedom of public research systems and will promote a stronger co-ordination in the manner in which national and European research policies are implemented. **At the same time** the barriers must be lifted between different disciplines, along with the barriers that curb the movement of knowledge and persons between the academic and the business worlds.
Even if most of the measures need to be taken by the public authorities, the measures proposed will have an impact on the whole research system (public and private). Centres of excellence will produce knowledge that can be used by companies, which are also among the users of research facilities. And the system on indirect support for research and innovation also concerns the private sector.

1. Co-ordination and Networking of National Research Programs
The successful development of a neoliberal Community research depends on the creation of a "new" research climate in Europe, and on common efforts to create synergies between European, national, regional and Community programs to develop an unique policy.

Treaty instruments relating to research, development and technological innovation policy exist in Article 165 as regards the co-ordination of Community and national activities. Article 168 on the supplementary programs, Article 169 on Community participation in programs undertaken by several Member States, Article 171 on the "joint undertaking" instrument and Article 170 providing for co-operation with other European and international research bodies.

National research programs are carried out largely independently of one another. This prevents the full benefit from being drawn from material and human resources deployed. Hence, member states have agreed to the principle of reciprocal opening-up of national programs. Mechanisms of reciprocal information and a global information system on the objectives and content of program plus the conditions for eligibility and participation should be put in place. At the informal Research Ministers' seminar in Gerona 1-2 February 2002 pilot areas were suggested concerning the opening of national research programs. The commission is ready to provide support for such initiatives in framework-programmes.

2. Infrastructures of European significance could provide essential services to a Europe-wide research community with unique opportunities for R and D, at cutting edge of science and technology with the capacities for attracting a world-class scientific environment.
At community level as far as infrastructures were concerned the action was limited to "Access to research infrastructures" (previously "access to large scale facilities").
In the framework a European Research Area new collective arrangements will be developed.

3. Mobility in EU concerns both transnational mobility and intersectorial movement.
Factors against mobility are rigid employment rules, lack of employment opportunities in Europe, lack of re-entry positions in Europe, insecurity of career paths combined with rigid sectorial segregation.
Factors in favour of mobility are internationally well-known centres of excellence, high demand for postdocs, carrier opportunities (paths between academic and non-academic

research organisations…), internationally, good working conditions with flat hierarchies, little administration obligations, good equipment, large infrastructures.
A limited number of actions were achieved to remove obstacles to the mobility of researchers in Europe since the Sorbonne (May 1998) and Bologna (June 1999) Declarations.

4. The regional dimension may play a "motor" role to promote alternative ways based on research, technology and innovation. But, strong differences exist in economic performance. And as European regions have very different situations terms of their capacity to generate, to absorb and to integrate technological innovation and transforming is in social benefit adopting a single development model would be a mistake (COM (2001) 549 final).
Integrate European regions by stimulating their endogenous potential and by better co-ordinating the interplay between research, innovation and structural policies is a long-term objective. Better communication between scientists and regional policies is needed at regional level.

5. International co-operation
A new international co-operation is needed which must be open and attractive to scientists everywhere in order to offer well-balanced co-operation to the world.

6. Mapping scientific excellence
At the instigation of the Lisbon European Council and to follow up the Councils meetings the Commission and the Member States defined a methodology for a pilot exercise of mapping scientific excellence in Europe initially in three areas, life sciences, nanotechnologies and economics. The exercise was extended to countries associated with the Framework Programme.
This action was a big failure, in fact it was not a mapping of excellence. It is of interest to stress that the commission is always speaking about "Excellence" and "Networks of Excellence" but nobody knows what is excellence.
Very soon anything useful for the neoliberal strategy will be "Excellence".

Conclusion

In Europe there is a need for a new Research policy as part of a clear strategy of sustainable development, where **co-operation** will be preponderant over competition.
This new policy could be achieved through a double democracy. The first one inside the European scientific community including social science and the second one among all the European citizens.
It is time to promote a wide forum of discussion in Europe on the research policies and the technological choices.

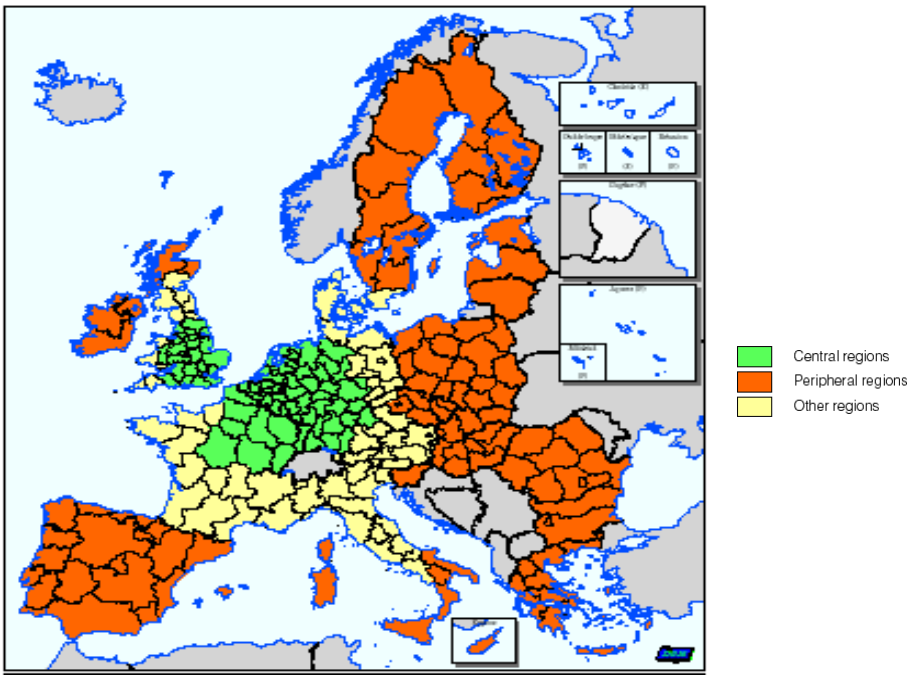
Science and Research Policies in Periphery European Distortion between European Countries: South of Europe

Prof. Elies Molins-Grau

Science and Research Policies in the Europe Periphery
Distortion between European Countries. 2. South of Europe.

Prof. Elies Molins
Asociación de Personal Investigador
del CSIC - Spain

INES-WFSW Seminar Berlin, May 31st, 2007



South of Europe

- The center of gravity of the scientific knowledge has moved from East (China, Persia, Egypt) in old times to Europe and, more recently, to US and Japan.
- Spain, Italy, Portugal and Greece (SIPEL) gave important contributions to science and technology. Think on mathematics, navigation, medicine, architecture, etc.
- Specially in the XX century, lots of SIPEL researchers developed their careers outside his country of origin.

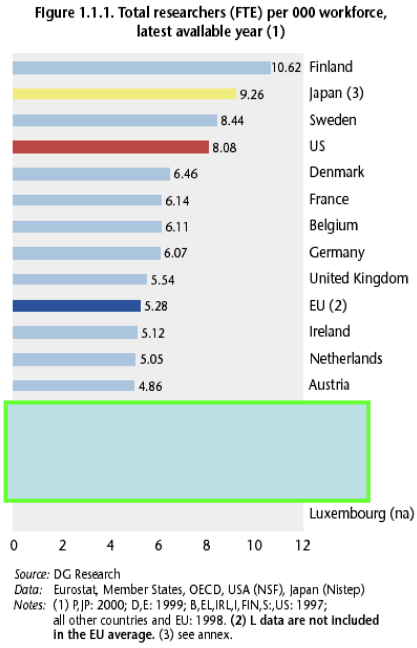
Four types of indicators

- Human resources in R&D and attractiveness of S&T professions
- Public and private investment in R&D
- Scientific and technological productivity
- Impact of R&D on economic competitiveness and employment

researchers

- Most of the data from EC report: “Key Figures 2001, Towards a European Research Area”
- Show departure points and tendencies.
- SIPEL: Less than 4 per 000 workforce.

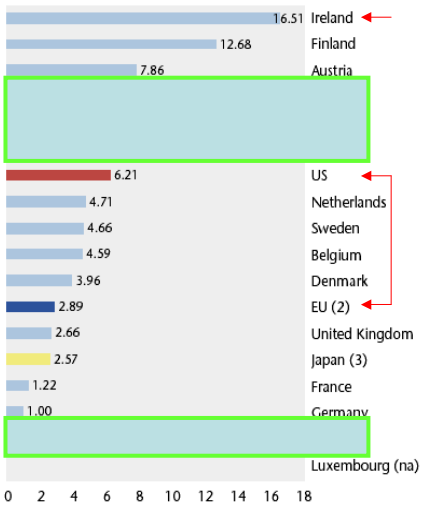
1.- HUMAN RESOURCES



Number of researchers (1999). 3rd European Report on S&T Indicators, 2003

	Business Enterprises	Government Institutions	Higher Education
Greece	2315	2000	10471
Italy	26192	13697	24997
Portugal	1994	3445	8243
Spain	15178	11934	33840
EU-15	459450	130636	315212
US	1015700	46098	136936
Japan	433758	30987	178418

Figure 1.1.2. Total researchers (FTE) - average annual growth (%), 1995 to latest available year (1)



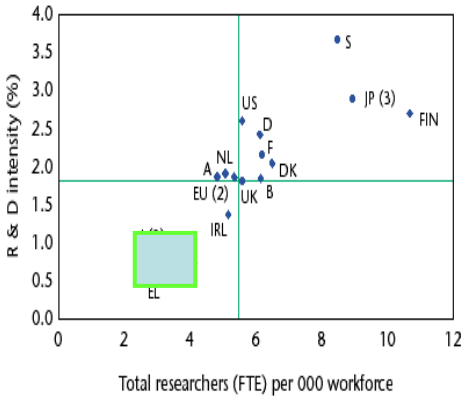
Source: DG Research
Data: Member States, OECD, USA (NSF), Japan (Nistep)
Notes: (1) P,JP: 1995-2000; D,E: 1995-99; B,EL,IRL,I,FIN,S,US: 1995-97; A: 1993-98; all other countries and EU: 1995-98.
(2) L data are not included in the EU average. (3) see annex.

growth of # res.

- Although a higher growth (except Italy), the convergence is slow due to a large absolute difference.

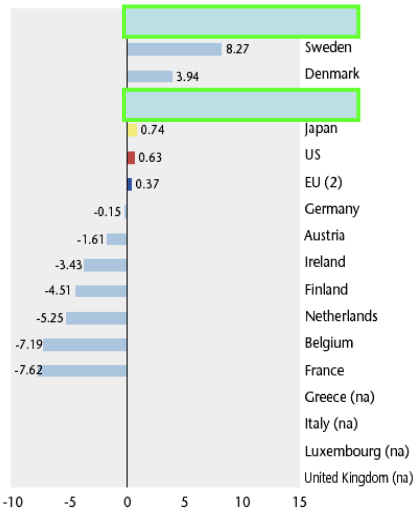
Correlation between investment and # of researchers

Figure 1.1.3. Total researchers (FTE) per 000 workforce and R&D intensity, 1998 (1)



Source: DG Research
Data: Eurostat, Member States, OECD, USA (NSF), Japan (Nistep)
Notes: (1) P: 2000; D,E: 1999; B,EL,IRL,IT,FIN,S,US: 1997.
(2) L data are not included in the EU average. (3) see annex.

Figure 1.2.2. New science and technology PhDs - growth (%), 1998-1999 (1)



Source: DG Research
Data: Eurostat, Member States, OECD, Unesco, Japan (Nistep)
Notes: (1) F,E: 1997-1998; all other countries and EU: 1998-99.
(2) EL,I,IRL,L,UK data are not included in the EU average.

PhDs growth

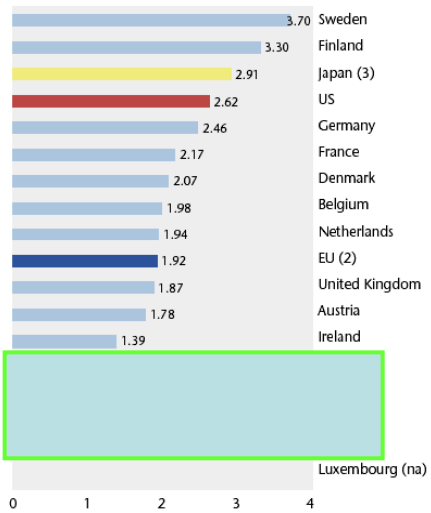
- Lots of them stabilize outside (brain drain).
- Currently, # of students decrease in science careers (specially physics, but also chemistry, geology, maths, but not biology).

R&D investment

- SIPEL far from EU…
- EU far from US & Japan

- Tremendous effort is needed (EU 3% in 2010)

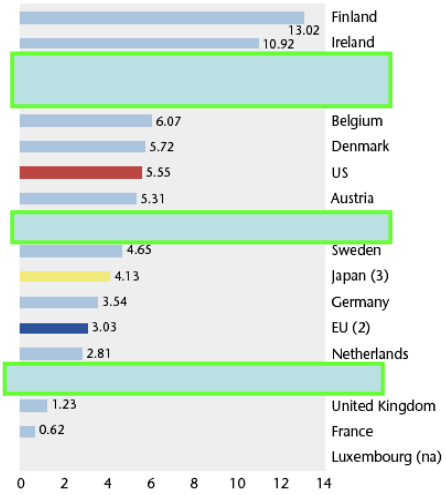
Figure 2.1.1. R&D intensity (%), latest available year (1)



Source: DG Research
Data: Eurostat, Member States, OECD, Japan (Nistep)
Notes: (1) D,A,P,FIN: 2000; NL,JP: 1998; EL,IRL,S: 1997; all other countries and EU: 1999. **(2) L data are not included in the EU average.** (3) see annex.

2.- INVESTMENT IN R&D

Figure 2.1.2. R&D expenditure - average annual real growth (%), 1995 to latest available year (1)



Source: DG Research
Data: Member States, OECD, Japan (Nistep)
Notes: (1) D,A,P,FIN: 1995-2000; NL,JP: 1995-98; EL,IRL,S: 1995-97; all other countries and EU: 1995-99. **(2) L data are not included in the EU average.** (3) see annex.

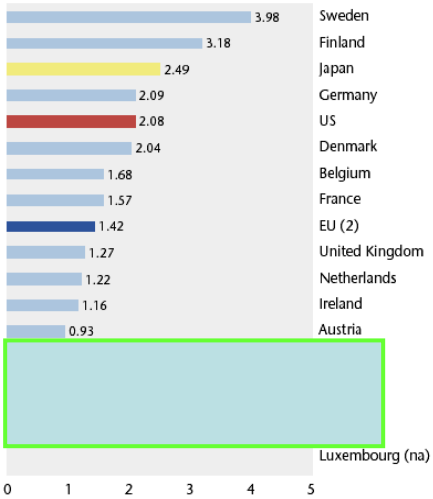
R&D investment growth

- Good rates… but enough ? (perhaps for Portugal)
- Experts consider that R&D growth should be 5% more than GDP growth.

%R&D industry

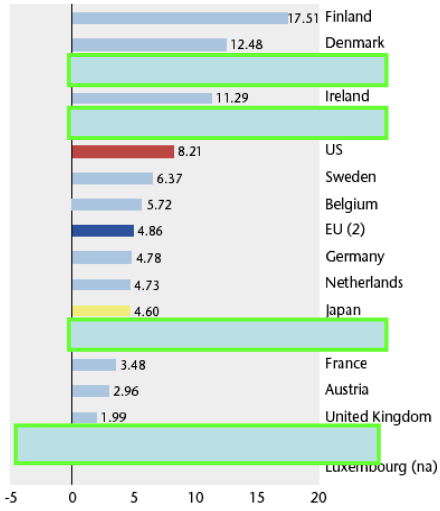
- Innovative effort of industries
- Public effort should be followed by an increasing R&D effort of industries.

Figure 2.2.1. Industry financed R&D as % of Industrial output, latest available year (1)



Source: DG Research
Data: Member States, OECD, Japan (Nistep)
Notes: (1) D: 2000; F,NL,JP: 1998; EL,IRL,P,S: 1997; all other countries and EU: 1999. **(2) L data are not included in the EU average.** (3) see annex.

Figure 2.2.2. Industry financed R&D - average annual real growth, 1995 to latest available year (1)



Source: DG Research
Data: Member States, OECD, Japan (Nistep)
Notes: (1) D,A,P: 1995-2000; F,NL,JP: 1995-98; EL,IRL,S: 1995-97; all other countries and EU : 1995-99.
(2) L data are not included in the EU average. (3) see annex.

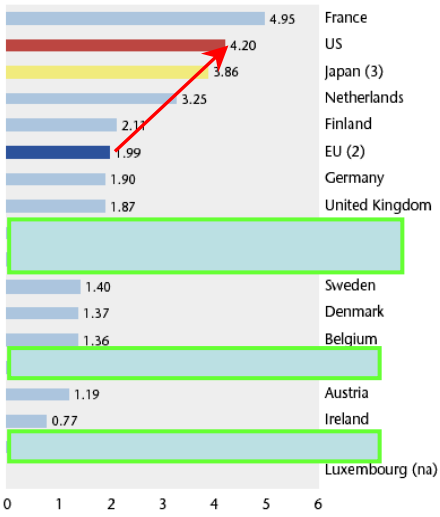
…and tendency

- Heterogeneous results on the growing of the R&D industry investment: different industry structure (i.e. SME based) or different administration policies.

Public investment

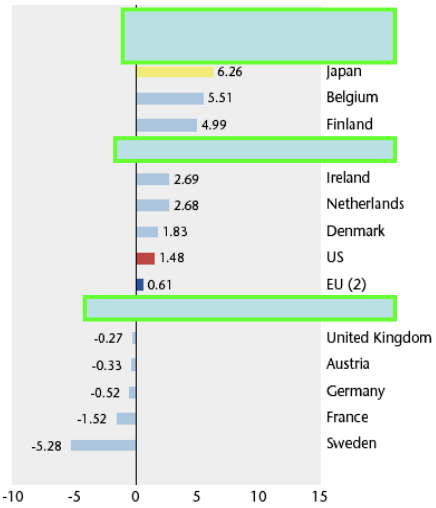
- SIPEL: not so bad respect to EU.
- EU far from US and Japan.

Figure 2.3.1. Share of government budget allocated to R&D, latest available year (1)



Source: DG Research
Data: Eurostat, Member States, DG Ecfin, USA (NSF), Japan (Nistep)
Notes: (1) B,EL,E,F,IRL,I,UK,US and EU: 1999; all other countries: 2000.
(2) L data are not included in the EU average. (3) see annex.

Figure 2.3.2. Government R&D budget - average annual real growth (%), 1995 to latest available year (1)

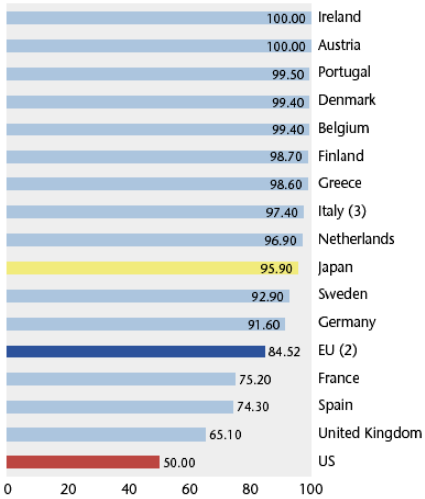


Source: DG Research
Data: Eurostat, Member States, DG Ecfin, USA (NSF), Japan (Nistep)
Notes: (1) 1995-99: B,EL,E,F,IRL,I,UK and EU; all other countries: 1995-2000. **(2) L data are not included in the EU average.** (3) see annex.

Public R&D growth

- EU growing is slower than US and Japan increasing R&D budget.

Figure 2.3.3. Government R&D budget - civil R&D as % of total, latest available year (1)



Source: DG Research
Data: Eurostat, Member States, DG Ecfin, Japan (Nistep)
Notes: (1) D,A,FIN,S,US,JP: 2000; F,I: 1998; all other countries and EU: 1999. **(2) L data are not included in the EU average.** (3) see annex.

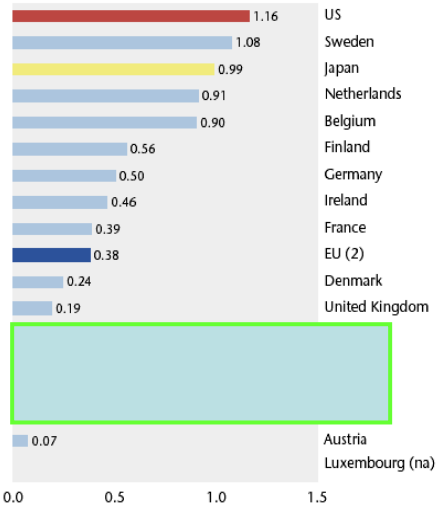
Military R&D

- Spain has included some defense budgeds in R&D to improve figures.
- Large in US

Venture capital

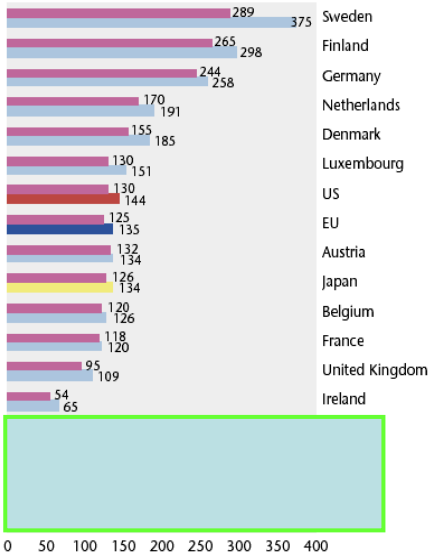
- Investment per 000 Gross Domestic Product.

Figure 2.5.1. Seed and start-up venture capital - Investment per 000 GDP, latest available year (1)



Source: DG Research
Data: Eurostat, EVCA, NVCA, VEC
Notes: (1) JP: 2000; all other countries refer to 1999.
(2) L data are not included in the EU average. (3) see annex.

Figure 3.1.1: European patents per million population



Source: DG Research
Data: Eurostat, EPO, Japan (Nistep) *Calculations:* OST, FhG-ISI,
Note: (1) see annex

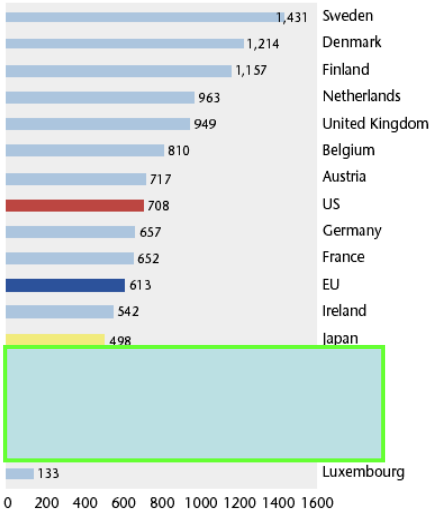
Patents per inhabitant

- SIPEL at the bottom… (also for US patents)
- but Greece and Spain have larger growing rates the EU average.

publications

- Lowest in the # per inhabitant, but also very high per growth annual rate.

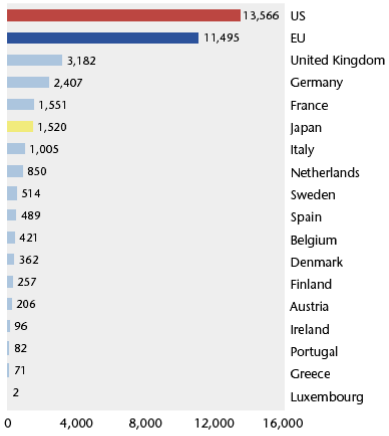
Figure 3.2.1: Number of scientific publications per million population, latest available year (1)



Source: DG Research
Data: ISI-SCI, CWTS (treatments)
Notes: (1) All data refer to 1999.

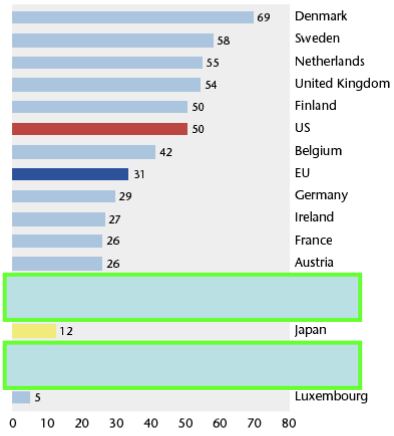
Highly cited papers

Figure 3.2.4 : Total number of highly cited papers, latest available year (1)



Source: DG Research
Data: SCI, CWTS
Note: (1) All data refer to the period 1995-97

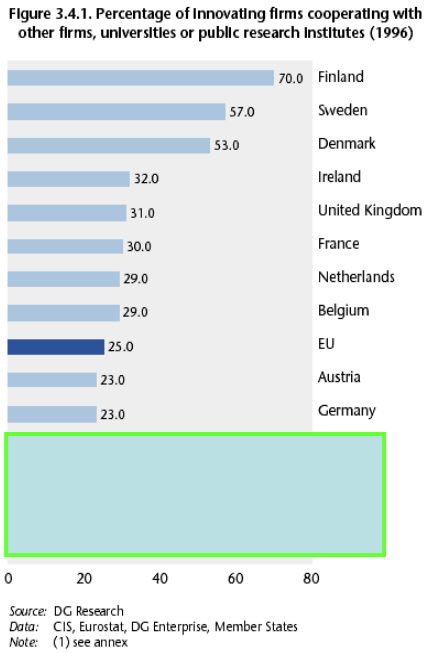
Figure 3.2.5: Number of highly cited publications per million population, latest available year (1)



Source: DG Research
Data: Eurostat, SCI, CWTS, Japan (Nistep)
Note: (1) All data refer to the period 1995-97

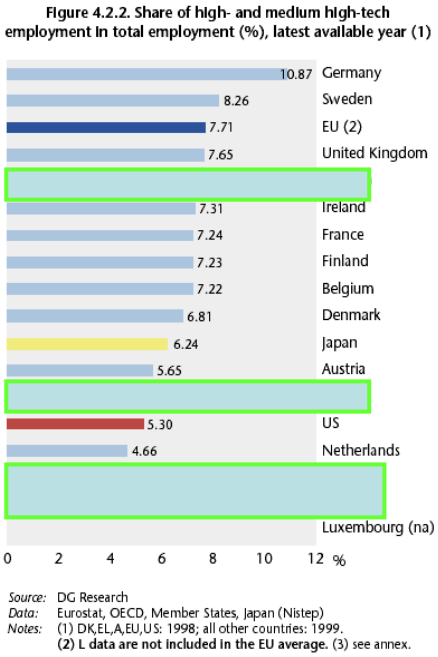
Public-private cooperation

- Technology transfer
- Simbiotic relationship
- Always a challenge



High-tech employment

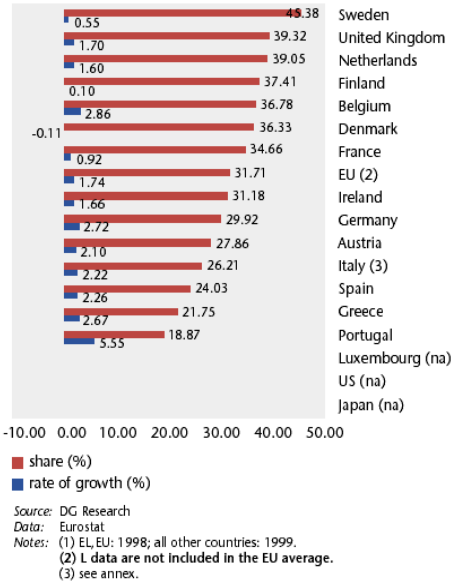
- Also an indication of the innovation capacity.



Knowledge Intensive services employment

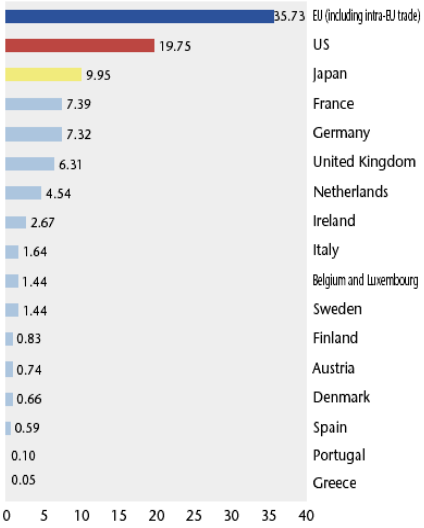
- Tendencies inverse to current situation: slow convergence.

Figure 4.3.2. Share of knowledge intensive services employment in total employment: last available data and rate of growth from 1995 to last available data



Source: DG Research
Data: Eurostat
Notes: (1) EL, EU: 1998; all other countries: 1999.
(2) L data are not included in the EU average.
(3) see annex.

Figure 4.5.1. World market share of exports of high-tech products (%), latest available year (1), (2)



Source: DG Research
Data: Comext, Comtrade
Notes: (1) The world market refers to total world HT exports including intra-EU exports. (2) All data refer to 1999.

% of high-tech exports

- Enhancement of EU due to intra-EU trade
- Japan decreasing (-8%)

Others

- Erawatch: similar or improved tendencies
- Slow convergence of SIPEL to EU
- Bologna impact + lower interest for science and technology formation
- What about EU convergence to US&Japan?
- Convergence is sustainable?

Pushing new politics

The capital market functions imperfectly in financing new, high tech and knowledge intensive activities that are [redacted]. This weakness requires that new sources of finance and adequate institutional frameworks are created for financing new, risky and promising opportunities.

about financial benefit

FOR SOCIAL BENEFIT

Global Responsibilities

- Materials & recycling
- Energy & climate: large increase in energy production is unavoidable (!)
- Food & water
- Ethics & education
- Conflict management
- Health & transgenics
- Nature conservation

For discussion

The demography expansion together with the improvement in quality of life implies an application of a sustainable development model everywhere.

This is a real challenge for the R&D system.

Science in the Periphery in Transition

Prof. Dr. Gordana Jovanovic

Science in the Periphery in Transition

Speech by Prof. Dr. Gordana Jovanovic, Serbia

Although the figure of center-periphery has been widely used in different spheres (geography, history, politics, culture) a normative privileging of the center is prevalent in majority of uses, though in rare cases some advantages of periphery can be admitted too. In the context of historical development Europe as a unique cultural-historical construct has been standing for the most privileged center for a very long period of time. A geographically relatively small and territorially "blurred" continent has expanded its life-world well beyond its borders - occupying, colonizing, dominating, and shaping vast areas of our planet. In that sense Europe has demonstrated the generative power of other principles of development in contrast to pure natural one. These principles have been named as the principle of logos, the principle of freedom, the rational principle, the spiritual principle - all of them saturating an image of the "European miracle".

However, the same figure center-periphery has been applied by Europe to the Europe itself. Europe has constructed a periphery within itself - to the extent of exclusion or expulsion of the non-European from Europe itself. That very fact demonstrates the generative power of the center-periphery model. But at the same time one could expect that this very fact would stimulate a self-reflective and possibly a self-critical attitude toward the model itself. Yet, this was a rather rarely used potential.

The Balkans is the most contested place for Europe. It is a periphery at the periphery, normatively positioned as a non-European or even more an anti-European entity. It is substantialized as a perpetual enemy of civilization, progress, rationality.

Indeed: "a specter is haunting Western culture - the specter of the Balkans. All the powers have entered into a holy alliance to exorcise this specter: politicians and journalists, conservative academics and radical intellectuals, moralists of all kind, gender and fashion…By the beginning of the twentieth century, Europe has added to its repertoire of Schimpwörter or disparagements, a new one that although recently coined, turned out to be more persistent over time than others with centuries-old tradition. "Balkanization" not only had come to denote the parcelization of large and viable political units but also had become a synonym for a reversion to the tribal, the backward, the primitive, the barbarian." (Todorova, M., 1997. *Imagining the Balkans*. New York: Oxford Univ. Press, p. 3)

The Balkans is not only a periphery of Europe; it is the radical Other of Europe. As Europe is the birthplace of philosophy in the ancient Greece and later on the birthplace of modern science, the question of science in the Balkans could appear at a first glance as almost a contradiction in terms.

As any other term, the constructed and re-imagined Balkans articulate only some aspects of phenomena, never grasp them completely. As a matter of fact, the Balkans is part of a scientific community, even if it is excluded from many other communities.

Nevertheless, to speak and of course even more to do science in the Balkans is a challenging task. And may be even more challenging nowadays than any time in the past.

One does not need to be a Marxist in order to accept that science as a corpus of knowledge and practices is a result of specific socially mediated activities. Therefore, science is necessarily social - even if it is not aware of that or even if it assumes and advocates a neutral position toward society.

The birth of modern science - first of all physics, and that mechanics in the seventeenth century cannot be understood as just an intellectual breakthrough. Many changes in the forms of life (disenchantment of world view, rehabilitation of curiosity, individual understood as a free, rational agency becoming a subject of many activities - economic, intellectual, artistic, increasing social appreciation of labor, introduction of rational criteria for assessment, practical interest in controlling nature, shift in dominant sensual mode from hearing toward visual observation, etc.) have prepared and made possible for the seventeenth century to become a century of science. Since then science has been playing a decisive role in shaping human lives and ways of thinking on human lives. As a result, modern societies are lived by and understood as knowledge societies, whereby scientific knowledge is privileged as the superior knowledge. Consequently, all other forms of knowledge are discredited as pre-scientific, non- or even antiscientific. Science has become a universal legitimizing institution.

As self-understanding of modern societies is normatively shaped by scientific knowledge, it is clear that the society itself is at stake when science is at stake.

Emancipatory potentials of science cannot be denied. But this fact is not the whole story of science. Science has proved to have not only repressive, but even destructive outcomes. Not all of these outcomes were just bad uses or misuses of neutral scientific knowledge. Many outcomes are necessary consequences of the accepted scientific attitude which means approaching phenomena in a specific way, selecting some aspects, neglecting others, ignoring the context, narrowing developmental perspective, especially future.

As far as social and human sciences are concerned, the characteristics of the scientific way of studying phenomena are even more important as the subject of research is part of the social world which is the subject-matter of social sciences. Nevertheless, the history of human and social sciences has been dominated by attempts and requirements to adopt a naturalistic attitude toward social phenomena. As a consequence, the distinctive features of social world – i.e. its meaning-making, interpretive structures were ignored or left behind. The further consequences were what Edmund Husserl described in late thirties of the twentieth century as the “crisis of European sciences” (Husserl, 1936/ 1982. *Die Krisis der europaeischen Wissenschaften und die transzendentale*

Phaenomenologie. Hamburg: Felix Meiner Verlag). They have no relevance for life as they cannot say anything about the most important issues of sense - instead they can say more and more about less and less important issues.

It is historically interesting that Husserl's ideas on crisis of European sciences as an expression of crisis of European humankind were first published in the Balkans, precisely in Belgrade, in 1936 in a philosophical journal. What was not possible any more in Germany was still – unfortunately only for a while - possible in the Balkans. Of course, it was possible also because the Balkans was more than just a "haunting specter" as seen by Western eyes. The Balkans was certainly also a place of barbarian acts. Many of them were committed by Western people during the wars in the first half of the twentieth century. The Schimpfwort "Balkanization" was coined partly simultaneously with the acts of parcelization - actually no surprise given the fact of the same authorship.

As the first decades of the twentieth century were already psychoanalytically enlightened, it is not so difficult to recognize in this symbolic process a mechanism of projection, with the difference that what was repressed were not just desires but actual deeds which by way of projection were completely ascribed to the Balkan enemy, and to a great extent repressed from European idealized self-consciousness.

Belgrade as a symbolic refugee for Husserl's ideas on the crisis of European sciences was repeatedly and heavily bombed during the "short twentieth" century by enemies and allies alike – both sides declaring themselves as belonging to the most civilized nations. At the beginning of the World War Two Hitler's Luftwaffe has destroyed also National Library of Serbia. The library was not empty.

Nowadays in Serbia many books are missing - those old ones once destroyed and new ones.

It is quite an adventure to get foreign academic books in Serbia – even as a present. They are treated as any other commodity as Serbia is eager to adopt neo-liberalism faster and more radical. That model is imposed as an unquestioned norm. The International Monetary Fond and The World Bank have powerful mechanisms at their disposal to impose their requirements. They are all based on assumptions of a minimal state, deregulation, and free market. When the taxation system in Serbia was changed and VAT introduced, VAT for books was the same as for any other commodity. The publishers had to struggle to get lower taxes for books.

These are just small, banal examples of a policy that is clearly based on a radical neo-liberal model. This model is presented as the only viable model, as a European Union standard, therefore as a condition for Serbia to join the EU.

An important part of that policy is also delegitimization and even more dismantling of the institutions built during the socialist Yugoslavia. The wave of mass privatization should include also research institutions. It is possible to foresee consequences of such a policy. They are already visible in the sphere of higher education. Private universities are

emerging over night. Of course, by any decent standard most of them don't deserve the name university. University is indeed associated with universality. Those private universities by no means follow Humboldtian scope of university, which should include all spheres of knowledge. Needless to say – their preferences are market and management as the best sold study offers.

Due to a bad juridical regulation professors having positions at state universities were holding at the same time positions at the private universities - until recently even without the first employer being informed about that. Very slowly the state recognized that such arrangements jeopardize its interest. Again, this is just one among many examples showing that privatization means exploitation and expropriation of common goods and interests.

A traditionally high autonomy of faculties within university should be decreased and university itself more centralized. Such requests are coming also from international and European university authorities. One could think that this form of local autonomy should be rather fostered. On the contrary – it is understood as a bad heritage from bad previous times.

From radical neo-liberalism as the imposed and accepted ideological base of social structuration a research policy is derived that exemplifies the orientation toward the same goals. As in the education, orientation toward fast, immediate application is becoming prevalent. As a consequence, there is no room for a broader reflection on problems of transformation of knowledge into technique and technology. Social sciences are following the same steps, to the extent that their proper subject-matter is about to disappear or to be relocated to natural sciences (neurology, biology). In this way even the construction of tools of critique has been prevented. If social phenomena are understood as biologically determined, they are exempted from critique as nature cannot be criticized.

Another conceptual transformation going on is translation of social issues into private psychological ones. According to Zygmunt Bauman this is a powerful mechanism used in postmodern societies in order to prevent critique and even more any possible social change. In his book *Modernity and Ambivalence*, published in 1991, Bauman stated: The most fruitful form of all privatizations was a privatization of human problems and responsibility for their solution. "Thorough, adamant, hard and uncompromising privatization of all concerns has been the main factor that has rendered postmodern society so spectacularly immune to systemic critique and radical social dissent with revolutionary potential... What does truly matter is that it would not occur to them to lay the blame for such troubles they may suffer at the door of the state, and even less to expect remedies to be handed over through that door. Postmodern society proved to be a well-nigh perfect translating machine: one that interprets any extant and prospective social issue as private concern." (Bauman, Z. 1991. *Modernity and Ambivalence.* Cambridge: Polity Press, p. 261)

In a transition society this general process of translation is on agenda in all spheres of social life. For example, unemployment (in Serbia unemployment rate is over 20%) is understood as an individual incapability or shame. Therefore an individual consulting or therapy is recommended in order to adopt an entrepreneur attitude. Theorizing and research along these lines are represented in main stream journals. Scientific competences of researchers are assessed accordingly. There is indeed a striking parallel in changes at societal level and publication in main stream journals: in 1989 there were 87.6 papers per capita, in 1990 already 108.7, in 2006 as much as 200.2 (see Lemarchand, G.A. 2007. Science indicators of Cooperation in Iberoamerica: The co-authorship of main-stream scientific articles. A long term temporal evolution's study (1966-2006) in: *Proceedings of VII RICYT Congress*, Sao Paulo, Brazil, in press). But there is more to be thought of regarding the increasing number of papers published in main-stream journals.

Other statistical data show decrease in number of scientific institutions. In 1990 there were 297, in 2005 only 163. The number of researchers is also decreasing: in 1990 there were 30 000, in 2005 only 22 000. A strong brain-drain is included in these numbers. It is assessed that about 250 000 to 300 000 highly educated people left the country in the last 20 years. Again, it is easy to recognize a powerful mechanism of strengthening the already powerful scientific centers.

Though the methodology of assessing the growth via GDP is highly biased (actually positively biased according to liberal criteria), it should be mentioned that GDP is falling too: in 2000 it was 3516 Euro, in 2005 only 2836 Euro per capita.

Research policy and state funding in Serbia are oriented toward strengthening the already dominating research cultures. Though the state investment in scientific research in Serbia is approximately 0.36 % of annual government budget (strangely enough the official data are not published, but can be obtained upon request and against payment from the Statistical Agency of Serbia), which is less than 20% of public investments in scientific research in EU countries, even those small sums shall contribute to the strengthening of existing scientific power. In other words, periphery is contributing to the maintenance of hegemony of the most powerful. There is no wonder that hegemony in all forms is getting stronger and stronger.

The case of social sciences is especially enlightening, and among them psychology is getting an unprecedented role. It is functioning as a colonial science by virtue of interpretational colonialism – imposing the concept and explanatory schemas of a North-Atlantic psychology as universal norms of psychological functioning and social organization. As transition societies are defined as societies hurrying toward market economy and liberal social system, psychology is seen as an easily available tool for instant fabrication of liberal selves with an individualistic and pragmatist ethos. Psychology is becoming more and more a servant for narrowly defined, practical, but even political concerns. The service market is overwhelmed by endless offers of psychological workshops to deal with: war and other heavy conflicts, unemployment, trauma, leadership, partnership, parenthood, depression, learning problems etc.

Yet, the case of psychological dealing with conflicts is very striking. “The basic issues of power and social conflict are not only ignored, but worse, are conceptually redefined as part of an individual psychological illness…Exaggerating a little bit, one could say that we first have war and destructions and then we offer individual therapy instead of social change. We have to avoid a cheap psychologization of political problems and make sure that the sociopolitical aspects are not ignored but actively recognized and integrated into our work. In other words, where confronting trauma arising out of man-made disasters, we have to deal with the individual and the society, with the material and spiritual aspects of life, with politics and economics, justice and psychology.” (Becker, D., 2000. Dealing with the Consequences of Organized Violence in Trauma Work. In: *The Berghof Handbook for Conflict Transformation*. Berlin: http://www.berghof-center.org/handbook, retrieved July 2002)

Psychologization of social issues is rather a general attitude of psychology as science. It is a consequence of its embeddedness in an individualistic culture, on the one hand and of imposition of such culture by all kinds of means – hot and soft alike as a norm of individual and social development, on the other hand. It is a postmodern variation of colonialism.

To sum up the position of science in transition societies:

- transition societies are a new field to demonstrate the power and attractiveness of neo-liberal model of society
- they serve to strengthen or recover the legitimacy of that model
- as transition societies are expected or even forced to abandon or destroy all structures inherited from socialist period, this politics serves to diminish prospects for an alternative social project
- transition societies serve as a huge social laboratory which demonstrates the power of new psycho-social technologies which can fabricate desired selves or install new social systems
- by different means social canalization, science policy, funding schemas, publication strategy, and by immanent means of scientific theorizing neo-liberalism is expropriating a possible place of critical reflection

Prospects for an alternative:

- critical reflection of science in spite of its success and vast applicability
- fostering and active searching for alternatives instead of reproduction of existing structures
- questioning of the existing goals and means of social development
- broadening the perspective of assessment in terms of space and time
- re-translation of private issues into social ones
- re-socialization of privatized concerns

Another science, other technologies, and first of all another society are necessary. To make them possible would require a joint action from the bottom at different places and within different spheres, including science. A viable alternative is possible only as a global process, as a proper and therefore different globalization. Another globalization means – contrary to the ongoing globalization of particular interests – a globalization of common, long term interests, including necessarily also interests of future generations.

Academic Freedom in Research: The Role of Public Sector for a Social Effectivity

Denis Jouan

Academic freedom in research : the role of public sector for a social effectivity

Denis Jouan (France)

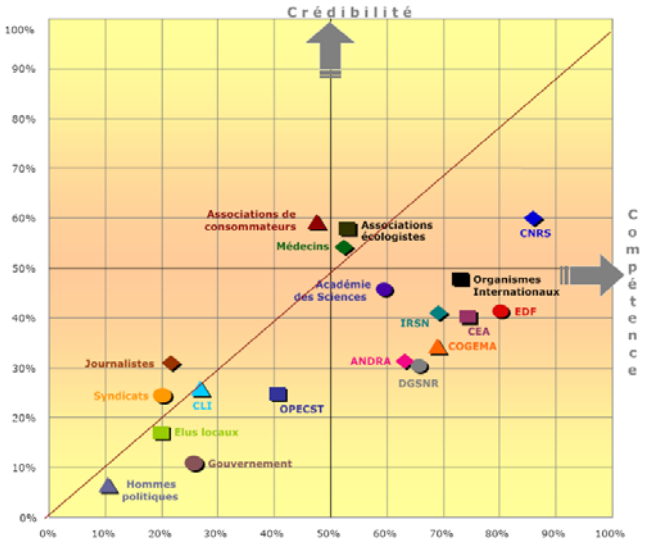
SNCS national scientific researchers trade union

Beside knowledge progress,

Research and high education public sectors can play a role not only for innovation and education, but also as a reservoir of expertise for civil society, or in a direct partnership with it.

Some specific characteristics are better

Berlin, 31th May 2007



Not all public structures are the same

Barometer 2006 IRSN (radioprotection, nuclear security)

The goal and the means

- Globalisation claim: « innovation and fundamental research are the same »
- But knowledge progress (« blue sky research ») remains more general than economical interest
- Knowledge frontier => peer review. Modern reforms: get maximal external control on this, to make it closer to quantitative production process
- But this academic intellectual freedom, inside a genuinely plural and contradictory debate, is also a factor of the social credibility of the « expert », and then one of the social effectivity of public bodies

Note: Knowledge is not the use of it, applied research is not basic research.
Most of the troubles in the last decade are not linked to scientific research but to commercial choices

Some examples

- France: comité national de la recherche scientifique: 2/3 elected (some said « a marxist system »). Deals with CNRS assessment. To be replaced by a structure nominated by the minister, and « private foundations ».
- Universities: president is elected internaly, by comities elected. Going to disapear in new president reforms
- UK: going to a fully metric evaluation + ext comitees
- Europe: most of the financing concentrated in agencies ? (happened already in Greece during the last 15 years)
- Also: jobs increasingly precarious and « mobile »

Globaly: being more and more dependent, academic freedom disapears, **public service becomes only a ressource.**

Innovation = knowledge research

- Global Propaganda: food for mad cow or antibiotic use for chicken are research (even tchernobyl's fools were doing « research »).
- Not at all the same : looking for understanding universe or mankind history or society is very different from these business side activities. It is INDEPENDANT from financial interest
- Global reforms: economy will strictly control all areas of research

→ It will be de facto RESTRICTED to the innovative side

- And the production strictly managed (human ressources, production quantity and content): « culture of PROJECT » !

Administrative versus democratic

Science-society approches in public research

- There are examples of expertise going wrong because being done inside an **administrative logic** (hierarchy), by lack of plurality and internal contradiction (recently: ~social deviance is an illness)
- Science-society (cityzen) relationship is becoming a priority. But tend to develop and restrict to an administrative approach (IHEST, CNRS strategy..), in particular « democratic » bodies among research are not recognized

➔ Democratic bodies should be a natural support for « free » discussions between public research and citizens

Public service versus private citizens assoc.

- Public service and social regulations are not identically present in all developped countries.
- In particular private structures (foundations, associations) sometimes replace it (maximal market, minimal state, less taxes, more charity)
- Citizenship private structures should not be a way to avoid a social regulation that the state should support (example: poor neigborhoods)

mobility

- **Freedom is good**
- OECD 2003: « there is a correlation between mobility of workers and multifactorial increase of productivity »…. what kind of philosophy is it ? (associated with precarity, positive factor, root of the «management by projects »)
- European comitee livre vert: « a ressource of researchers ready to respond to the needs of the socio-economical structures »
- ➔ future public researcher: temporary worker waiting for filling in a project decided by business or private structures
- Military research model: « technology investment and intellectual capital advantage… attract and retain top-quality scientists in defense programs,… » : this is qualitatively different from what a public service, directed at people, could offer
- **Flexibility-slavery** is bad (for any worker)
- Destroy intellectual freedom in academic public service, Risk of Brain drain
- Solution ? OIT: « create work were people do live »
- Conclusion: beware that mobility as a constraint is not a progress, it can also be a tool for globalisation powership, for instance against intellectual freedom of academic world

Research strategy

- generally speaking, equilibrium between politic and business is endangered by globalisation. Some even claim that market will solve everything.
- Looks like « end of history », inequality is accepted, and no more master-slave problem, juste technical economy in market.
- Public service and social regulations are not present identically in all developped countries. Evolution should be toward an **equilibrium** market/state **business - public service – citizen associations**
- Research: equilibrium applied/basic research, leaving a true public research with sufficient scientific/social independence (=> internal democracy/collegiality), => structure and means

It will be difficult to fight the brain washing:

➔ let's be DINOSAURS of public service against the (monsters of) retro-modernity, aiming at the freedom of mankind through the one of the market/business.

The Situation of Students and Young Researchers

Prof. Frederico Carvalho, André Levy

The Situation of Students and Young Researchers

Speech by André Levy[1], Frederico Carvalho[2], both Portugal

In our days there are clear signs that Humankind is at the crossroads. Global challenges of a pressing nature have to be faced in ways that engage society as a whole —rich and poor alike, whether geographically separated or living in one and the same country. Finding those ways is largely dependent on the construction of a knowledge based society — an end to which science shall necessarily give an essential contribution. Quoting the EU Commission Recommendation of March 2005 "(…) well developed human resources in R&D are the cornerstone of advancement in scientific knowledge (…)". Do we have the necessary resources and what shall be done to procure them?

Definitions and General Principles

Q1 What is a *researcher*?
According to the internationally recognised Frascati definition of *research* [1], researchers are described as p*rofessionals engaged in the conception or creation of new knowledge, products, processes, methods and systems, and in the management of the projects concerned.*
More specifically, this recommendation relates to *all persons professionally engaged in R&D at any career stage*[2], regardless of their classification. This includes any activities related to 'basic research', 'strategic research', 'applied research', experimental development and 'transfer of knowledge' including innovation and advisory, supervisory and teaching capacities, the management of knowledge and intellectual property rights, the exploitation of research results or scientific journalism.

Thus the characteristic trait of a researcher in ***stricto sensu*** is that of being professionally engaged in R&D work and in ***lato sensu*** that of being similarly engaged in any of a range of related activities identified above.
In the Oxford Dictionary of the English language, *profession* is defined as *paid occupation*, especially one that requires *advanced education and training*, a requisite obviously fulfilled by the research profession.
In this light it will not be incorrect to identify *researcher* and *scientific worker* although the reverse is not necessarily true.

A researcher in the course of his or her career will normally go through different stages corresponding to different sets of duties and responsibilities. It is useful to distinguish between Early-Stage Researcher and Experienced Researcher.[3]. The distinction is based on the full time equivalent duration of the period of research activity, including the period of research training. The experienced researcher must have at least four years of research experience or be in possession of a doctoral degree.

Q2 What is, in the present context, the meaning of the term *student*?
Once more quoting the Oxford Dictionary, a student is *a person who is studying for a degree, diploma, etc at a university or some other place of higher education or technical training.* In the

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following the term *student* in ***stricto sensu*** [4]might be identified with a person that is studying to obtain a university degree or diploma giving access to doctoral studies. The exact name of the degree and the curriculum associated will vary from system to system across the world — in the case of the new standard European Three Cycle system, a student would remain a student until he or she has finished the second cycle, i. e., has obtained a Master's degree without which he or she could not proceed to obtain a Doctor's degree. In the Two Cycle system, where the degree coming at the end of the first cycle generally through the attribution of a license gives access to the practice of a profession — a paid occupation —, and may give access as well to doctoral studies, the status of student would end there.

Assertion 1
The quality of *student* shall be limited to the period of higher level study and/or training preceding the acquisition of a degree or diploma giving access to doctoral studies.

Researcher is a worker engaged in R&D or an R&D related activity as a paid occupation, on terms defined in an employment contract involving adequate and equitable social security provisions in accordance with existing national legislation and sectoral agreements.

Assertion 2
Employment contracts shall involve either a direct financial relationship between the employer and the researcher or an indirect one when a third party — the funder — is responsible for providing and transferring to the employer — qualified as the funded institution — the funds necessary for carrying out the research work agreed upon under the terms of the employment contract. This shall apply to all those bodies which provide funding (including stipends, awards, grants and fellowships) to public and private institutions, including institutions of higher education.[5].

Q3 Is employment stability in itself a value that deserves protection?
The EU Council Directive of 1999 on fixed-term work [6] recognises (quote) *that contracts of an indefinite duration are, and will continue to be, the general form of employment relationship between employers and workers (…) contribute to the quality of life of the workers concerned and improve performance*.(end of quote). This is recalled in the European Charter for Researchers as follows: *Employers and/or funders should ensure that the performance of researchers is not undermined by instability of employment contracts, and should therefore commit themselves as far as possible to improving the stability of employment conditions for researchers,*
At the same time there are reasons for saying (quote) [7] *that fixed-term employment contracts respond, in certain circumstances, to the needs of both employers and workers* (end of quote).
The principle of *employment stability* is not used here as implying necessarily the existence of a permanent contract but rather as opposing abuse arising from the use of successive fixed-term employment contracts or relationships. Measures to prevent abuse should be enforced by establishing the maximum total duration of successive contracts and the number of renewals of fixed-term employment contracts.
There is however inside the scientific community a current that tends to single out scientific workers — even experienced researchers — as a class of professionals to whom such restrictions should not apply for reasons that had to do with the specific nature of R&D work and the demonstration of the necessary ability to succeed in a scientific career. This opens the door to extensive abuse of junior research workers often considered as students undergoing extended

periods of training even when actually contributing to a large extent to the scientific output of research groups and consequently to their funding as well as that of their home institutions.
Also, instability of employment tends to collide with career development, freedom of research and eventually with adherence to recognised ethical practices and fundamental ethical principles. It is an impediment to the development of normal family life, human relations and affectivity. Arguments in favour of the supposed benefits or even the necessity of employment instability are advanced not only in the case of researchers, especially young researchers. They are in fact used under different but related forms to forward precarious working conditions in the labour market in general as part of the neoliberal offensive against workers rights.[8]

Q4 What is the meaning and the value of researcher mobility?
Sharing or exchanging ideas and information among research workers is as old as scientific endeavour itself. Sometimes as an aspiration, sometimes as effective interchange it has grown naturally in importance as the intensity of R&D itself has grown and continues to grow. Researcher mobility is an important means of enhancing scientific knowledge and professional development at any stage of a researcher's career and as such should be valued by employers and funders. True mobility should take place within an adequate contractual relationship between researchers and their employers and not be a source of employment instability. Moving around, changing one's place of work, study or training by individual decision; looking for better work conditions, or plainly looking for work; wishing for personal reasons to change one's field of work, is something different from "researcher mobility". It has different causes and different effects. The movement of researchers between regions or countries with similar levels of scientific and technological development must be seen in a different light than the migration and eventual expatriation of early-stage researchers from poor countries to the technologically developed societies. The ideas of co-operation and competitiveness are not alien to this context where the future of a vast majority of humankind is at stake.[9]

Assertion 3
Mobility of researchers, particularly of early-stage researchers is an essential instrument for career development. It may take many forms — sharing and exchanging ideas and information, training opportunities, establishing personal contacts —should be implemented in an adequate framework of contractual relationship with the employer or funder and should not promote instability of employment.

Q5 How to improve the working conditions of young researchers?
A clear distinction must be made between *student* and *researcher*. Researchers are often not considered as workers but as students that, consequently, do not enjoy rights and social benefits in accordance with the existing national labour codes and collective bargaining agreements. This opens the door to an inadmissible exploitation of their workforce that take place even in the so-called developed countries. Once this situation is corrected researchers will be covered by general and particular measures of protection foreseen in the legislation including the right to unionize for the collective defence and improvement of their working conditions.
Researchers, especially experienced researchers, following recruitment may find themselves in a position where they are denied the necessary means to carry out research as planned, for lack of adequate funding and technical support. This situation is typically to be found in the public service and appears to be especially serious in underdeveloped countries and in countries in the middle range of development but occurs as well although in relatively minor degree in the developed societies. It is often connected with the incapacity or lack of interest of governments to define development goals and promote an adequate functionality for the national scientific and

technical infrastructures. The situation is naturally different in the private sector where the problems of a healthy research environment and those that have to do with the orientation of the research effort deserve a separate discussion.

There are several other questions to be asked, that deserve attention and debate, and that will possibly be answered differently depending on whether the researcher works in the public or in the private sector. A few relevant ones are the question of intellectual property rights, role and responsibilities of supervisors, co-authorship, assessment of professional performance, scientific fraud and “whistle blowing”.

Contemporary Praxis

Young researchers sustain a significant fraction of the experimental and laboratorial research conducted in universities and labs, yet suffer from the ails of lack of security and future prospects. Whether they are regarded as professionals or advanced students is reflected in the origin of their funding. Consider those obtaining their PhD. We find, just within the European Union, a variety of situations: they may be funded via a labour contracts and entitled to social security and unemployment subsidy (and thus recognized as professional workers, in training). This is the case for instance in Denmark, Sweden, or Germany. Or, as in Italy and Portugal, they may be funded via a grant having limited or no access to social security, being thus largely treated as students. A few countries have a mixed system, whereby during the first couple of years PhD candidates receive a grant. After an intermediate exam, they conduct the bulk of their research, during which time they receive a labour contract. This 2+2 system is now adopted in Spain and Greece. Overall there is a lack of uniformity in the way these researchers are regarded, driven by the ambiguity of their status both as a professional and a student. In truth, they are professionals in training; but their training is performed by working.
In the USA, graduate students enrol in their graduate programs as students. However, as grants and fellowships are rare, most of them require some form of income, frequently dispensed by the university in the form of teaching, research or graduate assistantships. Graduate students have in this case become not only important for conducting research in these schools, but also in guaranteeing teaching and other academic functions.
This academic staffing crisis [10] is characterised by the American Federation of Teachers (Higher Education Section) as follows (quote):
No trend has changed the face of higher education (in the USA) more than the shift away from a corps of full-time, tenure-track faculty to a contingent instructional workforce. That work force includes part-time/adjunct faculty, full-time, nontenure track faculty, and graduate employees. Together these employees now make up an amazing 70 percent of the 1.3 million employee instructional workforce in higher education.
Graduate students are thus considered by the same institution as students and laborers. This dual category has been used by the universities to deny them union rights, claiming they are students. It becomes clear that the dual nature is artfully used to advance an economic strategy, rather than following pedagogical or academic considerations.
The AFT continues saying: *This growth of contingent labor represents a major and purposeful effort to reduce the number of full-time tenured and tenure-track faculty partly in response to the failure of most American states to provide adequate funding for their colleges and universities. But it mirrors as well the movement to run higher education institutions "more like a business." The traditions of tenure and shared governance, which guarantee due process and academic freedom, and which give faculty a major role in academic decision-making, run counter to a command-and-control business model. The fact that large numbers of academic workers are hired without effective job security, without decent salaries and benefits, and without a*

guaranteed role in academic decision-making is of great concern to those of us who value a free and independent academy (end of quote).

Looking to the future

When looking to the future, the importance of the attitude, i.e., of the way of thinking and behaving, of the present generation of students and young researchers, cannot be overstated. Their number and scientific quality, training and level of experience must also, naturally, be given due consideration.
In this respect and in average terms one can find presently abysmal differences between different societies, regions and countries. Although scientific excellence can be found almost everywhere their existence is not necessarily the only and perhaps not the most effective precondition for entering the crucial path leading to sustainable development. The contribution of the present generation of young scientific workers will be indispensable for defining and implementing a clear strategy of sustainable development, where co-operation must be preponderant over competition.

A most important step will be the universal recognition of researchers as professionals enjoying the rights stipulated for workers in general in accordance with existing national legislation and with national or sectoral collective-bargaining agreements, comprehending the references justified by the specific requirements of R&D work deemed essential for successful research performance, such as, among others, the right to sabbatical leave and the portability of pension rights when changing jobs, work places, or interrupting one's career.
Collective action of researchers and their right to unionize are indispensable instruments to defend or improve their situation as workers as well as to influence the management and resourcing of the science system and the orientation and applications of science and technology for the benefit of humankind. In this regard, WFSW and other transnational organizations (such as EURODOC, a confederation of national young researcher organizations from Europe) may play an important role.
Researchers individually and collectively must give particular attention to ethics in science and the development of a conscience of social responsibility. Social responsibility of the citizen-scientist involves, as a service to the community, a special effort to communicate with fellow citizens with the aim to contribute with her or his specialized knowledge to the making of a public opinion conscious of the problems facing today's society and of the pressing need to find solutions which are socially and environmentally acceptable. The future of our children or grand-children depends on it.

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[1] *in* Proposed Standard Practice for Surveys on Research and Experimental Development, Frascati Manual, OECD, 2002.
[2] See COM(2003) 436 of 18.7.2003: *Researchers in the ERA: One profession, multiple careers*, and Commission Recommendation of 11 March 2005 on the *European Charter for Researchers and on a Code of Conduct for the Recruitment of Researchers*, Annex, Section 3, Official Journal of the European Union L 075,Volume 48, 22 March 2005 (text with European Economic Area relevance)
[3] Distinction adopted in the *European Charter for Researchers (see end note 2)*
[4] In *lato sensu* a researcher may be seen as a student for life
[5] See the *European Charter for Researchers and Code of Conduct for the Recruitment of Researchers*, Annex, Section 3
[6] Council Directive 1999/70/EC of 28 June 1999 concerning the framework agreement on fixed-term work concluded by ETUC, UNICE and CEEP, Official Journal of the European Communities 10/7/1999, L, 175/43
[7] see endnote 6

[8] The consequences of precarious employment conditions for researchers and for R&D work has been a subject of debate among scientific workers in Europe and elsewhere, particularly, in the USA. In France UJICT took the following stand in the framework of the "Sauvons la Recherche" campaign (quote): "in all branches of science including the Humanities and Social Sciences, candidates to a doctor's degree shall have the status of paid employee with all the social guaranties inherent. The career of the young scientific worker must be from the start subject to regulations guarantying that once the degree is obtained, the researcher will have access to a stable employment adequately paid with an attractive salary in accordance with a legislation or collective bargaining agreement, containing explicit reference to the profession (end of quote).

[9] "Particular attention is paid by the WFSW to the problems of the development of science and society in developing countries. In these countries, world problems are felt particularly acutely and there are many unresolved difficulties both in the development of science and technology and in the situation of scientists, engineers and technicians. The WFSW actively supports a new world economic order which, among other things, would create new, more favourable conditions for the advancement of science and technology in less developed countries.
The democratisation of the conditions of scientific development is a basic way of tackling many of the tasks facing it. This is why the WFSW pays special attention to the greatest involvement of women and young scientists in the scientific process and considers it essential to determine and solve the problems this raises." Quotation from the WFSW Constitution with the modifications adopted in the General Assembly of Athens (1969)

[10] see the site of the American Federation of Teachers (http://www.aft.org/topics/academic-staffing/index.htm)

Working Group Results: The Situation of Students and Young Researchers

Adrian Fischer

Results of the Working Group: Situation of Students and Young Researchers; Invitation to the INES-Students Forum

By Adrian Fischer, Germany

Brief summary of what we discussed and decided to do, please write down more ideas in the forum!

First we clarified the definitions of the different stages in a scientist's carrier: "Student" as someone studying for a degree, a "young researcher" as someone in the postgraduate stage who will become an "experienced researcher" after 4 years of practice.

So we want to reduce the ambiguity between students (not paid) and young researchers (paid). We need proposals on how to do that.

We discussed about the "mobility-problem": Is mobility a good itself because it increases the scientific output? What are the downsides of mobility and where are the limits of what someone can be expected to do? How is it possible to protect the private life of the researchers from "flexibility slavery"?

In effort to write the paper criticising that the European Charter for Researchers (http://ec.europa.eu/eracareers/pdf/am509774CEE_EN_E4.pdf) is not implemented in the EU states, everyone of us should collect some ideas that he/she thinks should be part of the paper. For example we could collect a number of cases in which obvious against the charter are documented. We should talk about the way we could try to exert pressure on the governments, for example by sending them the paper, by way of interpellating the government or single parties.

How to register at the INES-Students Forum

1. Go to www.ines-students.de
2. Klick on "Forum"
3. Klick on the button "register" at the top of the site, Agree to the terms and the fill out the formular.
4. You have to enter the Code you see in Black letters and grey background to protect the forum against bots that register automatically multiple times .
5. After submitting you will receive an email with a link in it which you have to follow. Your profile will be activated and you can write new topics and answer to other topics in the forum.

Militarisation of Science: What It Is, and How Can Scientists Face It

Dr. Stuart Parkinson

Militarisation of Science: What it is and how scientists can face it

Dr Stuart Parkinson

http://www.sgr.org.uk/

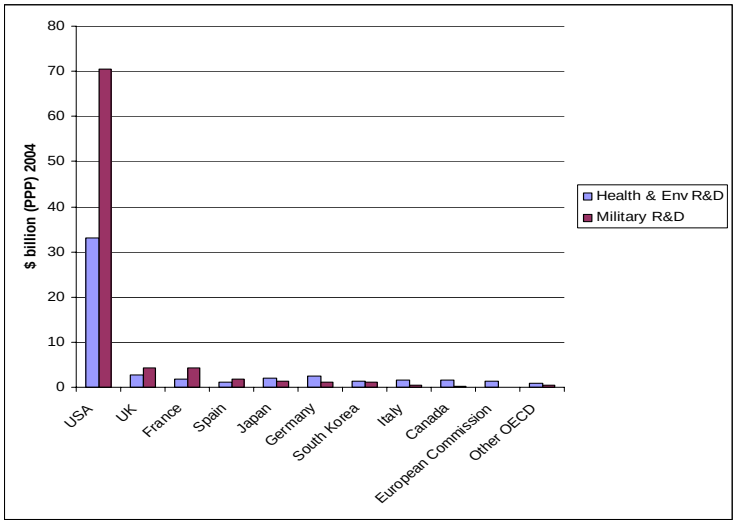
Military R&D: global context

- Government R&D spending in industrialised countries (2004)
  - Military: $85 billion
  - Health & environment: $50 billion
  - Renewable energy: <$1 billion

The role of the USA

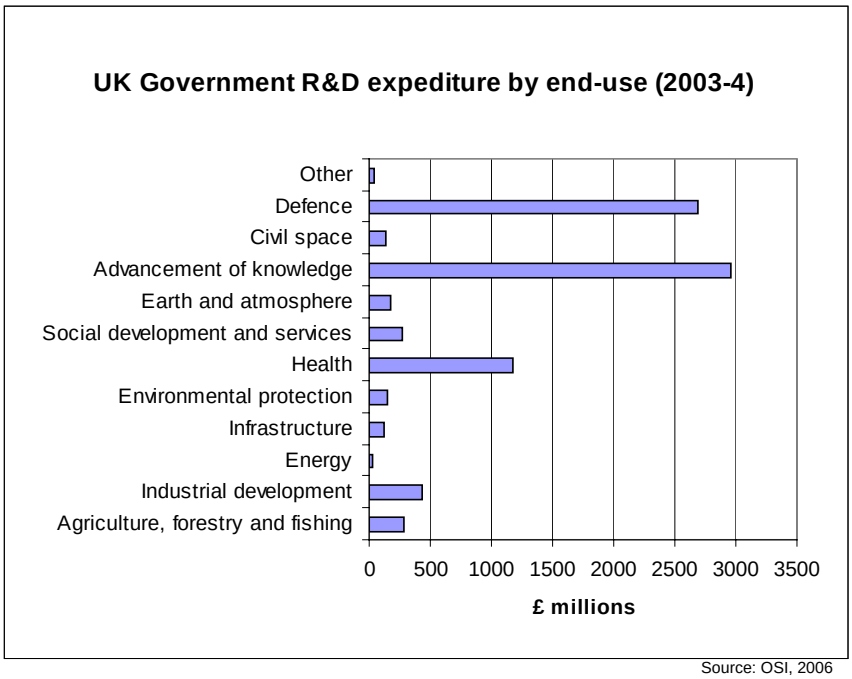
- US percentage of world government R&D
  - Military: 83%
  - Health & environment: 66%
  - Renewable energy: 26%
- High level of US military R&D spending encourages others to increase spending – even allies

Military v Health & Environment Government R&D in 2004



Source: AAAS, 2006

UK case study



Source: OSI, 2006

Underlying security strategy

- Government security strategy based on:
  - High technology, especially ‘networked’ technologies
  - Use of military force/ weapons
- Major role of military corporations
- Involvement of scientists/ engineers essential

Main areas of UK Military R&D

- General munitions and explosives
- Cross-cutting technologies, e.g. sensors
- Command systems, e.g. computing
- Close combat support
- Counter terrorism
- Robotic/fixed wing aircraft and helicopters
- Maritime weapons and vessels
- Complex weapons
- Emerging technologies, e.g. nanotechnologies
- Chemical, biological, radiological and nuclear (CBRN)

Military corporations

- Majority of military R&D (including government-funded R&D) takes place within industry
  - Represents a large subsidy
- UK home to major military corporations
  - BAE Systems
  - Rolls Royce
  - QinetiQ

Military & UK universities

- Numerous paths for military funding of R&D in universities – many unquantified
- Government schemes
  - Through military labs, civilian Research Councils etc
- Corporate schemes
  - Large programmes run by Rolls Royce, QinetiQ
- Joint government-industry schemes
  - Defence Technology Centres
  - Towers of Excellence
  - Defence & Aerospace Research Partnerships

Military & UK science education

- Military corporations are especially involved in sci/tech education
- Schools
  - provide sci/tech curriculum materials
- Colleges
  - Apprenticeships, especially engineering
- Universities
  - R&D funding influences on teaching

SGR's work

- 'Soldiers in the Laboratory' report (Jan 2005)
  - Detailed report on military sci/tech, especially in UK
  - Highlighted scale of military R&D, lobbying networks, ethical & political issues, shortage of sci/tech resources in other areas etc
- Ongoing research on:
  - New UK government/ industry programmes
  - Growing involvement in universities
- Dissemination/ lobbying
- Alternative careers information/support

Suggestions for workshop discussion

1. Raising awareness of the issue
2. Researching military R&D in other countries
3. Alternative careers information/support
4. Military influence on European Commission FP7

Working Group Results: Militarisation of Science

Kristin Kropidlowski

Results of Working Group: Militarisation of Science – What It Is and How Scientists Can Face It

By Kristin Kropidlowski, Germany

What does "Militarisation of Science" mean?

- No clear definition, quite a fuzzy concept
- But in general it means: Military involvement in Science, Engineering and Technology (SET)

Brief Background

- SET have been involved with military objects in wealthier countries for hundred of years
- The path of militarization of science increased with Manhattan project in 1940
- The military expenditure fell after the end of the Cold War
- But increased again after September 11th attacks and the followed so called "War on Terrorism"
- In 2004 military expenditure was more than 1 trillion US Dollar
- UK is after the USA the 2nd largest spender (approximately 1/3 of all public money goes to military Research & Development (R & D)

So …

- The thinking beyond is a narrow concept of security which follows the idea that superiority of military force is needed to guarantee security (visible in justification of military expenditure as required for national defence)
- The military sector has a very large and disproportionate effect on SET

Scientists for Global Responsibilty (SGR) and so also Stuart Parkinson, who is since 2003 the executive director of SGR tries to

- uncover the influence of military on SET
- promote ethical (alternative) careers
- lobby work including renewable energy and energy efficiency

Workshop discussed

- The awareness issue and here including different “peace” education/university programs, e.g. in Geneva and Germany

… figured out that no institutions like SGR exist at least in India, Switzerland, France, Germany

Recommendations to face the problem

- SGR concludes in general that we need a broader security approach that also involves issues like climate change, global poverty
- Try to raise awareness by e.g. obligatory ethical courses in universities, maybe even schools
- Transfer the knowledge also to professional institutes
- Use the ability of scientists to analyse to help to develop open, transparent and democratic science, sort of sustainable peace science
- Show option for alternative career path

Perhaps it is an incentive that in the survey the UK publishes every year on the top job positions/careers the military hasn’t been involved for the 1st time within the first three, Instead: 2. environmental careers, 3. health, and on the 1. BBC.

Democracy in Science: Who Must Participate in Deciding What Should Be Aim of Science? How are Scientists to Be Associated in the Management of Science?

Prof. Janine Guespin

Democracy in Science: Who Must Participate in Deciding What Should Be the Aims of Science? How Are Scientists to Be Associated in the Management of Science?

Is Democracy an Issue in Relation to Science? And if so, What Kind of Issue?

Speech by Prof. Janine Guespin, France

If you mention democracy in science to French scientists of my generation, they will immediately recall the golden age of French research, when the main scientific organisation, the CNRS was democratic, that is was controlled and geared by the scientific workers themselves. Evaluation of researchers, but also of research was performed in commissions whose majority of members were elected by their peers. The underlying idea was that scientific workers were best suited to know what was best for research.

Little by little, democracy was restricted in the leading institution of the CNRS. The role of the commissions was reduced to the mere evaluation of researchers, and the elected participants of the commissions were progressively diluted by members nominated by the staff emanating from the state. Now institutions entirely composed of anonymous 'experts' tend to play more and more important roles in directing research, by evaluation and money granting. And what can be the scientific value of a researcher who has no money? So now, democracy in the scientific organisation in France is no much more that the ghost of democracy.

The claimed reason is that trade unions, (who present members to the elctions) are not driven by the search for 'quality', but by the mere defence of the acquired positions, leading to mediocrity.
But this is what is claimed. We must see who the experts are, and what kind of science they fund, to understand that all this has **nothing to do with the quality of science, but with its aim.** And actually, all this decrease in democracy is concomitant to an increase in the driving of science to become a mere provider for innovation as was shown sooner.

But thus it appears that the decrease in democracy in the management of French science, is not due to the mere abhorrence of the leading classes or the European technocaste, for democracy as such, but results from the decision to make science become an efficient way of making profits for the big industry 'the knowledge economy'. What conclusions can be drawn of this?

Science and research have been deeply transformed and in the mean time, young scientists have been also 'formated', to fit the aims of the liberal economy as described in the Lisbon strategy. They are now used to be deprived of the decisions concerning science policy, to consider normal that these decisions are entirely to be taken by the market or it's political representatives. This leads to the present catastrophic state as described sooner.

But this means also that it is neither useful nor possible to simply go back to the old concept of democracy in science as exemplified by the 'golden age' of the CNRS. To be able to reach a new form of scientific policy cannot be achieved by scientific workers alone. But it cannot rely on an external decision alone either, as the present state exemplifies well. To change

gears in science policy, to go toward a science both efficient, active and addressing all problems facing society, **requires now a quite new form of democracy**; A democracy where scientists and citizens exchange, a democracy where scientists become also citizens, and citizens become more involved in science policy.

This required dialogue is very difficult to achieve. Thus, today the conference is mainly directed toward scientific workers, and in two months there will be in France an international conference mainly directed toward GNOs and citizens.

This difficulty results mainly from the very scientific policy of the Lisbon strategy, where lack of transparency is the rule, where every thing is done, through the European Research Era, to convince scientists and citizens, that good science is competitive innovation, and that **they must therefore confide in the experts**.

To evade from this vicious circle is a necessity if one wants science policy to change. Meanwhile, evading it should increase further ability to evade it, creating now a virtuous circle. But how to create the need ? How to start the process? This should be the aim of the discussion in the workshop in democracy in science policy.

Working Group Results: Democracy in Science

Prof. Janine Guespin

Working Group Results: Democracy in science: Who must participate in deciding what should be the aims of science? How are scientists to be associated in the management of science?

By Prof. Janine Guespin, France

I stated this morning the reasons why I think that democracy is required for science policy.

We could have a short discussion on this, but I propose that we mainly focus our discussion on two topics: **what kind of democracy**, and **how to achieve it**, what can be done now?

To start the discussion I will throw in a few proposals.
Democracy in science policy must involve both scientists, and citizens:

Does everybody agree?

What are the main difficulties? (apart from the political will of the leading calss)

The lack of 'scientific knowledge' of the citizens?

The lack of 'citizen knowledge' and feeling of scientists?

The lack of habit to exchange ?

The lack of will to get this democracy

Arising from scientists?

Arising from citizens?

Should they be together or in separate instances? Are the panels of citizens the solution**?**

Can we use actual forms of administration of research to get better democratic practices or do they need a complete change of political culture? At what levels of science management?

Which Science and Research for What Society: Service Publics Versus Privatisation of Knowledge

Dr. Seiji Yuasa

Social Responsibility of Scientific Workers: The activity for Adopting the Documents, "The Declaration of Rights and Status of Researchers" and "The Ethical Code of Researchers"

Speech by Seiji Yuasaan, Japan

Scientific workers are responsible for establishing a lasting peace, since science is the basic component of world civilization, and scientific development has led to increasing comprehension of the surrounding world and qualitative improvements in the material existing of human kind. Nonetheless, many of humanity's problems remain unsolved. There include problems inherited from the 20th century and those which have arisen in the contemporary era – it is the threat to war in the presence of huge arsenal of weapons of mass destruction, especially nuclear weapons, which would lead to a total annihilation of world civilization.

Scientific workers must understand the nature of the problems facing our humanity and the best method of solving them on the basis of ***the absolute view of life*** (= Human beings evolved in the monophyletic form consist of the one and only species, namely there is no biological difference among human beings. Therefore no discrimination must exist under every social condition, meaning that everyone has equal opportunity for one's existence). Scientific workers accordingly must recognize their social responsibility to wage an active struggle at a national or international level of science and technology to be used only for peaceful purpose and for humanity's benefit. Only thing is to prevent the annihilation of human civilization resulting from the abuse and/or misuse of science, e.g. nuclear weapons and other arsenals, environmental destruction, Yakugai (drug-induced damage), and biological and chemical contaminations. It is strongly advised that all the scientific workers must discharge their obligations, "must do" ("commission") and "must not do" ("omission"), as the inescapably social responsibility. We must regard an active struggle in defense of the profession and human rights of scientific workers, which are necessary to fulfill their social responsibility.

The Japan Scientist' Association (JSA) regards the widest understanding and popular acceptance of science in developing humanity as the primary condition for creating a new world in the 21st century. The JSA herewith plans to publish the following two documents: (1) The declaration of rights and status of researchers and (2) The ethical code of researchers. The present article, based on the tentative translation of the above version 5, is to briefly introduce what the JSA intends to describe in the documents.

1. Scientific workers' rights in Japan

The Japan's economy has been pressed to greatly change so as to meet the prolonged depression and the world globalization pressure, for which the government, under a neo-liberalism policy, has been carrying out various reform plans in the name of "structural reform". The government, on the one side, has realized the policy of the establishment of a state on the basis of science and technology, which is to overcome the above depression and globalization problems by creating a so-called new industry in the presence of the key science and technology. On the other side, however, the preponderant distribution of the competitive funds into the above key research resulted in the budgetary restriction to the other area such as fundamental science, human and social sciences, and research foundations, which brought about the enlargement of the gap of research conditions and the processing the lack of coordination of research system including the instability of researchers' status. Such environment gives rise to great distortion for developing the real science and technology in Japan. Furthermore, the economic circle takes advantage of the US's military policy, proposing that science and technology should be applied to military purpose. Accordingly the government describes "Security of the land and society" in a new science and technological manifest, strongly suggesting the propulsion of military research.

On the other hand, under the governmental line of a so-called reform plan, all the national institution and university were transformed into a corporative management system (started 2004), which gave rise to the hard control of the institutional management and its centralization, resulting in infringing the academic and research freedom, destroying university autonomy, and making scientific workers be only under the administration and the top-down management.

The local government-run university and institute are also moving to a corporative management system as the state-run ones did, which also causes the infringements of the faculty members' rights and status by forcedly carrying out the institutional integration and abolition, and the intensification of management.

In private university, their departments and courses have been becoming downsized and/or abolished on the pretext of the difficulty of university management on the basis of decreasing the number of incoming students and the competitions among universities, resulting in producing many cases of the infringements for faculty members' rights. In private enterprise's management, the devastation of working place and technological discontinuity (because of many part-timers) and the competitive supremacy in the name of the market-orienting principle gave the corruption and lack of morals in all working places, resulting in a number of scandals and serious accidents, which have brought about a social anxiety.

In all working place, the continuous revision of labor-relating laws and then enforcement of competition have been become intensified, resulting in "dividing" and/ or "discrimination" in a competitive world. Consequently, not only general workers but also scientific workers have faced serious infringement for their rights as human beings,

2. Guarantee of scientific workers' right and status, and determination of their ethical code

Truth brought by scientific research activity is to be public and social in terms of the universal property for human kind, and truth therefore possesses the extremely higher cultural value. The Article 23 (of the Constitution of Japan) describes "Academic freedom is guaranteed". Academic freedom is based not only on the Constitution, but also on the cultural value that develops universal property for mankind. Academic freedom is the freedom for finding out truth and the freedom for carrying out the academic and intellectual research activity, which includes the freedom for an academic opinion, publication, and education and teaching of own academic opinion. Simultaneously, the meaning and purpose of academic research is to contribute to world peace and the development of human welfare, which is now a social consensus. Accordingly, all the scientific workers in charge of scientific activity are properly and seriously responsible for society, which has made clear on the basis of the scientific workers' movements and international discussions after the last war. Scientific workers' rights and status should therefore be appropriate to conducting the above activity. This is because they must carry out their social responsibility for finding truth, creating and applying technology, educating truth to citizens, and distributing truth to society,.

Their professional and scientific knowledge and technologies have contributed to world peace and mankind's welfare, while they might bring about a life-and-death effect on mankind, if misused them. Accordingly, scientific workers as profession should bear the properly ethical responsibility for society as professional gatherings and/or individuals. Scientific workers must impose a proper ethics on oneself, which is to utilize their research fruits to world peace and the development of mankind's welfare.

3. Declaration of rights and status and set of ethical code – its significance of the today

After the last war, the world scientific workers have endeavored to establish their rights and status appropriate to carrying out own social responsibility, and therefore set their own ethical code. In Japan, the Japan Science Council asked the government to establish "The basic law for scientific workers" that should be written their betterment of working conditions, uplift of their rights and improvement of research conditions (1962), and then published its companion volume "Scientist's charter" that describes scientific workers' obligation (1980).

Internationally speaking, the World Federation of Scientific Workers (WFSW) adopted in its inaugural assembly "Charter for scientific workers" that makes clear scientific workers' rights and status, and ethics as well (1948), and also adopted "Declaration on the rights of scientific

workers" (1969). UNESCO, in the 18th general assembly, adopted "Recommendation on the status of scientific researchers" that should legally be described in member states (1974). The World Conference on Science adopted "Declaration on science and the use of scientific knowledge" and "Science agenda – Framework for action" (1999).

However, Japan, regarding to scientific workers' rights and status, and ethics, is extremely far from the contents described in the above recommendation and charter. In the beginning of the 21st century, the people place their great hope on the development of science and technology contributing to world peace and mankind's welfare promotion, for which the roles of scientific workers become increasingly important for them to seriously respond to their confidence. The JSA, herewith, by succeeding to our predecessors' historical legacy, wishes to publicize the documents, "The declaration of rights and status of researchers" and "The ethical code of researchers", which are appealed to all scientific workers in and out the country. It is strongly advised that all the researchers should endeavor to establish their rights and status, and ethical code in order to fulfill their own social responsibility.

4. Object to which the documents apply

Since the JSA consists of a small part of scientific workers in the country, it may represent the limited number of scientific workers. But, we strongly desire to occupy an honor place in an international as well as national society striving for the preservation of peace in the presence of scientific knowledge production and scientific movement, for which we all have to establish scientific workers' rights and status, and ethical code as well. True is that any scientific development is not expected in the absence of scientific workers' rights and status, and ethics.

It is strongly advised that the above documents should be applied to most of people in charge of research, regardless of their post of institution, the form of its institution, the form of employment, belongings to scientific society, scientific study discipline such as human, social or natural science, research such as basic applied research, or technological development, and educational research such as theory or practical utilization.

Advised also is that the contents of the documents should take into account by establisher and administrator. Since most of scientific workers are belonging to respective research institute or educational organization, those establisher and administrator must therefore endeavor to make scientific development healthy. When they find the danger that science may be abused and/or misused, they promptly publicize all the information and simultaneously take an adequate action to improve such the fault. Therefore, the establisher and administrator, on their own initiative, must observe "ethical code of scientific workers" proposed here as an important criterion, and "rights and status of scientific workers" as well. They must make the contents of the documents known to all the scientific workers belonging to their research organizations.

On the other hand, the scientific workers belonging to private enterprises have long been excluded from the discussion “freedom of academic and research”, since the institutions in private enterprise have historically founded to maximize economical effect. However, all the research fruits should basically be to be public and social, and therefore must not lock in the flame only for pursuing the personal profit that should basically be reduced to the nation’s life. The researches and their fruits, and technology that are developed in private enterprise are indispensable for the nation’s life. Speaking to natural science, the number of scientific workers and their research budget occupies more than 70% of all the national scientific workers. They really consist of a social hierarchy. Basing upon the social influence of their presence, we like to strongly appeal all the scientific workers belonging to private enterprises to incorporate the documents and their contents into their institutes.

In the present-day Europe, the enterprises’ social responsibility has clearly been discussed. Although enterprises purpose to pursue their profit, they simultaneously must assume the responsibility for helping the nation’s life, preserving environment, improving the quality of their products, and keeping a better working condition. Thinking of the presently happened severe accidents, falsification and fabrication for scientific truth, enterprises’ scientific workers in question are accused of their observation of responsibility and ethics. Accordingly, we are advising, by overcoming many restrictions available, that the scientific workers working in private enterprises basically accept the documents for rights, status and ethics of researchers. It is highly expected that, by all scientific workers over the world, the documents sincerely be welcomed in their own style.

5. Policy documents

The JSA intends to publicize the following two documents, which are tentatively:

The declaration of rights and status of researchers (ver. 5)

1. Guarantee of the fundamental human rights:

Researchers are guaranteed the fundamental human rights such as the right to live and civil rights, irrespective of thought, creed, sex, social status, institution, disorder and nationality,

2. Rights of seeking truth and publicizing the truth;

Researchers are entitled to seek truth and publicize the truth to the public. Also, they are entitled to criticize and accuse the concealment and falsification for the truth.

3. Rights of refusing and accusing the research in violation of humanity;

Researchers are entitled to refuse, criticize and accuse all the researches in violation of humanity.

4. Rights of enjoying satisfactory research condition;

Researchers are entitled to enjoy satisfactory research conditions that are necessary personnel, research funds, facilities, and healthy and safety.

5. Guarantee of status;

Researchers should be guaranteed the status suitable to them, which should not be diminished without fair reason.

6. Rights of receiving fair evaluation;

Researchers are entitled to receive fair evaluation. The evaluation should be objective, scientific and research-encouraged, and nor should be utilized for any discrimination in their status and/or treatment.

7. University autonomy and autonomous management of research institution;

University autonomy, and autonomous and independent management for all the research institutions are guaranteed, which should be maintained by the constant endeavor of the concerned in order to achieve a better condition. All the researchers are entitled to participate in research planning process.

8. Rights of educating successor;

Researchers are entitled to educate their successors, for which necessary conditions should be guaranteed.

The ethical code of researchers (ver. 5)

1. Contribution to constructing peace and welfare;

Researchers must conduct their works by awaking them to the meanings and objectives of scientific researches that contribute to constructing the world peace and human welfare. Researchers must not conduct any research in violation of humanity.

2. Contribution to developing science and technology;

Researchers must fight academic freedom, esteem creating research activity, and endeavor to comprehensively develop fundamental and applied sciences, and furthermore human, social and natural sciences.

3. Giving the research fruits to society;

Researchers must properly and honestly publicize all the research fruits.

4. Exclusion of an unfair practice;

Researchers, in case of publicizing research results, must not carry out an unfair practice such as fabrication, alteration and plagiarism. Researchers, by bowing to pressure and threat, must not represent research results falsely and voluntarily restraint on their publications. Researchers must not misappropriate research funds unjustly.

5. Self-pursuit of studies;

Researchers must keep highly scientific faithfulness and research quality. Researchers also

share scientific knowledge each other, and grow themselves up through their objective and theoretical discussions.

6. Fair evaluations;

Researchers, in case of evaluating researchers with regard to article's review, degree's qualification, appointment and promotion, must keep fair attitude on the basis of scientific and professional points of view.

7. Exclusion of human rights' violation such as sexual discrimination;

Researchers, under institutional and educational environments, must not violate human rights such as sexual discrimination and harassment, and academic harassment. Researchers must not leave them as they are.

8. Deference to internationality;

Researchers, in deference to the worldwide expansion of science, should endeavor to exchange their views internationally. Researchers, by cooperating with the worldwide researchers, endeavor to improve researchers' status and to spread the ethical code regarding to researches.

9. Distribution of scientific spirit and knowledge;

Researchers should endeavor to distribute scientific spirit and knowledge, ring an alarm to neglecting and misusing science, and carrying out unscientific consideration. Researchers let people and administrations make no mistake in case of policy determination.

10. Succession of scientific attitude to the next generation;

Researchers should scientifically educate young researchers, which must be to cultivate their critical spirit on the basis of the significance and objective of scientific research.

11. Solidarity with the people;

Researchers, towards constructing world peace and realizing better human welfare, should endeavor to act in cooperation with the majority of the people.

Social responsibility: Towards equalization of classes

1) **Deregulation**: “privatization” “all on one’s own responsibility”

- market-orienting economy (competitive principle)
  → “productism” or “resultism” (profit first or result first policy)
- out-sourcing policy

→ To minimize organs’ responsibility and carry out cost performance

- white color exemption policy: inapplicable to “blue color”
  → work hard to the grave without asking extra money and a holiday
- “overwork” results in “karo-shi (death due to overwork)”
  → For example: > 100h overtime work/month → known
  < 60h overtime work without overtime pay → known

2) **Discrimination**:”differential (gap-widening) society”

Such as thought, academic career, gender, ability, age, *etc*

→ isolation, reshuffle, squeezing and bulling, pay-pause, expelling, *etc*

Social responsibility: View and action

●The outlook on the world: “Peace construction”

→ Art. 9 of the Constitution of Japan

Aspiring sincerely to an international peace based on justice and order, the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of forces as means of settling international disputes.

In order to accomplish the aim of the preceding paragraph, land, sea, and air forces, as well as other war potential will never be maintained. The right of belligerency of the state will not be recognized.

●On the basis of “The absolute view of life”

Human beings evolved in the monophyletic form consist of the one and only species, namely there is no biological difference among them. Therefore no discrimination must exist under every social condition, meaning that everyone has really equal opportunity for one’s existence.

●Action:

“must-do” everything for peace construction ← encouragement (commission)

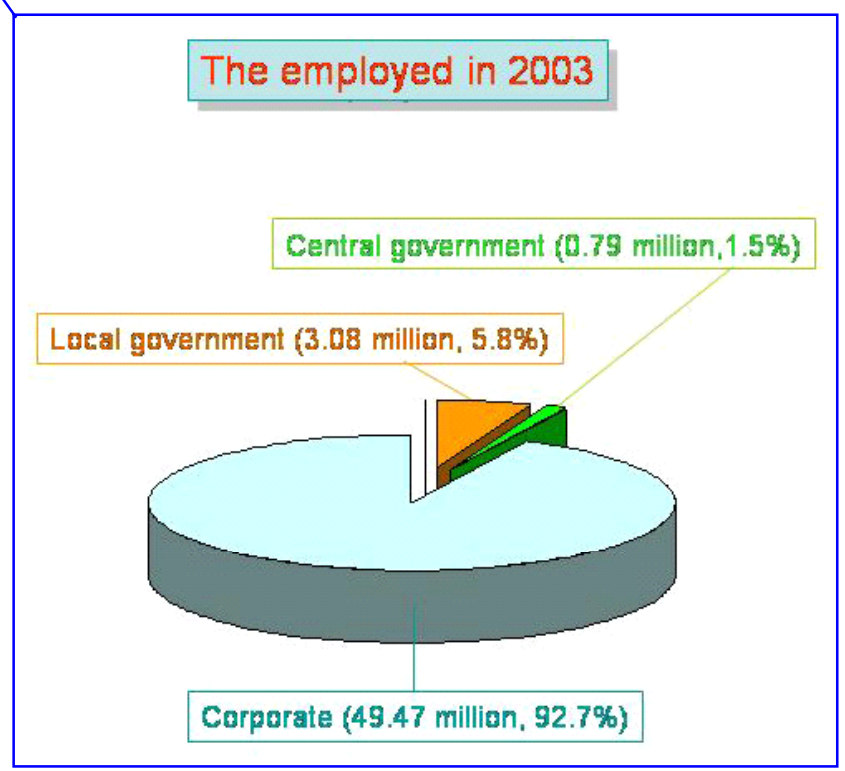
“must-not-do” anything against peace construction ← refusal (omission)

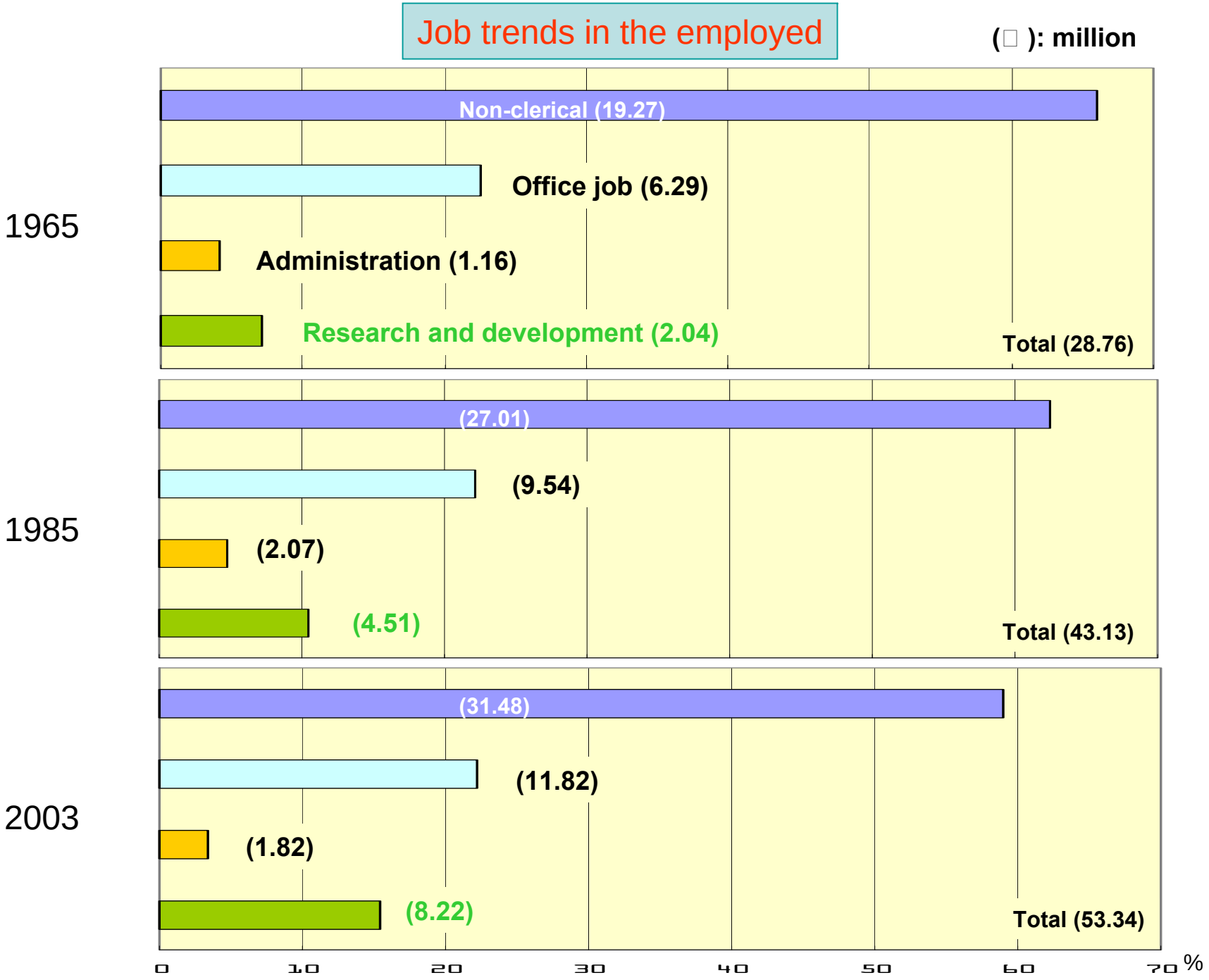
The population movements under labor conditions

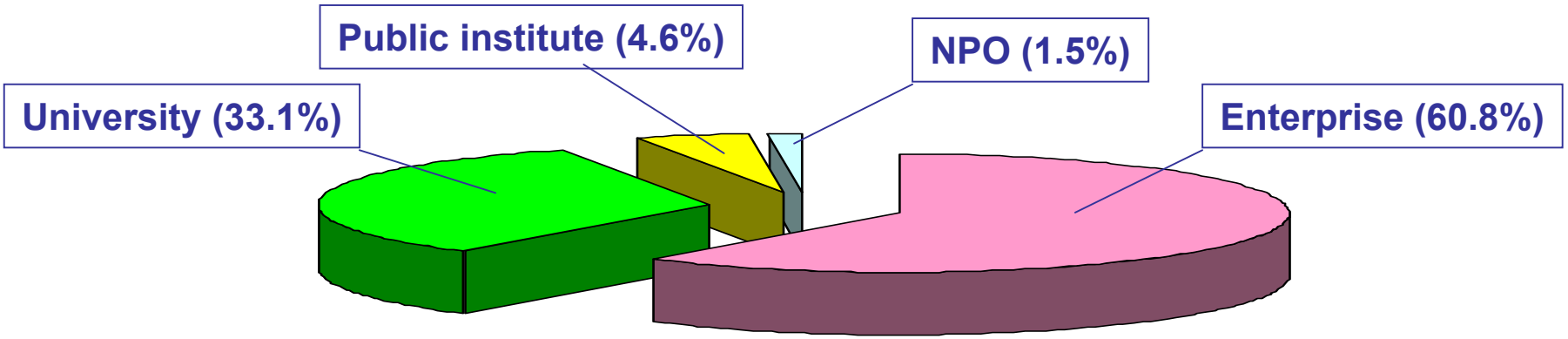
(unit: million)

Year	Ntional population	Over 15[1)]	Non-labor power[2)]	Labor power[3)]	Population in all workplace				Unemployed[6)]	Unemployed rate(%)	Total labor power[7)](%)
					Net number	Employee	Self[4)]	House works[5)]			
1965	98.03	72.87	25.00	47.87	47.30	28.76	9.39	9.15	0.57	1.20	48.30
1985	120.78	94.65	35.07	59.58	58.02	43.13	9.35	5.54	1.56	2.60	48.00
2003	127.58	109.62	42.97	66.65	63.15	53.34	6.85	2.96	3.50	5.30	49.50

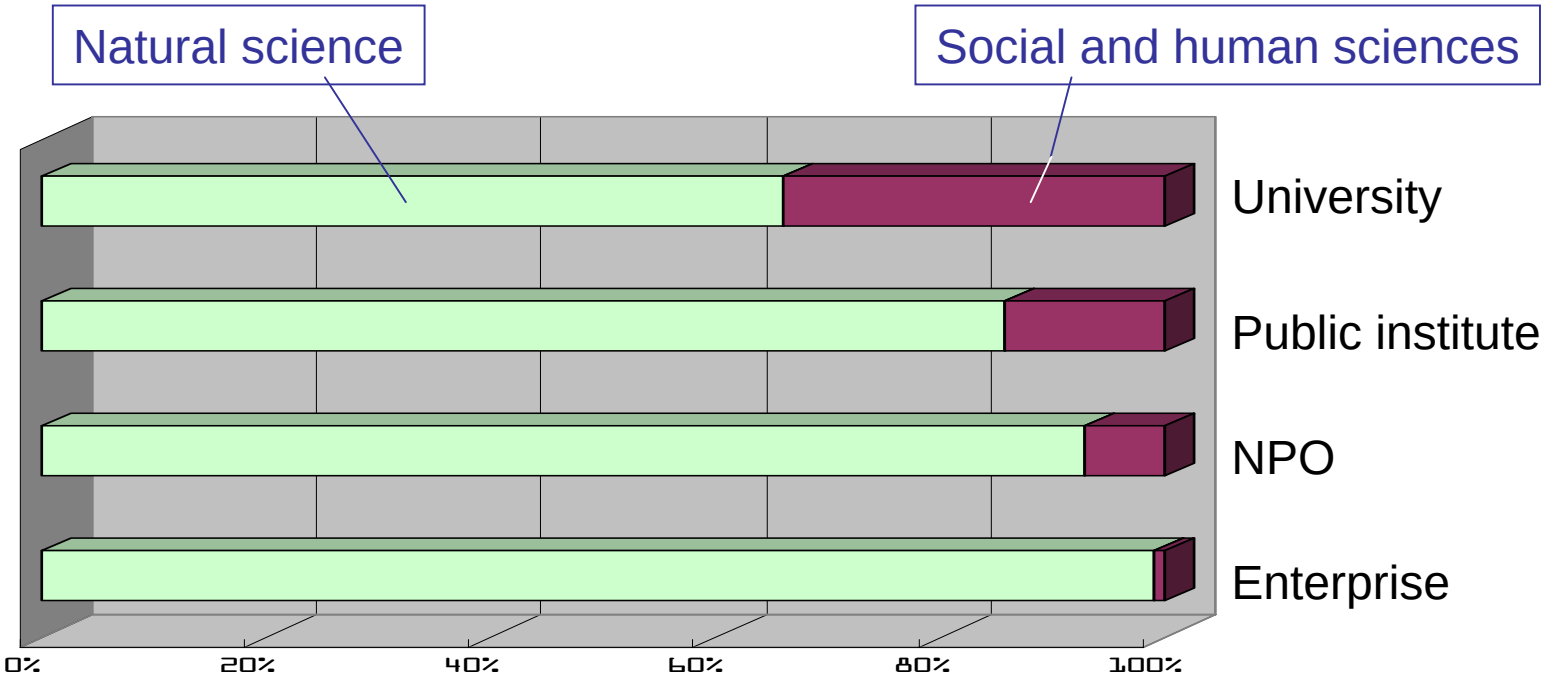
1) Population of 15 years and up
2) 1) - population of school attending (high school, college, university, graduate school, professional school, etc)
3) 1) - 2)
4) Business on one's account (those be self-employed)
5) Help one's family with the houseworks
6) 3) - Net number of labor power
7) Net number of labor power by the national population




Job trends in the employed
(□): million
1965
Non-clerical (19.27)
Office job (6.29)
Administration (1.16)
Research and development (2.04)
Total (28.76)
1985
(27.01)
(9.54)
(2.07)
(4.51)
Total (43.13)
2003
(31.48)
(11.82)
(1.82)
(8.22)
Total (53.34)
0
10
20
30
40
50
60
70
%

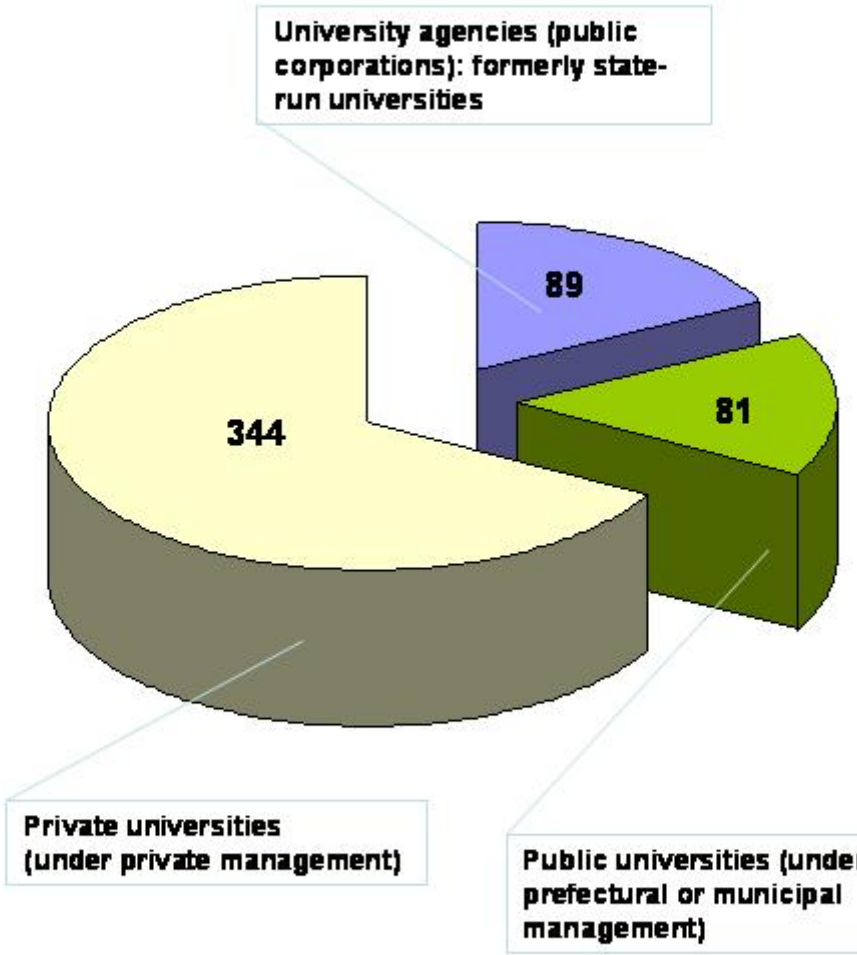


Scientific workers (807,015 in 2005)

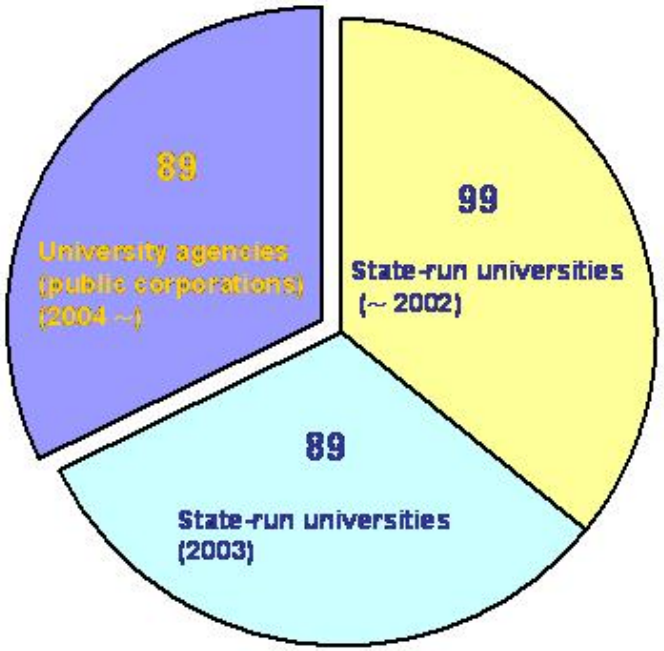


Ratio of scientific workers' professions in 2005 (%)

Japanese higher education (2004)



From state-run university to university agency (public corporation)



Social responsibility: Towards equalization of classes

1) **Deregulation**: “privatization” “all on one’s own responsibility”

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  →□“productism” or “resultism” (profit first or result first policy)
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□□ → To minimize organs’ responsibility and carry out cost performance

- white color exemption policy: inapplicable to “blue color”
  →□work hard to the grave without asking extra money and a holiday
- “overwork” results in “karo-shi (death due to overwork)”
  → For example: > 100h overtime work/month → known
  < 60h overtime work without overtime pay → known

2) **Discrimination**:□differential (gap-widening) society□
Such as thought, academic career, gender, ability, age, *etc*
→□isolation, reshuffle, squeezing and bulling, pay-pause, expelling, *etc*

Violation of scientific workers' rights (Sexual harassment)

Year	Institute	Assaulter	Sufferer	Assaulter's penalty
2007	Nagoya Univ.	♂Assoc. Prof.	♀Student	Suspension (in process)
	Mie Univ. □□□□	□ ♂Assoc. Prof.	♀Clerk □	□Warning
	Kyoto Univ.	♂Prof.	♀Clerk	Suspension (3 m.)
2006	Univ. Tokyo	♂Assoc. Prof.	♀Researcher	Warning
	Hokkaido Univ.	♂Prof.	♀Student	(Retired)
2004	Univ. Tokyo	♂Assoc. Prof.	♀Student	Disciplinary dismissal
	Hokkaido Univ.	♂Prof.	♀Student	Suspension (6 m.)
2003	Kanazawa Univ.	♂Prof.	♀Student	Suspension (3 m.)
2002	Kobe Univ.	♂Prof.	♀Student	1/10 Cut of salary (6 m.)
2001	Hiroshima City Univ.	♂Prof.	♀Student	Disciplinary dismissal

Violation of scientific workers' rights (Academic harassment)

Year	Institute	Assaulter	Sufferer	Sufferers' results
1976	Takeda Pharmaceutical Co.	Corporate	Scientific workers	Dismissals
1974	Hitachi Inst. Co.	Corporate	Scientific workers	Temp. transfer
1966	Hitachi Central Inst. Co.	Corporate	Scientific workers	Dismissal
1966	Matsushita Electric Co.	Corporate	Scientific workers	Temp. transfer
1986	Tokyo Metropolitan Environ. Inst.	Tokyo Govern.	Scientific workers	Reshuffles
1977	Okayama Environ. Hygiene Center	Okayama Pref.	Scientific workers	Reshuffle
2003	Ryukyu Univ.	Prof.	Assoc. Prof.	
2002	Nara Med. Col.	Prof.	Instructor	
1995	Kanagawa Pref. Col. Foreign Studies	Kanagawa Pref.	Teacher	Dismissal
1987	Shitennoji Intl. Buddhist Univ.	Univ.	Teachers	Dismissals and suspension
1986	Chukyo Women Col.	Col.	Teachers	Dismissals and suspension
1972	Fukui Inst. Tech.	Institute	Teacher	Dismissal

Unfair practice of scientific workers (Fabrication of data)

Year	Institute	Offender	Presentation, publication
2006	Natl. Defense Med. Col.	Ex-doctor	J. US. Surgery
	Yamagata Univ. □□□	Prof. Kotani	Research reports
	Univ. Tokyo	Prof. Tahira	Nature
	Osaka Pref. Univ.	Prof. Fujimura	Research reports
	Osaka Univ.	Prof. Sugino	JBC and others
2005	Osaka Univ.	Prof. Shimomura	Nature (Medicine)

Unfair practice of scientific workers (Plagiarism of article and data)

Year	Institute	Offender	Sufferer and remark
2007	Meiji Univ.	Assoc. Prof.	96% of the published book was clipped
2006	Univ. Tokyo□□	Prof.	Students were ordered to hand over their data to others for submitting theses
	Univ. Tsukuba	Assoc. Prof.	5 of the papers published in the USA were entirely clipped
2005	Kyoto Univ.	Prof.	Data of instructor were stolen
2004	Shinshu Univ.	Prof.	Data of graduate students were stolen
	Miyagi Pref.	Institute	Data of a part-time lecturer were stolen
2003	Osaka Intl. Col.	Prof.	Papers written by Prof. of Hachino-he Col. were completely clipped

The declaration of rights and status of researchers (ver. 5)

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   Researchers are entitled to seek truth and publicize the truth to the public. Also, they are entitled to criticize and accuse the concealment and falsification for the truth.
3. **Rights of refusing and accusing the research in violation of humanity;**
   Researchers are entitled to refuse, criticize and accuse all the researches in violation of humanity.
4. **Rights of enjoying satisfactory research condition;**
   Researchers are entitled to enjoy satisfactory research conditions that are necessary personnel, research funds, facilities, and healthy and safety.
5. **Guarantee of status;**
   Researchers should be guaranteed the status suitable to them, which should not be diminished without fair reason.
6. **Rights of receiving fair evaluation;**
   Researchers are entitled to receive fair evaluation. The evaluation should be objective, scientific and research-encouraged, and nor should be utilized for any discrimination in their status and/or treatment.
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   University autonomy, and autonomous and independent management for all the research institutions are guaranteed, which should be maintained by the constant endeavor of the concerned in order to achieve a better condition. All the researchers are entitled to participate in research planning process.
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   Researchers are entitled to educate their successors, for which necessary conditions should be guaranteed.

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   Researchers must properly and honestly publicize all the research fruits.
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   Researchers, in case of publicizing research results, must not carry out an unfair practice such as fabrication, alteration and plagiarism. Researchers, by bowing to pressure and threat, must not represent research results falsely and voluntarily restraint on their publications. Researchers must not misappropriate research funds unjustly.
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   Researchers, in case of evaluating researchers with regard to article's review, degree's qualification, appointment and promotion, must keep fair attitude on the basis of scientific and professional points of view.
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   Researchers should endeavor to distribute scientific spirit and knowledge, ring an alarm to neglecting and misusing science, and carrying out unscientific consideration. Researchers let peoples and administration make no mistake in selection in case of policy determination.
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11. **Solidarity with the people;**
    Researchers, towards constructing world peace and realizing better human welfare, should endeavor to act in cooperation with the majority of the people.

Challenges to European Science and Research

Dr. Diether Dehm

Challenges to European Science and Research

Speech by Dr. Diether Dehm, Germany

Ladies and gentlemen,

The start of 2007 saw the launch of the Seventh Framework Programme of the European Community for research, technological development and demonstration activities. Under this programme, the European Community will provide support for large-scale basic research for the first time. The European Research Council is to receive a total of 7.5 billion Euro for this new task of the European Union. A European Institute of Technology, for which the sum of 2.4 billion Euro has been earmarked, is still at the planning stage. The distinction between these two institutions, however, is unclear.

Project support is to be focused especially on co-operation with companies, but only 15 per cent of the funding is intended for small and medium-sized businesses. It is therefore to be feared that project support, as so often within the European Union, will once again be channelled into the large conglomerates that operate internationally. The complexity of the various European programmes frequently renders it impossible for small institutes and small or medium-sized businesses to take part in them and apply for financial support from them.

Accordingly, the increase in the budget for the seventh Framework R&D Programme will chiefly benefit the large companies and institutions working in the fields of cutting-edge technology and process engineering.

As a result of political prioritisation, a larger share of the EU budget is now being devoted to research and development. The increases of recent years in the budget of the Framework Programme for R&D have certainly been remarkable. Whereas the first programme, covering the period from 1984 to 1987, was given a budget equivalent to 3.3 billion Euro, the figure had risen to 17.5 billion Euro by the time of the sixth programme, which ran from 2002 to 2006, and a total of 53.2 billion Euro has now been allocated to the seventh Framework Programme, covering the period from 2007 to 2013 inclusive. In real terms, this represents a 75% increase in research expenditure from 2006 to 2013. The seventh Framework Programme for research, technological development and demonstration activities, or ‘FP7’, is essentially the bedrock of EU research policy, defining the general orientation of EU research policy in the years from 2007 to 2013.

EU support for research, ladies and gentlemen, is based on the premise that the fundamental input into research and development policy must come from the individual Member States. The task of the European Union is to help co-ordinate the identification and performance of essential R&D tasks.

The legal basis for research and development activities is to be found in Articles 163 to 173 of the EC Treaty. These articles define the contractual foundations for the adoption of the framework research programmes.

Article 166 states that “A multiannual framework programme, setting out all the activities of the Community, shall be adopted by the Council, …”.

At the same time, Article 163 makes it clear that the European Community has the objective of "strengthening the scientific and technological basis of European industry and encouraging it to become more competitive at international level". Here the EC Treaty sharply highlights the primacy of international competitiveness as the driving force of EU research policy. This means that research policy is increasingly degraded into an industrial policy, which results in an unacceptable restriction of the scope for research and development.

It is entirely consistent with the terms of the current EC Treaty that the seventh Framework R&D Programme should follow this approach based on production and competitiveness. We take a very critical view of this one-sided research and development policy. In the medium term, the product-driven approach restricts freedom of research, and in the long term it narrows the horizons of research policy. The very essence of basic research, however, is the freedom of researchers, who are not bound by the need to produce findings that can be exploited for profit.

Article 171 of the EC Treaty stipulates that the Community "may set up joint undertakings or any other structure necessary for the efficient execution of Community research, technological development and demonstration programmes".

The European Research Council is just such a European body with a co-ordinating and structuring mandate. Its composition was announced on July, 18, 2006. On February 27, 2007 the European Research Council took up its duties. Initially it will have one billion Euro at its disposal for grant awards.
The first President of the European Research Council is the Greek molecular biologist Professor Fotis C. Kafatos, and its Vice-Presidents are the Austrian social scientist Professor Helga Nowotny and the French nanoscientist Dr Daniel Estève.
Among the 22 founding members of the Scientific Council of the European Research Council are two German appointees, the Nobel laureate Professor Christiane Nüsslein-Volhard from the Max Planck Institute for Developmental Biology and Professor Hans-Joachim Freund, a physical chemist from the Fritz Haber Institute of the Max Planck Society.

The seventh Framework R&D Programme is divided into four specific programmes:

The Co-operation programme encompasses all measures involving cross-border co-operation in the fields of health, agriculture, biotechnology, energy, the environment and transport.

The Co-operation programme has been allocated a total amount of 32.3 billion Euro. It focuses on the applicability of research findings within society. Co-operation is divided into sub-programmes devoted to priority areas such as:

health, for which the sum of € 6.05 bn is to be made available,
food, agriculture and biotechnology, with an allocation of € 1.935 bn,
information and communication technology, with € 9.1 bn,
transport, with € 4.18 bn, and
space, for which an amount of € 1.43 bn is earmarked.
The budget assigned to security, which is actually concealed armaments funding, amounts to € 1.35 bn.

By contrast, the environmental field, which includes research into climate change, has been allocated only € 1.9 bn, while only € 610 m. is to be made available for socio-economic

sciences and the humanities. This is indicative of the sharp focus on business-related, economically exploitable research which pervades the entire programme and is reflected in its budgetary structure.

The second specific programme of FP7, known as Ideas, covers research activities in all fields that are being conducted by various national or international teams which are in competition with each other at the European level. The total appropriation for the Ideas programme amounts to 7.46 billion Euro. This means that the Ideas programme supports individual scientists who conduct basic research. The allocation of grants under this specific programme is organised and determined by the European Research Council (ERC).

In the third area – People – the aim is to enhance the volume and quality of human capital in European research and technology. This programme is designed to promote the training and mobility of young researchers. A total of 4.728 billion Euro has been budgeted for activities under the People programme, which are referred to as 'Marie Curie actions'.

The aim in the fourth area – Capacities – is to provide funding for "key aspects of European research and innovation capacities". This covers efforts such as the promotion of research infrastructure and of regional clusters of research-driven establishments and attempts to unlock the full research potential of the regions receiving convergence support. The Capacities programme thus includes research for the benefit of small and medium-sized enterprises (SMEs). The total appropriation for this area of activity amounts to 4.2 billion Euro.

Additional special budgets have also been allocated to research for the benefit of SMEs, amounting to € 1.3 bn, to knowledge-driven regions, which will receive € 125 m., and to science in society, for which € 280 m. has been earmarked.

Ladies and gentlemen, through this so-called financial growth in Community support for research and development, the Framework Programme of the EC has now become the world's largest programme of research support. The significance of Community support in the German research landscape has also been steadily increasing. German researchers are involved in an average of some 80% of all research and development projects in the priority thematic areas of the Framework Programme. About 20% of all support funds are now being awarded to German institutions.

These figures are, of course, impressive, but they are none the less indicative of a trend towards the concentration of research support on the central research locations in the EU. Peripheral activities and structurally weaker countries are being left further behind by this concentration on cutting-edge technology.

Although the funds invested in German research from the EU budget only amount to about five and a half per cent of federal and state expenditure on research and development, they have now risen to about half of the purely project-based support provided by the Federal Ministry of Education and Research.

Ladies and gentlemen,

The Left Party has been demanding for years that better use is made of promotion funds for small and medium-sized enterprises and research institutions. Politicians often underestimate completely the role played by small and medium-sized enterprises.

It is the small and medium-sized enterprises as well as the self-employed that are shaping economic structures in all regions of the world. Micro businesses are indispensable for the organisation of daily life and economic development, particularly in structurally weak countries and in the so-called developing nations. A policy impeding the urgent promotion of theses businesses is equally impeding economic development in these regions.
In Germany, enterprises with an annual turnover of between 16.250 € and 50 million € and with up to 500 employees are counted among the small and medium-sized enterprises. These numbers also demonstrate, that statistical values for small and medium sized enterprises are very diversified. Germany has approximately 3,3 million small and medium-sized enterprises. They constitute more than 89 Percent of all enterprises.
In Germany, 40 percent of the gross investments are made by small and medium-sized enterprises. They also generate over 49 percent of the turnover. On the other hand, they employ approximately 70 percent of the work force and train over 80 percent of all apprentices in Germany.

It is an uncontested fact that research and development are one of the cornerstones of innovation in any society. Without sufficient innovation, sustainable growth and employment are not achievable in highly developed economies. For this reason The Left Party has been campaigning for years for the principle of allocating more budgetary resources to research and development. What is totally unacceptable within the support framework, however, is the decision to eliminate gradually the distinction between civil and military research under the heading of ‘security research’, thereby cementing another building block of civil-military cooperation.

As a component of what is known as the ‘Lisbon Strategy’, research and development is accorded official priority in the European Union. In the objectives of the Lisbon Strategy, the governments of the European Union set themselves the target of investing three per cent of GDP in research and development by 2010.

The Lisbon Strategy refines this aim by prescribing that two thirds of expenditure on research and development should be funded by the private sector and one third by the public sector. This clearly shows that, even within the neo-liberally orientated economic and employment policy of the European Union, the realisation that basic research which is not directly profit-driven cannot be organised without the aid of the public purse has asserted itself.

One particularly striking example is the development of the Galileo global navigation-satellite system. The Galileo project has been supported under the budget heading of ‘energy and transport’. Its aim is the creation of a global navigation system with 30 satellites. By 2005, the EU had already poured 1.1 billion Euro into the development phase alone. A further 700 million Euro is being paid by the European Commission to fund the next stage of development up to 2007. The remainder, amounting to 1.4 billion Euro, was to be funded by the private sector. The attempt to secure that funding has now irretrievably collapsed, and the EU budget will have to plug the financial gap.

The companies in the lead consortium, which include Inmarsat from Britain, Thales from France and the Franco-German EADS group, do not wish to go on paying for the development of the infrastructure in the future but still want to preserve all rights to use the system.

Behind the spiralling cost of Galileo is the desire to make it more usable for military purposes. Until now, those responsible for the project within the EU have always stressed the civilian character of the project, but now even Jacques Barrot, the European Commissioner for transport, is openly backing militarisation. Moreover, the European Defence Agency (EDA) has received a mandate to work on the military aspects of Galileo. As a first step in this direction, the EDA was commissioned to produce a feasibility study on SatcomBw, the German military satellite-based communication system which is due to enter service in 2009.

The dangers of this development cannot be overstated. On the one hand, the militarisation of the common foreign and security policy is being drastically accelerated, and on the other hand the participating companies aim to use their involvement in Galileo to build an industrial base from which they can bid for contracts for the production of a 'US missile-defence system' in Poland and the Czech Republic. This would then be the European contribution to the nuclear disarmament of Russia for the benefit of the United States – financed from the secret military budgets of the EU.

The aim of this development is to interweave civilian and military research ever more closely in order to camouflage military spending and, in particular, to obtain military spin-offs from what are ostensibly purely civilian research projects. The research and development policies of European States are being subordinated more and more to the geostrategic global ambitions of a highly developed capitalist system.

An important element in the efforts of the European Union to assert its claims to an imperial geopolitical role in the world is the conquest of space. This is an area in which the dual civilian and military use of new technology is becoming increasingly conspicuous.

One of the aims here is to conduct militarily exploitable research in co-operation with the European Space Agency (ESA). In the seventh Framework R&D Programme an amount of some 100 million Euro has been assigned to the development of satellite-based communication. A further 100 million Euro has been earmarked for accompanying security measures.

The real military project, however, is called GMES (Global Monitoring for Environment and Security). Originally designed as an environmental observatory, GMES is supposed to give decision-makers the opportunity, starting in 2008, to foresee environmental and security crises more clearly and to respond to them more effectively. The domains of the common foreign and security policy (CFSP) and the European security and defence policy (ESDP) are expressly included among the user applications. GMES is funded by contributions from the EU, the European Space Agency (ESA), the Member States and the private sector. From 2007 to 2013, a total of almost four billion Euro is to be made available from the EU budget. To this can be added a contribution of 253 million Euro from the ESA to an estimated total budget of 8.2 billion Euro for the period up to and including 2013.

A large part of the economic success story of the Federal Republic, ladies and gentlemen, can be credited to a well-developed public sector which continuously supported education and

culture as well as research and development. Because of the constant cost-saving measures and job cuts in public scientific and educational establishments, the fruits of this success are coming under increasing threat, which was clear even before the findings of the PISA study were published.

One of the many myths about the market economy is that the market can regulate everything. Particularly in the fields of basic research but also in the socially essential realms of social science, the humanities and peace studies, society, and hence the productive forces within society, cannot continue to develop in the absence of a solid public infrastructure. For this reason we call for more research in the field of peace studies, for the development of research into social problems and social interaction and the safeguarding and development of the humanities as the basis for the development of a progressive civil society.

The aim of European research policy is defined in the catchy phrase used in the official strategy papers of the European Union, “to make Europe a competitive knowledge-based economic area”. The aim of achieving a “European Research Area of knowledge for growth” is largely based on the premise that the target of three per cent of the Member States’ GDP being invested in R&D by 2010 will be achieved. At the present time, however, R&D expenditure is still below two per cent. And given the current rate of growth, it will take the EU several decades to meet the target it set itself.

The problem is that the increase in funding will not benefit those fields in which research has a sustainable impact. Multidisciplinary and interdisciplinary research into potential solutions to social and environmental problems is being sidelined in favour of research designed to culminate in new production processes and the development of new technology.

This is down to the absence of quality standards for research support, which is driven by the prioritisation of marketable findings and is based on policies that pay insufficient heed to the goal of sustainability proclaimed in the Lisbon Strategy. Accordingly, there is heavy investment, in excess of 15 billion Euro, in information and communication technology, nanosciences, materials and production technology and security and space research. Social sciences and the humanities, with 610 million Euro, and research into renewable energy sources, with 400 million Euro, are left behind, even though research in these fields has identified the germs of solutions to problems relating to social cohesion, cultural change and demographic and environmental upheavals.

By attaching greater priority to research into nuclear and fusion energy, the EU is squandering the opportunity to take strategic steps towards renewable energy and energy efficiency. Constructing the ITER International Thermonuclear Experimental Reactor is no way to secure sustainable energy sources for the future.
Instead of the development of strategies to deal with natural disasters and accidents, the war on terrorism has now been thrust into the forefront of research efforts too. New forms of security technology are to be developed with the aim of protecting trade flows and public areas and opening up a multibillion market into the bargain.

By comparison, a more encouraging line is being taken in the field of health research, where greater inputs are sought in the fields of preventive medicine, epidemics and global health issues. In addition, the aim of awarding 15 per cent of the resources to small and medium-sized enterprises reflects a dawning realisation and consideration of their contribution to regional development.

The European Institute of Technology (EIT) is still at the embryonic stage. Modelled on the MIT, the Massachusetts Institute of Technology, in the United States, its purpose is to promote excellence in education and research throughout Europe. In addition, the European Research Council (ERC) is due to become operational at the start of 2007, its goal being to support outstanding frontier-research projects. At a cost of 2.4 billion Euro, the EIT would be an institution whose role is not clearly distinguishable from that of the ERC and whose structures have been branded unsound by German research establishments.

Ladies and gentlemen, in the coming years, politicians and critical scientists and academics will have to strive to shift the political focus of European and national research and development policies towards social and environmental sustainability. Without the establishment of verifiable quality targets based on sustainability, on social and environmental action to safeguard the basis of life and on the development of a peaceful society based on social justice and environmental responsibility, research will be steered in the wrong direction.

It is our conviction that areas of technology where we cannot yet begin to assess the risks to human life and the environment, such as the realms of nanotechnology, must be democratically scrutinised, and we believe above all that it must also be possible to discuss and implement abandonment scenarios.

In this area we advocate Europe-wide harmonisation based on stringent criteria designed to guarantee sustainability and social acceptability. We believe that vying for the greatest possible measure of scientific freedom without any impact assessment of new technology is the wrong way to go. For this reason the EU should assume responsibility for the development of model scenarios and for accompanying research designed to safeguard sustainable development.

Research policies must also take full account of the interests of those affected by new developments. For example, in order to increase consumer protection and enhance respect for civil rights in the development and proliferation of new technology, the EU should establish procedures through which dialogue can be conducted with representatives of civil society on the basis of transparent rules of participation. We call for the creation of models for the sustainable promotion of research on the basis of consultation and discussion.

We advocate a sharp increase in the funds devoted to intensified investigation of the potential of renewable energy sources. Europe must use both the stick and the carrot to lead its Member States towards the abandonment of dependence on the syndicate of nuclear and fossil energy producers. This is why we favour the retention of fusion research as a low-priority support target and the complete abandonment of support for any further nuclear research.

Mrs Merkel recently said that she intended to make climate change a priority of the EU Presidency. In this Framework R&D Programme, however, support for research into climate change only makes a few cameo appearances. The increase in funding chiefly benefits leading-edge technology and process engineering. Information and communication technology, nanotechnology, materials and production technology and, last but not least, space research are the main winners, having been allocated a total of some 15 billion Euro.

Interdisciplinary and multidisciplinary research, which has the potential to devise strategies for the solution of social, environmental and economic problems, is seriously underfunded in this programme in relation to other research fields.

Let me reiterate that security research must not be used to eliminate the distinction between civilian and military research. There is therefore a need for careful scrutiny of the objectives of security research. Particularly in sensitive fields of research, the aim of private exploitation of research findings must not be allowed to rank alongside the scientific development of approaches to the solution of problems.

The discussions on the national security programme of the Federal Republic of Germany are a backward step both politically and socially and severely restrict the hard-won civil rights and fundamental freedoms of German society. The Left Party rejects this type of imitation of the US 'homeland security' regime in Germany and Europe.

The plans for a European Institute of Technology should be dropped. Instead of running the risk of tying up European research in red tape, the first aim should be to provide adequate support for the work of the European Research Council, the first European scientific organisation, and to await its output.

Whereas the appropriation for the promotion of research into renewable energy sources amounts to only 400 million Euro, eleven-figure sums are to be invested in nuclear and fusion energy. In the light of these figures, we call for a reversal of support priorities.

Research and development has to be aimed at overcoming the "throw-away madness" in all sectors of economic development. In all capitalist countries, turbo capitalism has generated "modular throw-away societies". The focus of economy and development is no longer on repairs, recycling of materials and the saving of resources but on quick sale, use and throw-away.

We want to promote a self-sustaining "materials offensive", that will place repairs above single-use, selecting and developing re-usable production materials, introducing self-sustained and regenerative raw materials in the most possible enterprises and with a fiscal policy that promotes service and repairs. This is why the Left Party is demanding a reduced tax rate of 7% for repair services. This will generate employment and save the environment.

The path of market-driven research that is now being beaten not only restricts research itself but also prevents the free examination of scientifically founded options when we come to make political decisions. Given the social and environmental uncertainties within the European Union and the doubts about the best policy for the pursuit of sustainable peace, the availability of such options is a more urgent necessity than ever before.

The appropriation for security research is symptomatic of what we are criticising: the resources allocated to this programme are not being used primarily for such civil purposes as protection against environmental and natural disasters but are being invested one-sidedly in technological research with the aim of combating terrorism and strengthening our external defences.

What we ultimately want is to see the research potential in the fields of the humanities and the social sciences being channelled into the development of the global regulatory strategies that are so desperately needed.

The findings of today's research, which is financed with public resources, in other words taxpayers' money, will subsequently be appropriated and commercialised by the private sector. It is entirely logical that a research policy taken in this direction will leave little trace of the original declared aim of focusing on the prevention of problems and the eradication of their causes.