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SCSS SCIENCE POSITION PAPER

Vital Questions

The Contribution of European Social Science

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Introduction

Vital Questions describes the current state and future prospects of the social sciences in Europe. Written, edited and reviewed by leading social scientists, it contributes to the public understanding of scientific research – much of it supported by the European Science Foundation and its Member Organisations – and of the contribution that social science is making and can make in future to the solution of challenges of vital importance to the people and societies of Europe.

The expansion in the last three decades of the university systems of Europe has brought with it a considerable growth in the number of social science students and of the scientific research which underpins their training. Social scientists are now at work in the public and private sectors, in financial institutions, health services, schools, universities, the media, the IT industry, in fact across the whole range of our economies and societies. But social science as a whole is less well understood – both in its objects and in its methods – than other sciences such as medicine, physics or biology. Even worse, its work is still sometimes dismissed as obvious or facile.

As this volume shows, social scientists are contending with the analysis and understanding of many complex problems. They are often using vast data-bases and statistical techniques which rival, in their volume and in the demands that they make for computing resources, the needs of other scientists. They struggle, also, with philosophical and ethical issues similar to those which have long engaged scholars in the humanities. European social science has a long and proud history of the development of social and political theory.

Europe's social scientists look forward to working even more closely with scientists in other fields, to exploit recent advances in understanding of the human genome, the workings of the brain and the complex systems which characterise so many biological systems. At the same time, our greater understanding of the human body, at the molecular and other levels, poses great challenges in understanding human behaviour – the topic that lies at the centre of all the social sciences.

Europe needs to draw together its social scientists, and the organisations which fund and employ them, to meet such challenges. The stakes are very high and so, potentially, are the costs both of success and even more so of failure. This volume is a contribution, which the Standing Committee for Social Sciences will follow up in other ways – for example in formulating the next strategic plan of ESF – and which will lead to more detailed recommendations. For the present, the document shows the strengths and the range of social sciences in Europe, an excellent platform for what is to come.

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Challenges and Opportunities for the Social Sciences in Europe

Challenges and Opportunities for the Social Sciences in Europe

The social sciences were, in Europe and in the rest of the world, the last of the great discipline groups to be created; they followed the arts and humanities, medicine, the natural sciences, engineering and the human sciences. Some, particularly in the English-speaking world, still deny them the title of 'science', reserving that term for the so-called 'hard sciences' such as physics, chemistry or astronomy.

However, as the English poet Alexander Pope (1688-1744) put it: "The proper study of Mankind is Man" and, over the past century of their existence, the social sciences have made enormous strides in their ability to understand the behaviour of individual human beings and the institutions that they have created. During the very recent past, in the age of computers, new technologies have greatly increased the ability to gather and interpret data about the behaviour, attitudes and prejudices of millions of people, replacing anecdote about individuals or small groups with firm observation. Data capture and analysis have been accompanied by advances in theory and modelling. Finally, there has grown up a fertile interaction between the social sciences and other disciplines, such as medicine and neuroscience, which is aiding the understanding of the genetic and environmental influences on human behaviour.

The social sciences still suffer in the minds of many politicians, journalists and commentators from the belief that all they do is to state the obvious or to recast the obvious into obscure jargon. When, by contrast, they are surprised by a new finding, people who would never think of contradicting a physicist have no compunction about using 'common-sense' to contradict a sociologist or economist. At the same time they yearn for predictions or advice: when will the recession end? What is the best way of anticipating and defeating terrorist activity? How can my children be better educated? These are all proper and vital questions, of immense importance to our society and economy, and all are the province of social science. So social scientists have a great responsibility and a great opportunity to contribute to the improvement of society. But one of their responsibilities is also to emphasise that – because human beings can make their own decisions – human behaviour is highly complex and multifaceted, so that there are rarely, if ever, simple answers to such important questions.

The complexity of social science stems to a large extent from the diversity of human environments and experiences; it might be easier to forecast human behaviour if we all lived in one place and had the same experiences in childhood and adolescence. But, paradoxically, it is upon the diversity of human experience that social scientists feed; they need different societies and economies, such as those of Europe, in order to observe and draw conclusions from a range of stimuli and responses. The languages, customs, geography, systems of government, even climates, within Europe provide a natural laboratory for scientific investigation and discovery, if only that study can be well organised and is able to take advantage of the expertise and intellectual power of the diverse peoples and individuals of the continent.

Social science in Europe, if it is to do its job and to justify the confidence and the support of the population, needs well-trained scholars, the resources of time and equipment to gather data, skills to analyse the multifaceted information which it collects and, finally, the ability to communicate its findings and scientific advances.

Well-trained scholars

All science relies on well-trained people. Data collection and technology supplies the information but analysing it needs expertise and experience, which must also be transmitted to the next generation of scholars. Also needed are mechanisms for sharing and debating the ideas which result; science, including social science, proceeds by controversy as scientists seek to disprove the conclusions of their peers and of past generations.

Millions of students, including some of the brightest minds of each generation, are studying social science in Europe but more needs to be done to persuade and enable them to pursue academic research and teaching. Both women and people from ethnic minorities are currently under-represented among postgraduate students and research staff in the social sciences, though well represented at first degree level. Oddly, there are some subjects, particularly economics and to a lesser degree business studies, where women are particularly rare at the higher levels. There needs to be a determined effort to understand and then overcome the barriers to progression.

In recent years, much has been done to harmonise and streamline doctoral study and to make such study at European universities as attractive as at universities in the United States. The application of the Bologna Process[1] to third level – doctoral – study has been a vital step in this endeavour, but it needs to be vigorously pursued. One crucial step will be the creation of graduate schools that will contain a sufficient number of students to provide efficient graduate programmes of training and to foster a stimulating environment. While all universities value their doctoral students, it is likely

1. The Bologna Process is the process of creating the European Higher Education Area (EHEA) and is based on cooperation between ministries, higher education institutions, students and staff from 46 countries, with the participation of international organisations.

that Europe has far too many universities that struggle to provide adequate training and stimulating student colleagues; the Scottish graduate programme in economics and the Max Planck European doctoral programme in demography provide examples of how collaboration between universities can alleviate this problem.

At the postdoctoral level there need to be more opportunities for mobility of scientists within European countries. There are still too many barriers to mobility in the form, for example, of pension schemes, which inhibit movement. In many countries patronage and protectionism still inhibit the proper European-wide advertising of posts or the appointment of non-native speakers. Even the excellent holders of Marie Curie studentships sometimes find it difficult to obtain posts when they return to their home countries. Governments will have to take action to remove such barriers to mobility.

Temporary mobility is also important. A vital, and increasingly easy, channel for the improvement of social science is peer-group discussion within seminars, conferences and virtual networks. The European Science Foundation, and other bodies, pays the costs of many such networks of scholars, which can be described as 'virtual mobility' and which contribute to the rapid exchange of ideas and the dissemination of results. Funding for such networks is highly competitive and more funding could be very well used.

Many of the greatest challenges for society, and thus for science as a whole and social science in particular, span the traditional academic disciplines. Developing the next generation of scholars to cope with such challenges cannot be left to chance; it will need the development of carefully designed schemes of training at doctoral and postdoctoral level. It will also require universities and the research community, aided by such mechanisms as the Forward Looks of the ESF and other foresight exercises, to look to the needs of science ten or twenty years ahead.

The next generation

In a report issued in January 2009[2], the US National Science and Technology Council (NSTC) identified a set of three Foundational Research Themes in the social, behavioural and economic sciences:

1. Understanding the structure and function of the brain.
2. Understanding the complexity of human societies and human activities.
3. Undertaking the origins of genetic and environmental factors in shaping identity and diversity.

All these topics, as the report mentions, depend upon "recent advances in genomics, neuroscience, computing, imaging and other areas…" but they are unambiguously topics to which the social sciences can and must contribute. Even the first covers how "consciousness, behaviour and emotions arise and are regulated."

As the report recognises, scientific advance in these crucial fields depends upon a concerted effort and sustained investment to develop specific tools and technologies, to improve methods for collecting and managing data, to build more integrated systems to allow for sharing across data sets, to focus on scientific questions with immediate policy implications and to evaluate the policies that result. As Robert Groves, now the Director of the Census in the USA, has put it: there needs to be a data infrastructure which bridges the gap between small- and large-scale studies, allowing scientists to move between cells and societies. There must be much more data sharing of administrative and commercial as well as academic data and the infrastructure must facilitate this.

The topics identified by the National Science and Technology Council share with others three major characteristics that will describe the next generation of social science in Europe as well as in the United States. First, they are multidisciplinary, cutting across traditional discipline boundaries. Second, and as a result, they will be approached by teams of scholars, bringing different perspectives to bear on common problems. Third, they will be expensive, requiring long-term planning and investment in human resources, technology and infrastructure.

All these factors apply also to topics for research in the social sciences identified by the European Commission in its Framework Programmes. Most recently, those topics have been:

- growth, employment and competitiveness in a knowledge society;
- social cohesion, and social, cultural and educational challenges in an enlarged EU;
- combining economic, social and environmental objectives in a European perspective;
- major trends in society and their implications;
- sustainability, environmental challenges, demographic change, migration and integration, quality of life, and global interdependence;
- Europe in the world (covering migration, poverty, crime and conflict);
- the citizen in the European Union;

2. Executive Office of the President: National Science and Technology Council (2009) "Social, Behavioral and Economic Research in the Federal Context" (Washington, D.C.)

- socio-economic and scientific indicators;
- foresight activities, such as the future implications of global knowledge, migration and ageing.

In preparation for Framework Programme 8, the Competitiveness Council of the European Union identified in July 2009 the Grand Challenges of our time: an eco-efficient society, global warming, dwindling supplies of energy, water and food, ageing societies; public health, pandemics and security. Meeting all these challenges will require the contribution of social scientists who understand how societies and individuals are likely to respond; surveys of public attitudes, such as those of the European Social Survey, will be vital in formulating political responses to the Challenges, but social scientists will also need to gather and analyse large amounts of data in many fields. As with the topics identified by current Framework Programmes and by the NSF, this will require increased investment in research infrastructure.

Social science, in other words, will no longer be cheap. There will continue to be lone scholars, developing theory or engaging in critical analysis, just as there will continue to be such scholars in mathematics or physics. But just as theoretical mathematicians co-exist with astrophysicists, so theorists in sociology or economics co-exist with scholars compiling vast databases of economic data or organising longitudinal studies which come to fruition over several generations. Social networks, always existing but now manifest through Facebook and similar Internet tools, are so complex as to require large-scale modelling and network analysis tools; 'complexity science' is a new discipline which links the biological, behavioural and social sciences to analyse networks and their workings. Geographical information systems do not simply power satellite navigation systems or guide product marketing; they provide fundamental tools for spatial modelling of complex human behaviour.

If Europe is to contribute in friendly collaboration as well as competition with the United States, its social scientists must be equipped to participate in such large and long-term research endeavours. This is partly a matter of training, partly of attitude and aptitude. It is clear that Europe suffers from a shortage of quantitative social scientists although it is strong in qualitative analysis. It is not necessary or possible for all social scientists to be expert statisticians but it is essential for them to acquire the skills to understand quantitative argument and to use it – working with others in research teams – when such methods are appropriate to the task in hand. Exactly the same can be said of qualitative methodology.

By comparison even with the United States, Europe contains an astonishing variety of cultures, languages, customs and belief-systems. This diversity should be a strength of European social science, but it seems to lead too often to isolation and duplication rather than synergy and collaboration. Legal, cultural, economic and linguistic barriers hamper the achievement of economies of scale within research generally. The task of the next generation will be to break down those barriers – in addition to the barriers between academic disciplines – to achieve common goals such as those articulated in the United States.

Europe lacks, of course, a forum for the definition of such goals. In particular fields, though mostly in areas outside the social sciences, the European Commission has articulated research goals within its Framework Programmes, but the development of the European Research Area now provides an opportunity to create this forum. Europe needs strong social science academies, working together and with research funding bodies, to define ambitions, set targets and marshal investment.

Europe has made a start, through the European Strategy Forum on Research Infrastructure (ESFRI) to identify vital research infrastructures, in defining areas for long-term investment in the social sciences as well as other disciplines. Three projects in particular are of vital importance to social scientists: ESS – the European Social Survey; the CESSDA project to link European social science data archives; and SHARE – the Survey of Health, Ageing and Retirement in Europe. If these can be brought to fruition as European infrastructure projects, with a guarantee of long-term funding, Europe will be in an excellent position to take advantage of its diversity and to parallel or even surpass similar projects in other continents. Such projects are sometimes disparaged in comparison with infrastructure projects in other fields of science because they do not involve the construction of large research tools – of bricks and mortar – but they are equally valuable in the exploration of scientific problems and, usually, significantly cheaper. They represent good value for the investment they entail; governments and the European commission should consider – as the Science and Technology Council of the United States has done – what investment will be needed to ensure that European social science is not hampered by poor facilities.

Social science and society

Social science, like other science, has to be both self-critical and transparent; it must show what it can do and why society benefits from investment in its future. This demands better communication with those who are paying the salaries of social scientists. It demands also that social scientists develop evaluation tools which will

demonstrate that those salaries are buying research, and teaching, of high quality.

Europe and European social science has suffered from poor communication of its research. In the United Kingdom, for example, which has one of the most vibrant groups of social scientists, there is no popular journal devoted to these disciplines; the success of *New Scientist* compares with the failure, after several decades, of *New Society*. Even *The Economist* devotes far more column inches to the natural sciences and technology than it does to research findings from the social sciences. One radio programme is devoted to the social sciences and humanities; several to the natural sciences and medicine.

Social scientists across Europe must learn to be less diffident about communicating, even trumpeting, their findings. The Internet now gives them a golden opportunity to publish the results of their work, but it also demands that they do so in ways which will appeal to a lay audience, which will be jargon-free, which will point to implications for public policy and will not be chary of controversy. They must communicate effectively with all the potential users of their results, both in the public and in the private sectors of the economy. They must forge better links with the media and with politicians, displaying their wares to the best advantage. They must convince policy makers that there is hardly any public issue, from climate change to the doubts about genetically modified organisms, from credit crises to the causes of social and economic inequality that does not have social origins, implications and consequences.

Finally, social scientists need better methods of evaluating their research and demonstrating its quality. It is easy to caricature the excesses of citation analysis and bibliometrics in the natural sciences – with papers by 200 authors and simplistic evaluation based on the quantity of research grants and contracts. But there is such a plethora of publication in conventional print form, in the broadcast media and on the World Wide Web, that there is an ever-present, and perhaps increasing danger that – to adapt Gresham's law – bad science will drive out good. Conventional peer review, as practised by publishers and academic journals will continue to be the bedrock of evaluation but there is a need for new methods, perhaps based on bibliometrics, that will give guidance to scholars and the public about where to find reliable information. European social scientists, as well as those who fund their work, need to be honest and open about their successes and failures and their current standing as a basis for future development.

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The position of European social science

What is the current state of the social sciences in Europe? How does this compare with the state of these disciplines in the United States and other parts of the world? Are the social sciences achieving their full potential in all parts of Europe?

These questions are difficult to answer. So much science policy discussion, and the statistical data which supports it, has concentrated on the condition and impact of the so-called 'SET subjects' (science, engineering and technology) that there is a paucity of aggregate information about research in the social sciences in Europe; much the same is true of the humanities[3]. This is despite the large number of students, teachers and researchers engaged in these subjects (SSH) in all European coun-

3. It is notable that the recent European Commission report "A more research-intensive and integrated European Research Area: Science, Technology and Competitiveness key figures report 2008/2009" makes no mention of research in the social sciences or humanities and that no relevant data seem to have been collected.

tries and the evident impact that they have on European economies and societies.

This section attempts to present what information is available and to draw from it some conclusions about European social science as a whole in 2009. It is based partly on research by Professor Michael Kahn[4] and on data prepared by him for the World Social Science Report due to be published by UNESCO and the International Social Science Council in early 2010.

Measuring the social sciences

A common feature of all countries undergoing economic development is that their service sector rises as a proportion of economic output, with concomitant declines in agriculture and manufacturing. However, most conventional definitions of 'research and development' are attuned to the manufacturing sector of the economy and do not fully comprehend research in the service sector, other than in higher education itself. Until very recently, many developed OECD countries did not recognise social science activity in their surveys of business sector research. It is still the case that, in most countries, tax incentives for research and development do not cover work in the social s ciences and humanities; this is despite the evident importance, for example, of recent innovations – many with major and some with disastrous consequences – in the financial services sector.

For all these reasons, the available evidence on research and development in the social sciences and humanities is heavily dependent on activity, and surveys of activity, in the higher education sector and, to a slightly lesser extent, in government and non-profit activities. As Kahn (2010) puts it "… along with the general problem of under-reporting of R&D the under-reporting of the contribution of the social sciences and humanities to R&D in the business sector is designed in. The main sector for R&D in SSH will thus be in higher education and government laboratories, science councils or academies, as the case may be."

However, the evidence suggests that overall SSH[5] research is substantial, at about 9% of gross expenditure on research in 20 European countries (not including the UK) and has been increasing. Partly because the UK is not included, the true figure is likely to be higher and growing, as the European Research Council has found in allocating its funds. The reasons for this growth in Europe – and more widely across the OECD – deserve further exploration. It seems likely that one cause is the significant expansion of student numbers in higher education which has occurred, particularly since the early 1990s. The number of graduates in Europe in social sciences, business and law increased by over 50% between 2000 and 2006 to over 1 500 000. University and equivalent graduates in the social sciences and humanities, like those in other disciplines, expect and deserve to be taught by staff who are engaged in and familiar with research at the frontiers of science in their disciplines. Since, in many countries, student demand has produced more rapid increases in courses in SSH than in other disciplines, and since the majority of higher education expenditure is on salaries, the growth in student numbers will itself produce an increase in the proportion of SSH research activity within higher education.

For whatever reason, the number of SSH researchers in European higher education is large. Although the relevant statistics are difficult to obtain, estimates by Michael Kahn suggest that there are at least 150 000 full-time equivalent SSH researchers in 22 European countries:

Austria, Belgium, Czech Republic, Denmark, France, Germany, Hungary, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Spain, Slovak Republic, Slovenia, Sweden Turkey and United Kingdom

(For these purposes, the number of researchers includes doctoral students and postdoctoral fellows, with numbers converted from head-counts to full-time equivalents).

This compares with a figure of 111 000 such researchers in the United States, over 50 000 in Japan and over 17 000 in Australia. What are these researchers doing – apart from teaching over 7 million students, 35% of all students in European higher education? It is very difficult to obtain comparable data on the main form of scholarly output; i.e. publications in journals and, even more so, in books and reports[6]. Many social scientists in Europe currently point to perceived deficiencies – for their own purposes – of the Thomson-ISI database of scientific journals, arguing that the selection of journals is biased to fields other than the social sciences and humanities and towards journals published in the English language. However, these sources do contain a substantial representation of social science publications and do cover some non-English journals.

In 2007, researchers in SSH in the 27 EU countries and Turkey produced, 45 767 journal articles among those SSH journals represented in the Thomson-ISI database. This compares with 40 877 articles produced by scholars

4. The ESF is grateful to Professor Kahn and the ISSC for making these data available. Neither Professor Kahn nor the ISSC are responsible for the interpretation of the data given below.

5. For the reasons given, it is impossible to make a distinction in the available statistics between the social sciences and humanities.

6. A study under the auspices of the Standing Committees for the Social Sciences and for Humanities of the European Science Foundation is currently assessing the potential for the creation of bibliometric data in SSH subjects.

in the United States, a striking finding given the alleged bias of the database towards Anglophone and US journals. In fact, although the European higher education system is of course significantly larger than that of the United States, the performance of European scholars in these terms appears to be highly creditable, given the generally greater resources which are available to the American than to the European higher education systems. It is also possible, remembering that the data are highly problematic in the case of many countries, to calculate the 'productivity' of researchers in a number of countries, in terms of numbers of articles published in recognised journals.

Such calculations have to be used with great care and an awareness of the deficiencies of the data. In the case of a number of significant countries; i.e. France, the United Kingdom and the United States, the number of researchers has to be estimated from incomplete data. In some countries, there are significant numbers of SSH researchers outside higher education; for example in government departments, research establishments or academies of science, whose work may be included within the numbers of publications. Finally, the selection of journals which appear in the relevant database – the Thomson/Reuters list of journal publications – is important; it is predominantly Anglophone and may under-represent research on local or regional topics. (It is however of note that a similar analysis of the Scopus database of publications in the arts and social sciences produces a similar ranking to that given in the next paragraph.)

Bearing these major qualifications in mind, the data suggest that the most productive national group of SSH researchers is from the Netherlands, producing 946 published articles in 2007 per 1 000 researchers. They are followed by researchers from Ireland (725), Sweden (547), the UK (529), Iceland (464) and Slovenia (451), all more productive than scholars in the United States (434). Within Europe, the lowest output per 1 000 scholars was from Poland (24) but Japan achieved only 30. At the least, these data suggest that European scholars in the social sciences and humanities have a published output comparable to scholars from the United States, the country which is generally regarded as the world leader in these subjects.

To sum up the quantitative data, it appears that the number of social science (and humanities) researchers in Europe has grown rapidly in the past decade, that they now constitute about one-third of researchers within higher education (although much lower proportions in other parts of the economy) and that their scholarly output in total and in relation to numbers is as great as that of the admitted leader in the field, the United States. In absolute numbers, both the number of researchers and the number of publications is larger in Europe than in the United States, partially reflecting, of course, the larger population of Europe. However, it is also important to remember that – as is discussed below – the 'brain-drain' means that many scholars of European origin work and publish in the United States and that their publications are therefore attributed to the USA.

None of these data, of course, throw light on the impact of social science research, a topic of increasing interest to governments and research councils who fund research. The measurement of the impact or effects of research is difficult in all disciplines, but the task is increasingly urgent as expenditure on research rises and as governments seek an adequate return on their investment. There is a particular paradox in urging that social science should be able to demonstrate a greater impact, since most social scientists would argue that they are anxious for their work to have an effect on society or the economy, but that policy makers all too often ignore the results of research. Evidence-based policy making all too frequently falls victim to ideology, political preconceptions or the prejudices of the popular media. But social scientists, with other scientists, do have a duty to seek the maximum impact for their work and to communicate it as widely and as understandably as possible.

Assessing the quality of European social science

There do not appear to have been any published assessments of the quality of European social science as a whole. There have, however, been some assessments of individual disciplines in individual European countries, such as a recent series of assessments – so far covering anthropology, political science, economics and soon sociology – conducted by the Economic and Social Research Council (ESRC) in the United Kingdom. These have been undertaken with the aid of international experts with the intention of 'benchmarking' UK research in the relevant discipline against international, and particularly US standards.

As might be expected, the analysis of UK economics[7] makes the most rigorous use of quantitative and bibliometric indicators, but also draws heavily on peer-group evaluation. Its most important conclusion is that: "First and foremost, the research achievements of United Kingdom scholars are exceptional by world standards: the UK economics profession is more prominent than any other country's except for the United States. UK scholarship has been very influential in a number of important fields, such as labour economics, public economics, and economic development, and it has attained world leadership in micro-econometrics." However, the report

7. ESRC 2009 "International Benchmarking Review of UK Economics" (Swindon)

acknowledges that, on the basis of bibliometric evidence, France, Germany and The Netherlands are increasing their contribution.

This relatively optimistic picture is not, however, born out by another assessment of the state of European economics, by Jacques Dreze and Fernanda Estevan of the University of Louvain (2007): this states that: "Today, the United States outperforms Europe by a factor of the order of 3, with no clear trend; the Lisbon goal is not in sight. … Europe is not homogeneous; the United Kingdom and the small countries in north central Europe significantly outperform the Big 4 continental countries (France, Germany, Italy, Spain); we conclude that the Big 4 should accept English as the lingua franca of economics and implement major institutional reforms." In particular, the authors urge greater concentration of research within fewer departments and, in particular, the concentration of PhD programmes. Only by such means, and substantial financial investment, do they believe that the Lisbon objectives of the European Research Area can be attained.

Simon Hix (2004) presents a global ranking of political science departments based on the quantity and impact of their publications in 63 main political science journals and concludes that "In the political science rankings for 1998-2002, there was one department outside the US in the top 10, five in the top 20, fourteen in the top 50, thirty-six in the top 100, and 103 in the top 200". He validates his ranking by comparing it with a similar ranking of economics departments published by Coupe (2003) in which "there were no departments outside the US in the top 10, one in the top 20, ten in the top 50, thirty-four in the top 100 and eighty-eight in the top 200".

Hix (2004:303), supporting the point expressed by others, states: "One obvious criticism is that these rankings are biased towards English-speaking countries […], In other words, the dominance of institutions from these countries may simply be a reflection of the dominant position of English as the global language in the social sciences". Concluding he admits that "One possible problem with these rankings is the apparent English-language bias in the results, which undermines the aspiration to be truly 'global'".

The fact that many distinctive European scholars have full- or part-time jobs in the United States and therefore contribute to the excellence of US rather than European university departments makes it difficult to evaluate the quality of European social sciences by methods of rankings based on defined social science journals. Nevertheless, the results of these analyses of two core social science disciplines suggests that European social scientists, though quantitatively numerous, still do not achieve results comparable to those of the social scientists of the United States.

The heritage of European social science

The European social sciences of today are in all aspects successfully integrated into world social sciences. Yet they have distinctive features which can be traced back to European scholarly traditions based in European history and social and cultural diversity. The most important among these traditions has been the fact that the distinction between social sciences and humanities has in Europe always been less pronounced than elsewhere – intellectually and institutionally. This fact has to be taken seriously in any analysis of the quality of European social sciences and cannot be fully taken into account by any ranking based on a strict separation of social sciences and humanities. The difficulty of making such a distinction is shown also by the fact that the boundary between the two large fields is drawn differently in different countries; psychology, anthropology and education are, for example, included within humanities in some countries, within social sciences (or even natural sciences) in others.

Although European social sciences and humanities have evolved and have gained public significance and recognition along different time trajectories, there has always been close affinity and cooperation between them, with the possible exception of the first two or three post-Second World War decades which saw the quite intensive 'import' of American quantitative sociology and psychology into West European social sciences.

Emphasising the importance and consequences of this traditionally European affinity between social science and humanities does not imply that there is in Europe a universal consensus on this affinity. Both within social sciences and humanities there are 'camps' (to some extent quite bellicose) which advocate and practice the call for a clear distinction and separation between the two groups of disciplines[8].

Yet, especially since the 'cultural turn' of the late 1960s and the early 1970s, this traditional European proximity between social sciences and humanities has definitely achieved a new momentum. 'Cultural sociology' has emerged and positioned itself beside 'sociology of culture'. 'Culture' and 'human agency' have assumed parity with 'structure' and 'social group' and it is first of all in these areas that we can look for the most important and the most specific European contribution to contemporary social sciences[9].

8. We would argue, however, that these voices for conceptual separation actually develop both social sciences and humanities and bring them closer to each other.
9. The current affinity between social sciences and humanities has been forcefully stressed by authors of the METRIS "Report on emerging tendencies in socio-economic sciences and humanities" (European Commission, 2009) who write: "Today, the internalisation of humanities research and a greater integration with the social sciences are clearly visible trends" (METRIS Report: 20)

Since 'the cultural turn' both humanities and social sciences can be justifiably conceptualised as belonging to the realm of 'cultural studies'. Not everyone in social sciences and not everyone in Europe thinks this way. Some adhere to Wallerstein's tradition of thinking of social sciences as a special territory where 'cultural study' proper (humanities) and 'complexity studies' (life sciences) will one day meet. Others point to the fact that nowadays the assumption about the existence of a contextualised, dynamic and reciprocal relationship between 'structure' and 'culture' (or 'agency' has become in some form a part of even the most rigorously 'social' and quantitative social sciences. In consequence, they are inclined to see humanities, social sciences and even – in their general tendency –- life sciences as distinct but truly interdependent elements of the same fundamental and interdisciplinary future-oriented scientific endeavour. If we are to look for the most important and the most specific European contribution to contemporary social sciences, it is rather the second than the first perspective which offers more convincing insights. These insights are inherently related to a new momentum given by the 'cultural turn' to the traditional European close affinity between social sciences and humanities.

Several features of European social sciences apparently result from (or are correlated with) the fact that the disciplines of social sciences and humanities are closer in Europe than elsewhere. It should be obvious, however, that this closeness cannot be seen as the only or even the most important factor responsible for the best social science produced in Europe and that these features should in no way be considered as characterising only European social sciences. Particular characteristics of European social sciences seem to be:

1. There is a relatively greater focus on broadly defined institutions and cultures than on social groups as agents of social dynamics. This can, at least in part, be traced back to an interest in 'cultural traditions', typical of European humanities disciplines, rather than in 'group traditions' which are the typical focus of narrowly and behaviouristically defined social sciences. Several post-structuralist schools and their late followers and seminal works by Juergen Habermas and Niklas Luhmann have to be mentioned here. *Parliamentary Democracy, Democratisation, Destabilisation, Reconsolidation 1789-1999* by Klaus von Beyme is a good specific example of focusing on institutions in European political science. The huge recent interest in institutions and organisational cultures of the European Union, on the part of European scholars, can also be seen within this perspective.
2. Special attention is given to comparative analyses of various scales and ranges as expressed in a visible contrast to American 'self-centeredness'.
3. Special attention is given to interdisciplinarity. Some would say that the European zeal for interdisciplinarity results from the weakness of European behaviourism and the underdevelopment of quantitative methods in Europe. That might be true in special instances but the drive toward interdisciplinarity is first of all a long-lasting result of European education and European curricula. In specific US-Europe comparisons it can be seen particularly, even today, in the greater number of courses from other social science and humanities departments which are offered at social science departments in Europe. Student exchange projects within the EU strengthen the exposure of European students to interdisciplinary traditions of European social sciences.
4. Historical analyses play an important role in European social sciences. As Anthony Giddens has put it, history and sociology "appropriately conceived" are the same, because both focus on the dynamic interdependence between human agency and structural developments. *Historical Sociology* by Philip Abrams and subsequent European contributions to journals dealing with 'historical sociology' are good examples of the role that historical analysis has assumed in European social sciences. Pierre Nora's focus on 'sites of memory' and 'remembered realms', Niall Ferguson's versions of history and the comeback of political history (once almost invisible in the landscape dominated by 'social history') are other good examples.
5. Although the term 'governance' has become popular all over the world, at least some aspects of its origin can be traced to analyses of the institutional infrastructure of the process of European integration. By being active in these analyses, European scholars have contributed profoundly to introducing and applying this concept in social sciences.
6. There is also one special area where renewed European traditions of affinities between social sciences and humanities have produced important and politically relevant results. This is research on the departure from state socialism in East Central Europe, in the centre of which there are dynamic trajectories of human agency facing the destruction of old structures and emergence of new ones. European input into this 'transition research', both from Europe and from European scholars active in the US, has become an important part of 'normal science' concerned with post-1989 changes in huge parts of Europe[10].

10. Works by Claus Offe, Jadwiga Staniszkis, Ivan Szelenyi and others.

Challenges and Opportunities for the Social Sciences in Europe

The quality of European social science has to be judged first of all by its capacity to nurture and praise scholars who are not only excellent text writers but also founders of new traditions and paradigms. For many reasons this is not a proper place for aiming at producing a full list of such scholars. But it is sensible to mention, alphabetically, some of them, including those already mentioned in earlier paragraphs: Philip Abrams, Margaret Archer, Paul Baltes, Jean Baudrillard, Zygmunt Bauman, Ulrich Beck, Basil Bernstein Klaus von Beyme, Raymond Boudon, Pierre Bourdieu, Manuel Castells, Michel de Certau, Ralf Dahrendorf, Gilles Deleuze, Jacques Derrida, Michel Foucault, Enrique Tierno Galvan, Anthony Giddens, Rene Girard, John Goldthorpe, Juergen Habermas, Hans Joas, Jean-Claude Kaufmann, Jacques Lacan, Niklas Luhman, Jean-Francoise Lyotard, Karl-Ulrich Mayer, Pierre Nora, Claus Offe, Serge Moscovici, Piotr Sztompka, Jadwiga Staniszkis, Ivan Szelenyi, Nigel Thrift, Alain Touraine, Victor Turner, Slavoj Zisek. All of them (with some of them being very rigorous quantitative social scientists) are excellent examples of the creativity with which European social sciences and humanities deal with the dynamic interaction of 'structure' and 'culture' in the modern world.

Such a list of leading European scholars raises the issue of 'brain drain'. Leading European social scientists have traditionally looked to the United States as the leaders of many of their disciplines, have often themselves undertaken postgraduate study or research in the United States and have taught in US universities, sometimes temporarily and sometimes permanently. There do not appear to be any longitudinal surveys of the phenomenon, although it is generally believed that the majority of such scholars sooner or later return to their own European countries. It appears that in recent years a similar movement has developed from other parts of Europe towards the United Kingdom, but again the data are deficient.

One person's 'brain drain' is another person's 'mobility'. The differential development of social science between different European countries and the differences in economic development between those countries, leads naturally to mobile scholars seeking opportunities to further their careers and develop their skills in other countries. This has historically been the case for centuries; modern mobility recalls the 'wandering scholars' of the Middle Ages. A particular feature of the recent past was the domination of large parts of Central and Eastern Europe by the Soviet Union and by a communist or Marxist ideology. This had a greater impact on the social sciences than on other disciplines; some approaches to social science were unacceptable to political and scholarly establishments and were even dangerous for scholars to pursue. Such areas, in particular in political science and economics, were thus stifled or at least cut off from interchange with scholars in other parts of Europe or the wider world. While some of these deficiencies have been rectified in recent decades, the full integration of social science in Central and Eastern Europe with that of the rest of Europe has been further hampered by economic difficulties and lack of infrastructure. While both the European Science Foundation and the European Commission have sought remedies for these problems, they still remain and constitute an impediment to the full development of the social sciences across the whole of Europe; while this is the case, there will naturally be movements of social scientists across national boundaries within Europe.

The 'brain drain' has normally been seen as a sign of the deficiencies of European research and higher education. Such a view was part of the impetus for the Bologna reforms of first- and second-level higher education and for the more recent incorporation of doctoral-level studies into the Bologna framework. But this seems to have been founded on a belief that, without such reform, students would leave Europe permanently for the United States, not that they would spend some time there and then return to use their acquired skills in Europe. The view also stemmed from a view of European training as inferior to that in the United States, which is at odds with the evidence of the extent of recruitment of European scholars by universities in the United States. It is said, for example, that the majority of new hirings in economics at American research universities is of European scholars.

The existence of a 'brain drain', now perhaps better called 'brain circulation', together with the publication record of European social scientists, suggests that the quality of European scholars and their output is high and is perceived to be so outside Europe. There are clearly differences in the quantity, and possibly in the quality, of output between different countries, differences which can be traced back to the historical development of subject disciplines, to resources, to political control and to other factors. Nor can it be claimed that European social science is in any sense homogeneous; it is certainly much less so than is the case in the United States. But, despite this diversity, the discussion of specific themes in the social sciences – which follows – demonstrates the strength of European social science and the relevance of its work to core questions on the working of Europe's economies and societies. They only touch the surface of the social sciences, for such subjects as psychology, anthropology and law are absent, but collectively they demonstrate how European social scientists are asking and answering vital questions.

Themes in European Social Science

The macroeconomy

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Concept and focus

The concept of the macroeconomy and the study of its functioning, macroeconomics, must of necessity cover a very wide range of issues. Macroeconomics has traditionally been split between analysis of the short to medium run and of the long run. The former consists of theories that try to explain and forecast macroeconomic fluctuations; the latter aims at understanding the factors that affect long-term economic development and growth. New developments in macroeconomics have been characterised by an ambition to integrate the short and long run in one framework.

Other aspects of macroeconomic research consider central parts of a national economy and the international economic system. Indeed, globalisation has led to intense interactions between national economies, generating a need for macroeconomists to focus on the international dimension of macroeconomics.

Macroeconomics also studies the determination of important parts of the overall economy. Important components of the macroeconomy include money and the financial system, aggregate aspects of public finance and fiscal policy, and the behaviour of central aggregate variables such as consumption, investment, employment and unemployment, inflation, exchange rates, and the external balance of a country.

It is impossible in this short position paper to do justice to the study of the different parts of the macroeconomy and the corresponding areas of macroeconomics as briefly described above. We choose to focus on two specific concerns in contemporary macroeconomics. First, we take up current challenges in macroeconomic analysis at the level of overall modelling approaches. Second, we discuss the interrelations between macroeconomic analysis and policy making. The relationship has always been close and the current global economic crisis is providing new significance to it.

Current challenges

Modern macroeconomics embodies two central tenets. The first one is that a macroeconomic model should be 'micro founded'; i.e. based on dynamic utility maximisation of individual agents, and the macroeconomic outcome must be described in terms of a general equilibrium with mutually consistent decisions of different economic agents (consumers, firms etc.).

The second tenet is that expectations of the agents should be model consistent, which implies that agents make forecasts based on the information embedded in the model. This idea in turn implies that agents have a full understanding of the structure of the underlying model as part of the 'rational expectations equilibrium'. The most successful implementation of these ideas is to be found in the Dynamic Stochastic General Equilibrium models (DSGE-models) that are increasingly used in central banks for policy analysis (see Smets and Wouters 2003; Christiano et al. 2005).

There can be no doubt that this approach to macroeconomics has important advantages compared to he previous macroeconomic models. The main advantage is that it provides a coherent and self-contained framework of analysis. This creates a great intellectual appeal. There is no need to invoke ad hoc assumptions about how agents behave and how they make forecasts. Rational expectations and utility maximisation provide the discipline for what is acceptable in modelling the behaviour of economic agents.

Problems with the models

This paradigm is, however, increasingly subjected to criticism which has become more intense since the start of the financial crisis. This criticism has been formulated at different levels.

Theoretical problems

First, the plausibility of the underlying assumptions has been questioned. There is a very large literature (preceding the current financial crisis) documenting deviations from the paradigm of the utility maximising agent who understands the nature of the underlying economic model. For recent surveys, see Kahneman and Thaler (2006) and Della Vigna (2007). This literature has followed two tracks. One is to question the idea of utility maximisation as a description of agents' behaviour. The other puts in doubt the rational expectations assumption.

Many anomalies that challenge the rational expectations assumption were discovered; see Thaler (1994) for spirited discussions of these anomalies; see also Della Vigna (2007). We just mention 'anchoring' effects here, whereby agents who do not fully understand the world in which they live are highly selective in the way they use information and concentrate on the information they understand or the information that is fresh in their minds. This anchoring effect explains why agents often extrapolate recent movements in prices.

Thus the accumulated scientific evidence casts doubts on the plausibility of the main behavioural assumptions in modern macroeconomic models. One could object here and argue that a model should not be judged by the plausibility of its assumptions but rather by its ability to make powerful empirical predictions. However,

11. The views expressed are those of the authors and not of the institutions with which they are affiliated.

empirical tests of the DSGE-models have generally not been favourable (see Chari et al. 2009; Juselius and Franchi 2009).

Empirical problems

The main empirical problem of the 'pure' micro-founded macro model with forward-looking agents appears to be that it underestimates the degree of inertia in wages and prices. For example, it predicts that when new information reaches the market, rational agents will immediately change their optimal plans, leading to instantaneous price changes. This prediction flies in the face of empirical evidence showing quite universally that prices have a strong inertial component and react sluggishly to shocks, see Nelson (1998) for empirical evidence; see also Walsh (2003).

The observed inertia in prices, wages and output has led macroeconomists to add lags into the models. In addition, the models were loaded with exogenous shocks exhibiting strong autoregressive structures. All this has made it possible to improve the fit of the models. The result has been that the models produce price and output dynamics that correspond to empirically observed ones but that it is not clear whether this comes from the lags and the autoregressive nature of the shocks, rather than from the rational-agent structure of the models (see Chari et al. 2009).

Despite their poor empirical record, DSGE-models have been influential in shaping macroeconomists' views about how the economy functions. This is very prominent in the way modern macroeconomists interpret the business cycle. Business cycle movements in the DSGE-models arise as a result of exogenous shocks (in productivity and preferences) and lags in the transmission of these shocks to output and inflation. This combination of exogenous disturbances and inertia in the transmission generates wave-like movements in inflation and output.

There can be no doubt that exogenous shocks matter in generating business cycles. At the same time it is equally obvious that DSGE-models miss an important feature of business cycle movements. The latter are

also influenced by waves of optimism and pessimism ('animal spirits') that are grounded in agents' imperfect understanding of the world and that, by their self-fulfilling nature, can create booms and busts endogenously. The macroeconomic developments of the last decade testify to the power of these waves of optimism and pessimism in shaping first the boom and later the bust phase in economic activity.

Modelling individual behaviour

Modern macroeconomics has also led to a methodological step that is becoming increasingly questionable. The paradigm of the utility-maximising individual agent who understands the full complexity of the world has an important implication. Since all individuals understand the same 'Truth', modern macroeconomics has taken the view that it suffices to model one 'representative individual' to fully represent reality. Thus in such a model there cannot be any coordination failures in which decisions of individual agents can lead to undesirable aggregate outcomes.

The representative agent fully internalises the external effects of all his actions. But macroeconomic fluctuations can also arise as a result of a failure of consumers and firms to coordinate their actions to achieve a good outcome. For example, the famous 'paradox of thrift' as formulated by Keynes arises from the fact that when savers all attempt to save at the same time they will fail to increase their savings. The economic downturn that started in 2007 again shows how these coordination failures can shape a recession. Akerlof and Shiller (2009) have recently made a case for the role of 'animal spirits' in shaping macroeconomic outcomes.

Possible new directions

From the preceding analysis we learn that modern macroeconomics has hit against its own limitations and that there is a need for going beyond the rationality paradigm. One fruitful new direction of research was given an impetus by Sargent (1993), and Evans and Honkapohja (2001) who in macroeconomic models introduced the notion that agents should not be assumed to be cleverer than econometricians and that therefore they should be modelled as agents who learn about the underlying model as time passes. This has led to models of learning in macroeconomics, which assume that agents use their estimated model in decision making. Slowly this idea is being incorporated into macroeconomic models. Much remains to be done, however, to analyse the implications of learning on macroeconomic dynamics.

Another potentially fruitful direction of research uses concepts from behavioural economics. This approach starts from the proposition that individuals understand only small parts of the total information set, and they are not capable of describing the statistical distribution of economic shocks. The cognitive limitations of individuals in understanding and processing information leads them to use simple rules ('heuristics') to guide their behaviour (see Gigerenzer and Todd 1999). They do this not because they are irrational but rather because the complexity of the world is overwhelming. In a way it can be said that using heuristics is a rational response of agents who are aware of their limited capacity to understand the world. In this sense they are 'boundedly rational'.

The problem with models based on bounded rationality is 'that everything becomes possible'. The challenge therefore is to introduce discipline in the selection of behavioural rules. This can be achieved by subjecting the selection of rules to a 'fitness' criterion, allowing agents to switch from one rule to the other. At the moment there is no 'consensus model' to bounded rationality though. Much remains to be done to achieve a formulation of bounded rationality that is broadly empirically workable and can be used in a wide variety of macroeconomic contexts.

Connections between policy and research

Macroeconomics has, for a fairly long time, had a close connection with current economic problems and policy making. Central banks, ministries of finance and major international organisations employ numerous economists with research training and many of these institutions have major research departments or institutes. While the connections between research and policy exist in different areas of economics, it can be argued that the link between policy and research is particularly close in macroeconomics.

The global crisis

The current global economic crisis is the best example of this connection. On the one hand, research on macroeconomic policy – both historical and analytical – plays an important part in policy making even if it is only one input to the policy-making process. There have been numerous financial crises since the 1970s, when the post-Second World War fixed exchange rate environment broke down and a gradual process of deregulation and liberalisation of financial markets started. Often these crises took place in developing countries, but there were also financial crises in advanced market economies (for example, see Reinhart and Rogoff, 2009).

The current financial crisis, which started in August 2007, differs from the earlier ones in that it is global in nature affecting all economies in the globe. The global nature of the current crisis means that policy is being

made in an environment where much is unknown and, in particular, empirical precedents do not exist. Another new feature of the current crisis is that it manifested itself in misguided financial innovation. See Rajan 2006 for an early warning, which was initially made at the 2005 Jackson Hole conference. The current crisis is providing several lessons that are going to require a re-orientation of macroeconomics, both in terms of areas of emphasis and also in terms of emerging huge gaps in knowledge requiring new research to fill these gaps.

Finance and banking

Given that the current crisis originated in the financial system, several areas in finance require a major research effort. One case is the failure of the efficient market doctrine. Most of the currently employed macroeconomic models assume market efficiency. This is not satisfactory. Problems with imperfect and asymmetric information and the behaviour of economic agents in response to these information problems will require greatly increased attention. In this field the paradigm of full rationality appears to be facing its limits. In practice individual agents cannot prepare in advance against all conceivable contingencies and, in situations of asymmetric information, different agents do not necessarily agree on the possible contingencies against which they would need to respond under full rationality (for example, see Tirole 2009).

The functioning of the international financial system and the behaviour of banks are two other major areas in which new research is badly needed. These areas have a direct connection to policy making and research can at best make a positive contribution to the beginning reforms of public policies and institutions. The new plans to reform the regulation of the financial system require that thinking moves away from the hypothesis of efficient financial markets and the associated very liberal attitudes. Providing input to changing financial regulation and reform of international institutions is a big challenge to the research community in macroeconomics and finance.

Economic growth

The preceding discussion has taken up policy issues and research challenges that arise from the current economic crisis. At the moment, these topics generate a lot of interest, but one should not lose sight of other major macroeconomic policy and research issues. To conclude this section we want to return briefly to the earlier distinction between short-to-medium term and long-term macroeconomic issues to stress the study of economic growth both as a programme of research and as a major area of policy concern.

Understanding the origins and factors behind long-term economic growth and development is perhaps the most important economic policy issue of the time. Differences in standards of living between countries continue to be large as a result of very differential performances in long-term economic growth. There are a number of growth miracles – especially among Asian countries – for which the accumulation of human capital, deployment of new technologies and various political and institutional factors are said to be the key element behind the success. In contrast, there are also notable cases of economic decline. Adverse political developments are often thought to be a key reason behind such declines. A third category consists of countries that have never taken off in terms of economic growth and improvement in material living standards.

Many models and theories yield explanations for good growth performance (see e.g. Aghion and Howitt 2009). These theories have provided a major input to various agendas for growth policy, such as the Lisbon agenda for the EU. Yet, the wide variety in long-term macroeconomic performance among countries leads to further questions. One should also try to analyse the reasons for failure in economic growth, both when countries decline after initial success and when they fail to take-off. Understanding the failures is as equally important as understanding the successes.

There is now a burgeoning literature identifying the factors that lead to failures in economic growth and development (see e.g. Rodrik 2007). This literature is still in its infancy. It is to be hoped that further research into the growth failures will allow us to develop methodologies to design growth policies that can be applied in different cultural and institutional settings, and in so doing will contribute towards improving the well-being of the world's poor.

Social and economic inequalities

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Social and economic inequalities are at the heart of many of today's concerns. There are fears that the fruits of economic growth have not been equally shared and that the burden of economic recession will be unequally distributed. Little progress is being made to overcome longstanding inequalities in health and mortality. Gender gaps have resisted legislative interventions. Groups such as the Roma are living on the periphery of our societies. The education system does not guarantee equality of opportunity. Everyone may have a vote but great wealth conveys political power. China and India may be growing rapidly but global income gaps are widening because much of Africa is being left behind. These issues of inequality have been the subject of much social science research. The breadth of the topic, and the diversity of research in different disciplines, is indeed such that it is possible here to highlight only four of the many ways in which social science has contributed to increasing our understanding of social and economic inequalities.

Clarifying concepts: the meaning of inequality

The first role is that of *clarifying key concepts*. The word 'inequality' is used frequently, but has many different meanings. Newspaper headlines say 'inequality increases', but inequality *of what* and *among whom?* Providing an answer to this question requires us to go back to the fundamental objectives of our societies. Here there have been important recent contributions. At a basic level, these have cast doubt on the classical utilitarianism that underlies much of normative social science, and there have been innovative proposals such as the difference principle of John Rawls and the capability approach of Amartya Sen. At a pragmatic level, the development of a social dimension to the European Union has meant that member states have had to make explicit, in the EU structural indicators, the criteria by which performance is to be assessed.

What does this mean concretely? To begin with, when we see statistics on inequality such as those presented in Figure 1, we have to be aware that they relate to inequality in a specific sense: in this case, the distribution of disposable income from all sources, after taxes and transfers, among households, with adjustments for differences in household composition. The footnotes are important. The distribution of earnings, for example, is different from the distribution of income. But this leads on to the question – why income? Those who remain close to utilitarianism certainly have a broader concern with well-being, and one of the major consequences of the alternative theories of justice of Rawls and Sen has been the adoption of a multidimensional approach to inequality. Rawls's list of 'primary goods' includes income and wealth, but is much wider, extending to what is necessary for the social basis of self-respect. The capability approach of Sen influenced the Human Development Index, which includes in its basic dimensions life expectancy, literacy and education, in addition to standard of living. When the EU drew up its indicators of social exclusion, member states were insistent that these should be multidimensional, and the indicators cover, among other things, life expectancy, education and joblessness. We are concerned about child poverty, but also about infant mortality, school exclusion, access to training programmes, quality of working life and discrimination.

Providing evidence

The second important contribution of social science is that of *providing empirical evidence*. Here there has been a revolution. Indeed, it is easy to forget how much data have improved. The original 1955 article by Simon Kuznets that generated a large literature on the evolution of income inequality over time was based on 5 observations for the US, 5 for the UK and 2 each for Prussia, Saxony and united Germany. Today, social scientists have created and now have access to large volumes of (typically anonymous) data on individual households, drawn from a variety of sources, notably household surveys, but also administrative records, population censuses and employer surveys. In a number of cases these data provide not only a snapshot but also longitudinal (panel) data following people over time. Findings from these empirical data have had a major impact on public policy. It was, for instance, widely believed in the 1950s that economic growth and full employment had abolished poverty. Social science research based on empirical investigation demonstrated that this was not true, leading to anti-poverty programmes and today's EU social inclusion process. The availability of panel data has allowed the evaluation of policy interventions in a way that controls for the differing characteristics of individuals, where these are unobserved but constant over time.

In this improvement in social data a major driving force has been the work of national and international statistical agencies, which have devoted considerable resources to the development of new sources. A notable example is provided by the European Community Household Panel (ECHP), conducted from 1994 to 2001. This was a major investment but one that has paid off handsomely in terms of social science and policy-relevant research, allowing the study of people's life chances as a whole. In this respect, it should be stressed that inequalities may be vertical, as in Figure 1, which shows how much more the top fifth receive than the bottom fifth of households. But they also have important horizontal dimensions,

where subgroups of the population – women, ethnic minorities, the disabled – are systematically in a less advantageous position.

As the volume of empirical evidence has increased, social scientists have been able to become more discriminating in its use. It cannot be assumed that a data series with the same title is comparable across time. The income inequality measures in Figure 1 had to use a different source when the ECHP came to an end, and was replaced by EU-SILC (Statistics on Income and Living Conditions). The breaks are shown. Tempting though it is, we cannot simply join up the segments for, say, Spain (although Eurostat must have spliced them in some way to arrive at the average figures for EU-25 and the Euro area).

Issues of data quality are of particular importance when it comes to international comparisons. The literature on social mobility provides a good example. Sociological researchers have shown how proper comparisons of the degree of mobility require that the occupational classifications be comparable across countries, which typically necessitates re-analysis of the original data. This raises in turn the issue of data access for scientific research. There have been major advances in data archives and methods of allowing indirect access to secondary data, such as the Luxembourg Income Study. In the development of EU-SILC, the key European source of comparative data on income and living conditions, access by academic researchers has been important. In general terms, it is essential that there be strong links between data collection and scientific research.

Understanding change

The third important contribution is that of *understanding social change*. There is much concern that new inequalities are developing, particularly as a result of globalisation and the move to knowledge-based technologies, while the old inequalities of social class are reasserting themselves. Taking just the dimension of income, we can see from Figure 1 that the Euro zone series shows a decline in inequality up to the year 2000, and then a rise; and broadly the same U-pattern is indicated by the EU-25 series. If we look at individual countries, we find that most show a fall in inequality between 1995 and 2000, but that there is a more mixed picture in recent years. In seeking to understand these changes, we have to ask whether the observed changes in the ratio of income shares are due to what was happening at the top or the bottom. In many European countries we have seen

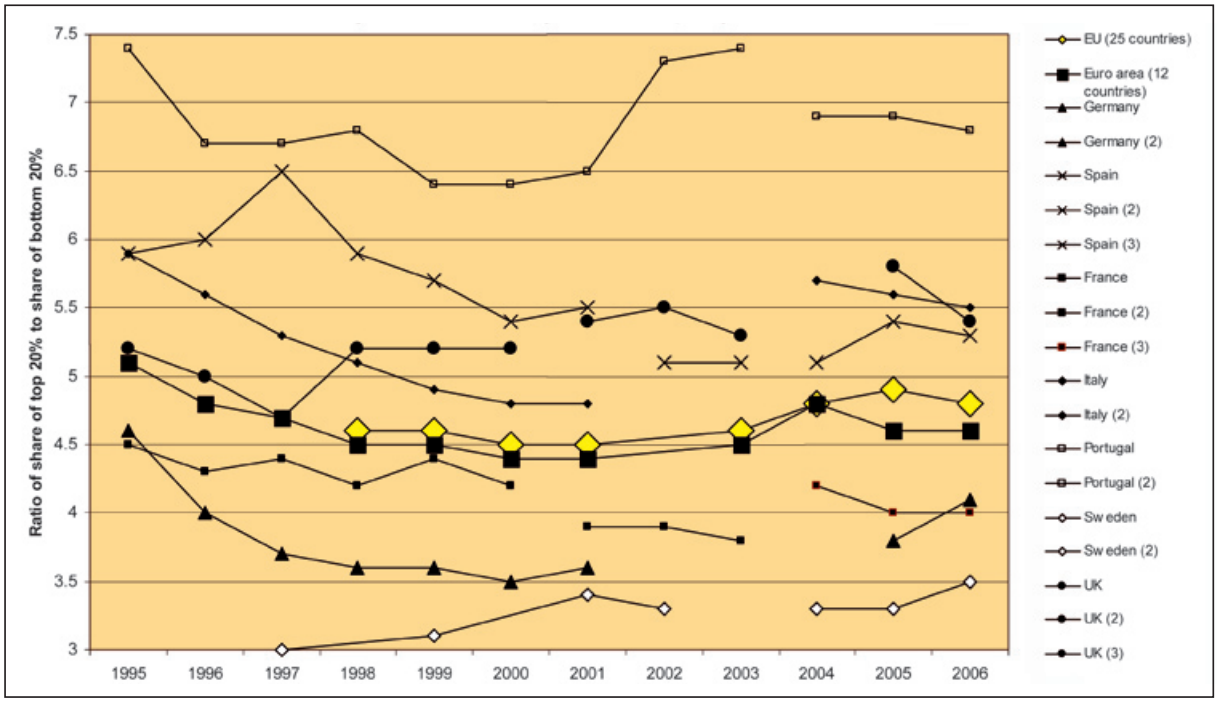

Figure 1. Within-country income inequality in EU-25 (1995-2006). The data are from the website of Eurostat, under 'Structural Indicators', and relate to household disposable income adjusted for differences in household size and composition with each person receiving a weight of 1. Breaks in the series are indicated by Germany, Germany (2), etc.

disproportionate increases in salaries at the top of the scale, and a rise in top incomes, with associated social advantages. At the bottom, one of the key EU structural indicators is the proportion of the population at risk of poverty, defined as having equivalised [12] household disposable income below 60% of the national median. The EU-25 figures show little change over the period 1998 to 2006, varying around 15%, but some Member States have seen an increase, that in Germany being particularly marked in the new Bundesländer. At a global level, we have seen a welcome fall in the proportions living on less than US$1 a day, but this is accompanied by widening differences between countries.

The movements in economic inequality just described may be the result of short episodes of policy change, such as deregulation of the financial markets, or the outcome of long-run developments. The hypothesis of Kuznets was indeed that in the *longue durée* industrialisation would be accompanied first by rising and then falling inequality – an inverse U-shape. Today, there is more concern that we might be observing, as in some (but not all) European countries, signs of a U-shape: the decline in inequalities over the post-Second World War period being replaced by a resurgence. A variety of explanations have been advanced. The textbook account is that ICT (information and communication technologies) has reduced the demand for unskilled workers and boosted the return to investment in education. The shift in relative demand towards skilled workers has been intensified by competition from imports from newly-industrialising countries. This explanation focuses on the disadvantages of the low-skilled, but has to be squared with the fact that the greatest distributional change is that affecting the top part of the earnings distribution (Atkinson 2008). The salaries of CEOs may well be affected by globalisation, but this is a rather different labour market. We have also to recognise that higher inequality of incomes may lead to increased inequality in other dimensions, such as access to education, to health care, to the legal system and in political power. There may be a self-reinforcing cycle of cumulative advantage and disadvantage.

Analysing policy

The final important contribution discussed here is that of *policy analysis*. It may be that the cumulative cycle can be broken only by government intervention. Inequalities are indeed on the political agenda. National governments have set targets – for poverty reduction, for minimum educational standards, for access to health care – and progress is being monitored by social indicators. But the

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links between policy and outcome are not well understood. Social scientists contribute to policy analysis in several different ways. Policy makers can draw inferences from analyses of household decisions regarding such matters as education, labour market participation, migration, housing tenure and leisure activities. Such analyses have been influential in the planning of government programmes such as those for early childhood interventions. The availability of data on individual households has allowed the construction of microsimulation models, where changes in policy parameters can be modelled and their distributional consequences investigated. Use of these social science tools has allowed governments to design schemes such as in work family benefits that have the potential to improve both social justice and economic performance. The data-based models are providing a vehicle to test the effectiveness of the welfare state in moderating the consequences of the recession. Indeed, in all of the elements identified here – clarification of objectives, empirical assessment and understanding social change – social science research is an essential input into the better design of policy.

12. To make equivalent

Tackling social inequalities in health

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Historical perspectives

During the industrial revolution, working class people lived shorter and unhealthier lives than the wealthier classes. Their living and social conditions were the main factors contributing to disease and early death. The first wide-ranging social surveys launched during the 19th century explored this relationship between social condition, poverty and health. In 1840, Louis Villermé first revealed the relationship between poverty and health. Sir Edwin Chadwick, in his 1842 English Sanitary Report, examined sanitary conditions and found that in urban Liverpool the average age of death in 1842 for professionals was 55 years, for farmers 22, and for mechanics/labourers was only 15 years, (i.e. a gap of around 40 years). On the basis of these and similar findings he argued that: "After an examination of the evidence I conclude that the various forms of epidemic disease amongst the labouring classes are caused by atmospheric impurities, by damp, filth, close and overcrowded dwellings".

In 1899, Seebohm Rowntree conducted a social survey in York, England, and collected information on the housing, poverty, health, social, economic and living conditions of people living in 15 000 'houses' with an estimated population of 75 812 inhabitants. He recorded the annual death rate in the poor areas of York as 27.78 deaths per 1 000 population and in the rich areas 13.49 deaths. He declared: "It will thus be seen that the mortality amongst the very poor is more than twice as high as amongst the best paid section of the working classes." (1901:205) Rowntree further examined infant and child mortality and carried out a careful investigation into the height, weight and general physical conditions of children. He concluded that "all three tests point clearly to the low standards of health amongst those living in poverty" (1901:216).

In the middle of the 20th century, also in the UK, Sir William Beveridge was responsible for the 1942 Report on Social Insurance and Allied Services (known as the Beveridge Report). He recognised five 'giant evils' threatening post-Second World War society: 1. Want (poverty); 2. Disease (ill health); 3. Ignorance (lack of education); 4. Squalor (poor housing); and 5. Idleness (unemployment). He proposed a welfare plan to tackle these five giant evils. Since Beveridge, the persistence of inequalities in health over time has been at the centre of social and health science discussions. In the 1980s the publication of the Black Report raised interest in policy intervention. In 1987 the World Health Organization adopted the reduction of health inequalities by 25% as one of the core targets of 'Health for All by the Year 2000'. Eminent social scientists developed theoretical and empirical approaches to the investigation of the determinants of health inequalities.

Global inequalities

Taking a global view, the 2008 World Health Organization Report (WHO) demonstrates the existence of striking inequalities among nations, regions and socio-economic groups. These inequalities have been documented over the years on the basis of aggregate health outcomes measured by life expectancy and mortality and morbidity indicators as well as by population-based epidemiological studies and health interview surveys launched at a national or international level. These represent a major contribution of social science to the understanding and resolution of societal problems.

Comparing life expectancy globally, the report shows that at the turn of the 21st century the differences in life survival between poor and rich populations still exceed 40 years. Despite a 34% reduction in global infant death rates between 1975 and 1995, large differences in infant mortality persist. This may be attributed to the fact that a significant proportion of the women who will give birth this year will not receive any medical assistance during childbirth and the postpartum period. It is argued by Ann M. Veneman, Unicef Executive Director, that "high maternal, infant, and under-five mortality often indicates lack of access to basic services such as clean water and sanitation, immunisations and proper nutrition".

Important global differences have also been recorded in per capita health expenditures ranging from US$ 20 per person to over US$ 6 000 per capita. About 50% of the 5.6 billion people who live in low- and middle-income countries do not receive public health services and have to pay out of pocket for health care. Because of the increasing cost of health care, a rising number of people cannot afford to pay the cost of health services; more than 100 million people every year find themselves below this poverty threshold.

The WHO report underlines the fact that many reforms in the health care systems do not fulfil the overall objectives of equity, effectiveness and efficiency. The principle of fair access to care is not satisfied for impoverished and marginalised groups. Finally the report notes that "inequitable access, impoverishing costs, and erosion of trust in health care constitute a threat to social stability". It is argued in the report that the overall strategy for tackling health inequalities is to ensure universal coverage and financial sustainability of health systems. Fairness and efficiency in the finance and delivery of services should be the long-term goals of governmental policies.

Inequities in the EU

Wide disparities in several dimensions of health measured in terms of mortality, morbidity and subjective health have been identified in the enlarged European

Union. While governments in the 1980s were more interested in cost containment and efficiency, equity became an important policy objective in the 1990s and 2000s. The 27 European member states each have their own organisational structures and have implemented several reforms towards providing greater efficiency and equality in the finance and provision of health services. However, despite the common endeavours, there are distinctive characteristics which differentiate the new member states of Central and Eastern Europe, from the previous EU-15 States. Health status and health expenditure present substantial differences between the two groups of states and an East-West divide in life expectancy, mortality and morbidity has been documented.

The European Health Divide

Increasing inequalities in health between Western and Eastern European countries have been recognised since the 1930s (League of Nations, Health Organisation, 1932). During the 1980s and 1990s, equity became a popular research topic and inequities between the west and eastern European countries were described as 'the East-West mortality divide' or the 'European Health Divide'. The transition from communism to democracy and the market economy brought a dramatic deterioration in life expectancy, rising inequalities and the explosion of an underground economy in the health sector. According to the most recent Eurostat figures, the gap in life expectancy at birth between EU countries for women is 8 years (Bulgaria 76.3, France 84.4) and for men it is 13 years (Latvia 65.4, Sweden 78.8). There are 23 times more cases of tuberculosis in Romania than in Sweden (per 100 000 inhabitants). Heart diseases kill proportionately 12 times more women in Lithuania than in France.

After 1989, in the former Eastern European countries, informal payments for health care became an important reason for introducing health reforms. An increasing number of international studies have indicated that informal payments have a negative effect in access to health care; they force poor people to liquidate assets and to delay contact with the health system. Informal payments in the transitional economies have also been shown to be a contributory factor in inequities in health and health services.

The European Social Survey

A primary source for documenting and understanding health inequalities is the European Social Survey, which is now a biennial survey conducted in more than 30 European countries. The European Social Survey has achieved world recognition in the social sciences as a useful instrument to describe social values, beliefs and ideas on European life and social changes. It is the first social science recipient of the Descartes prise. The data of our analysis come from the second round conducted in 2004-2005 and cover subjective evaluation of health in comparison with subjective assessment of the individual's financial condition. In the scatter diagram below (Figure 1) are the results of the analysis: The horizontal axis gives the proportion of European people who declared that "they confront great difficulties with their income nowadays" while the vertical axis shows the proportion of Europeans who declare that their health in general is "very good". Examining the responses in subjective health we can identify wide inequities ranging from Ukraine (1.9%) to Ireland (43.8%) declaring very good health. Overall a negative relationship is identified between subjective "very good" health and subjective economic subsistence (see Figure 1).

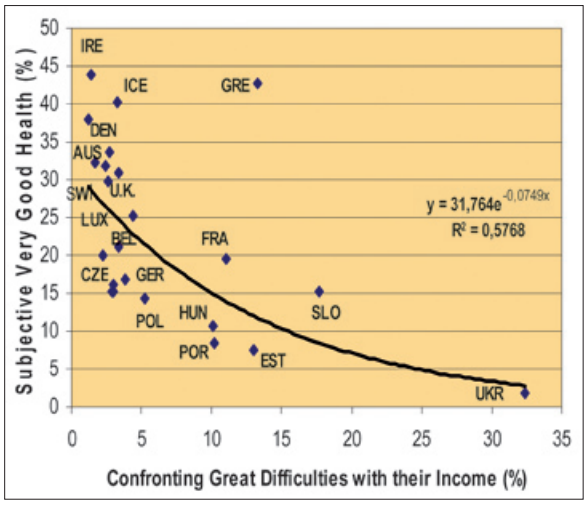

Figure 1: The relationship between health and low income

Health policies

Tackling health inequalities has been at the core of the political agenda. All European countries have implemented a range of actions and policies against such inequalities. Finland has focused on the poor and young people's health, adopting measures against tobacco and alcohol consumption. Latvia has banned smoking in public places. Kazakhstan has incorporated in its 2009-2010 health budget, specific targets on tackling health inequalities. Similarly Portugal in its 2009-2010 health plan has foreseen the development of mobile units in order to offer services to immigrants and other vulnerable groups. Germany has focused on the elderly and has implemented intelligent measures to ensure equitable distribution of services with robust financing.

The European Commission's health strategy for 2008-2013 highlights the need for a common strategy based on 'shared values' of universal access to good quality care, equity and solidarity. The Commission emphasises the need for a greater response from many policy sectors to reduce the unacceptable geographical and social inequalities in mortality and morbidity.

Multisectoral actions

There are important economic and social arguments for a multisectoral approach since health contributes not only to the human and social capital of a society but also to productivity, consumption and investment. Targeting the poor is not the only measure to reduce inequalities. Intersectoral actions need to be incorporated in all economic, social and health policies to promote child health, education, healthy environment, fair employment opportunities, fair financing and distribution of social protection benefits, and effective governance.

Multidisciplinary research

It may be asked to what extent the objectives of equity and 'health for all' are feasible; are they rather an utopian goal? An interesting answer to this question is given by Dr Halfdan Mahler, who served three terms as Director-General of the World Health Organization (WHO) from 1973 to 1988: "The goal 'Health for All' was to focus world attention on health inequities and on trying to attain an acceptable level of health, equitably distributed throughout the world". In a similar vein the European Strategy for Health 2008-2013 invites the member states to redefine their health objectives and to implement policies to fight poverty, social exclusion and inequities in health.

Social science can contribute to these noble objectives by offering methodologies to analyse both the macro and micro aspects of health inequalities. At a macro level, international, national and regional health policies towards equity and social justice could be assessed using aggregate data. The pro-poor or pro-rich redistributive effects in the financing and delivery of health services could be examined and effective health policies could be drawn.

At a micro level the individual health-related behaviour could be analysed by using theoretical and empirical models. Social and health surveys have been launched based on rigorous sampling and methodological techniques in order to construct valid and comparative quantitative and qualitative indicators to monitor progress towards 'closing the gap'. Furthermore the tools of social science have been used to examine the social determinants of health inequalities with regard to:

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- the psychological factors: i.e. smoking and alcohol addiction, psychosocial stressor, anxiety, depression;
- the economic factors: i.e. housing conditions, income education, employment, health expenditure, healthy diet;
- the demographic factors: i.e. age and gender;
- the sociological factors: i.e. ageism, discrimination, poverty and social exclusion satisfaction with health and welfare services, healthy life style;
- the political factors: i.e. trust in institutions, access to health care, bureaucracy, corruption public-private mix, public health.

The contribution of social science in shaping effective efficient and equitable health policies is indispensable. Social science research provides the theoretical and empirical framework to fight what Sir William Beveridge considered as the five 'giant evils' of our society: poverty, ill health, ignorance, squalor, idleness.

The ageing of the European population

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Ageing in Europe

Most regions in Europe are experiencing rapid demographic ageing as a result of low fertility and increased life expectancy. The number and proportion of the elderly (65+) and particularly of the old (80+) have reached hitherto unequalled levels. Europeans have amongst the highest levels of life expectancy in the world, and 19 of the 20 'oldest' countries in terms of population ageing worldwide are in Europe. People not only live longer, they live longer in good health. However, there are significant regional differences in life expectancy in general and healthy life expectancy in particular, including a considerable gap between Central Eastern European countries and other countries of the EU-27 (see Table 1). Male life expectancy at birth is for example 79 in Sweden and Switzerland, but only 60 in Russia, 70 in Slovakia, 71 in Poland and 73 in the Czech Republic; discrepancies in female life expectancy are similar but smaller.

Europe is seeing the 'feminisation of old age' – the higher ratio of women versus men in older age groups – reflecting the global phenomenon that women live longer than men. In 2002, the ratio was 678 men to 1 000 women aged 60+ in Europe. The reasons for this phenomenon are manifold, but are primarily related to gender differences in life-style and health behaviour. The longer life expectancy of women has significant psychosocial and health-related consequences and, as women are more likely than men to live to a very old age, they are also more vulnerable to disabilities such as dementia and multiple health problems, which are known to increase substantially after age 80.

At the same time, there are important differences in life expectancy and overall health status *within* European countries. The ageing population itself has become more heterogeneous; the result of large inequalities in socio-economic conditions after retirement on the one hand and of strong differences in individual ageing processes related to specific family structures, health and personality profiles on the other hand.

Economic integration within Europe has been accompanied by the migration of workers, resulting in an increasing number of elderly migrants and a growing proportion of elderly care being provided by foreign-born professionals. The elderly also migrate more often than in earlier decades.

The demographic ageing of European society is furthermore characterised by significant changes in both the scientific knowledge on processes of ageing and in the social life-styles of the elderly. In fact, the later stages of life are rapidly changing, as new generations enter old age. Social scientists have explored two main aspects of ageing. A first aspect is the delineation of

Member States	Life expectancy at birth[a] (years)								
	Male			Female			Both sexes		
	1990	2000	2006	1990	2000	2006	1990	2000	2006
Czech Republic	68	72	73	75	79	80	71	75	77
Denmark	72	75	76	78	79	81	75	77	79
Finland	71	74	76	79	81	83	75	78	79
France	73	75	77	81	83	84	77	79	81
Germany	72	75	77	78	81	82	75	78	80
Greece	75	76	77	79	81	82	77	78	80
Ireland	72	74	77	78	79	82	75	76	80
Italy	74	76	78	80	82	84	77	79	81
Norway	73	76	78	80	81	83	77	79	80
Poland	67	70	71	75	78	80	71	74	75
Portugal	71	73	75	77	80	82	74	77	79
Russian Federation	64	59	60	74	72	73	69	65	66
Slovakia	67	69	70	76	77	78	71	73	74
Sweden	68	77	79	72	82	83	70	80	81
Switzerland	74	77	79	81	83	84	77	80	82
Turkey	63	67	71	67	72	75	65	70	73
United Kingdom	73	75	77	78	80	81	76	78	79

Table 1: Life Expectancy in Europe (http://www.who.int/whosis/database/life_tables/life_tables.cfm, accessed 18 March 2008)*.

different phases of individual ageing, and a second one, the development of new models of ageing, allowing innovative policies for different 'cultures of ageing'.

Phases of ageing

In the past, people aged over 60 could not expect to live for many years; they are now confronted by very different life challenges. They can expect to live through at least three stages:

1. Stage of healthy ageing (the so-called 'third age'): At this stage of life, women and men often profit from an economically secure retirement in good health. They are free from work, but they experience – as result of an extended welfare system in many European countries – good social security, enabling them to organise their lives freely. Some are strongly involved in volunteer work. Others use their 'late freedom' to pursue their hobbies or to engage in new educational activities. The duration of a healthy retirement is strongly related to socio-economic factors (income and wealth after retirement, earlier occupational status, educational attainment, housing conditions etc).
2. Stage of frail age (the so-called 'fourth age'): With increasing age – although this is strongly dependent on earlier occupational risks, biographical stress and genetic factors – the risks of age-related health problems and functional disabilities increase. After age 80 the age-associated biological risks become more prominent. A majority of this age group need partial help and support, but – not yet – daily care. A crucial factor for quality of life during frail age is a fit between individual competences, housing conditions and home-care.
3. Stage of strong dependence ('end of life'): most old women and men at this stage are strongly dependent on family or professional care. Both the start and the duration of dependent age are strongly related to socio-economic conditions. At high ages the risk of multimorbidity and functional dependence increases due to biological ageing processes, and dementia is one of the most feared risks of old age (about a third of European people aged 90 and more are confronted with dementia). Care systems at this stage of life vary strongly within Europe, characterised by a North-South divide (primarily professional care in the North, systems of family care in the South).

Each of these phases requires the development of different and new policies designed by social scientists. Most attention has been given to the phase of healthy ageing in order to promote positive concepts of active ageing. The 'third age' has seen particularly rapid changes between successive cohorts in concepts of the appropriate age for retirement and the activities and capabilities of the retired; services and facilities need to be developed to cater for this active group, often with high disposable income. The 'third age' is at the same time characterised by large (and in many countries increasing) inequalities regarding the engagement of the elderly in voluntary work, educational programmes or adaptation to new technologies. Concepts of active ageing tend to reinforce the social heterogeneity of the elderly.

The fourth age, by contrast, is still more defined by deficit-oriented discussions on care, as welfare services find difficulty in coping with the growth in populations needing assistance. The stage of frailty, is the phase of life when new links between biological-genetical research and social gerontology become more and more salient; difficult choices are required when expensive medical or pharmaceutical treatments may prolong life by only a short time.

New models of ageing

We observe in Europe, with interregional different emphasis, the development of new models, which incorporate knowledge of these phases of ageing. Against the background of a widening gap between lower retirement age and increasing (healthy) life expectancy, new social science concepts on innovative paths to retirement and reforms of the pensions systems promoting a longer work-life are developed. The same is true for new concepts on the social roles and responsibilities of the elderly. Resource-oriented concepts, but also anti-ageing movements and social-political discussions on intergenerational equity reinforce a development towards more active concepts of ageing within a rapidly changing

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* World Health Statistics 2008 – Explanatory Notes
- The responsibility for the interpretation and use of the material lies with the user.
- The figures contained in this document correspond to the published version of the WHS 2008 and may differ from those posted on the database at www.who.int/whosis. Please refer to the website for updates.
- Figures have been computed by WHO to ensure comparability; thus they are not necessarily the official statistics of Member States, which may use alternative rigorous methods.
- For indicators with a reference period expressed as a range, figures refer to the latest available year in the range; except in Inequities in health care and health outcome, where the figures refer to the period specified. For specific years, indicator definitions and metadata, please refer to http://www.who.int/whosis.
- The global, regional and income aggregates for rates and ratios are weighted averages when relevant while for absolute numbers they are the sums. Certain Member States do not have an associated income group and are not included in aggregate calculations.
- Includes Corrigenda: for version accessed on or before 20 May 2008.

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society; the old are encouraged to take more responsibility for themselves – through extended working lives or other activity – rather then relying on support from younger generations which are shrinking in size.

By linking economical, sociological and psychological perspectives social science research explores the development of historically new models of ageing:

First, models of 'lifelong learning' emphasise the promotion and updating of skills among the elderly, essential for better adaptation to constant changes in an increasingly interconnected world. Second, concepts of 'productive ageing' are linked to discussions about later retirement and the value of voluntary work for the elderly. Third, the concept of 'autonomous and creative ageing' emphasises the need for lifelong and self-regulated psychological development within a technologically rapidly changing society. Fourth, the model of solidarity-supported ageing relates to the responsibilities of the elderly to support intergenerational and intragenerational solidarity. As these models are explored by social scientists, they point to the changes in pension provision, health care systems and professional care which will be needed to accommodate to the demographic future.

Social science and policies for ageing

By 2050, one-third of Europe's population will be over 60, compared to 13% who will be under 16. The number of people over 60 will increase by 44% between today and 2050. The number of 'oldest old' aged 80+ is expected

to grow by 180%. Lack of informative data on persons aged 60 and over is exacerbated by the fact that there is a tendency to lump all persons over 60 together as a homogeneous group. Social science can contribute to a better understanding of this complex phenomenon and to decision making in social and health policy. The social sciences have, for example, provided research tools for understanding how people live and what they want (especially qualitative research), for social monitoring and identifying the extent of needs (social surveys), for identifying financial gains and losses (economic analysis), and for programme evaluation. One example of good practice is the Healthy Ageing Project (European Union Public Health Programme in collaboration with the World Health Organization, EuroHealthNet, and other partners), which defined – based on a systematic review of large interdisciplinary studies – core principles of healthy ageing, formulated concrete priority topics of action and proposed recommendations for policy, research and practice to the European Commission and the member states (www.healthyageing.nu). Another example is the Interdem (http://interdem.alzheimer-europe.org/), a research group that has reviewed, collated and disseminated for use into routine practice, the current evidence base for psychosocial interventions in early stage dementia across Europe, harmonised related clinical outcome measures for use in routine practice. It has developed a set of process quality indicators to enhance the implementation of evidence-based psychosocial interventions into routine practice.

The most relevant current topics, which deserve a high priority in the social science research agenda, are:

1. Ageing-workforce, new paths to retirement, and new forms of working at higher ages. Social science research projects indicate that a longer work-life is certainly possible, if pension systems, health care and work-life balance of older workers are reformed in a systemic way. Finland is one country that has successfully changed working patterns of older workers.
2. Changing life-styles and social activities among different groups of healthy retirees: Social science research demonstrates the importance of cohort effects on life-styles among the elderly, resulting in social adaptations of voluntary work or health-care systems of new generations of older women and men. Processes of migration result in the need to look in more detail at multicultural dimensions of care for and social networks among the elderly.
3. Determinants and processes regulating different paths towards old age. There is empirical evidence showing the importance of biographical and personal factors in coping with age-related changes, and particularly with increasing frailty. This yields new concepts among professionals to deal with the needs of old people. As the number of older migrants increases, the importance of multicultural gerontological approaches becomes more salient (e.g. it has been shown that biographical reminiscence is a very important part of coping with older migrants ageing in a foreign country).
4. Life-styles and psychological regulation among the very old: A new topic is the study of individual and social factors determining a high quality of life and well-being among people aged 90+. Recent social science research shows that at a high age, professional and family-related care systems are strongly interlinked. Intergenerational help is, for example, stronger in European countries that have elaborated professional care systems. New studies on supported care for the very old also demonstrate the validity of linking personal and ecological variables for a long autonomous life at higher ages.
5. Contextual factors affecting ageing and old age: New technology can facilitate the situation of older men and women, but only – as social science research indicates – by linking technological progress to strong social networks. Social science can help to avoid the emergence of a long-term 'digital divide' among the elderly.
6. The importance of welfare-systems has been clearly demonstrated but new social science research is needed to adapt pension systems or care systems to a situation of highly individualised and social heterogeneous ageing.

In summary, the social sciences can and should provide knowledge on how to increase opportunities to age successfully and to overcome constraints that limit opportunities, and help in creating a social world that improves life experiences for people of all ages.

Challenges facing the educational system

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Introduction

Nowadays, educational topics are often in the headlines. The OECD's yearly reports (Education at a Glance) are eagerly awaited by the media and politicians, as are the publications of international comparative studies such as the *Progress in Reading Literacy Study* (PIRLS), the *Programme for International Student Assessment* (PISA) or the *Trends in Mathematics and Science Study* (TIMSS). Politicians want to find out about the strengths and weaknesses of their own educational system while also obtaining suggestions from international benchmarks to make policy decisions.

All this, together with an increasing tendency to consider empirical evidence when making decisions on educational policy, is based on developments in the social sciences in recent decades. Social science research has produced:

1. New test conceptions and evaluation models which allow reliable measurements of advanced competencies.
2. A great number of reliable and valid indicators for lesson and school quality.
3. Theoretical models which allow characteristics of social and cultural background to be surveyed and interpreted.
4. New sophisticated procedures which make economical sample designs and analyses of background conditions possible at different aggregation levels.

This progress in theories and methods has created a systematic education-monitoring system both at an international and a national level. This monitoring system surveys educational results and takes both input and context factors (educational output, incentive structures) as well as the qualities of educational processes (learning and performance climate) into consideration (Seidel and Shavelson 2007).

The development of a scientific monitoring system, both within Europe and worldwide, has been driven by the importance which education has in a global knowledge society and the fact that this importance is becoming increasingly clearly recognised. In a knowledge society, education becomes a prominent production factor for the further development both of the individual and that of society. Beyond that education in general creates relevant preconditions for physical and mental health and for the readiness to engage in different areas of human expression. However, the dynamics of a knowledge society also bring new challenges for learning. What is needed is intelligent knowledge which can be applied flexibly. Learning is not restricted to a certain life phase or an institution (school); it becomes a continual task ranging across the life span.

There are at present four main challenges for educational systems in Europe; they are also challenges for educational research in Europe.

Participation in society for everybody

Democratic societies are based on the political participation of their citizens. Educated populations are thus fundamental to Europe's democracies. Crucial political decisions, such as those about environmental problems, depend on the number of people who make decisions based on a good information base. But, in addition, training and further education protects against unemployment, results in different levels of income, and, on average, promises better health status. It can also be a major factor in decisions as to where to locate economic activity. Finally, education helps to understand oneself in relation to the social, cultural and physical world, and to develop meaning as well as identity engaging in diverse cultural and social activities.

The basic requirement for participation in society is often termed 'Literacy'. In a narrow sense, this refers to reading and writing as key competencies: in a knowledge society, knowledge is stored and transported in the form of texts (of different types, including tables, figures, diagrams). Thus, literacy necessarily refers to the advanced competencies of gaining knowledge by reading or making knowledge accessible to others by writing. In a metaphorical sense, one also speaks of mathematical and scientific literacy which are also understood to be key competencies in a society and culture formed by the sciences, technology and mathematics. Literacy, however, can also be seen as a key to manifold cultural artefacts, traditions and activities. Research in education is centrally concerned with how to promote and sustain 'literacy' in our societies.

Comparative studies which describe the average competency level and the distribution of basic competencies at a national, European and international level (such as the OECD's Programme for International Assessment) show huge differences between (European) countries' average levels, which correspond to differences in development of two or three school years. They show that different countries have hugely different amounts of success in guaranteeing an acceptable basic level of education for all young people. In several European countries, due to their lack of competence in the areas of reading or mathematics, more than a quarter (e.g. Portugal, Spain, Italy, Greece), sometimes more than a third (Turkey), of young people have poor future prospects of successfully completing a train-

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ing or third-level education course, having a job, or participating in social and political life. This produces huge follow-up costs in remedial education and, at the extreme, crime and punishment. But the greatest loss is in wasted potential.

An important object of research in educational science is therefore to analyse the background conditions of different competency gains which result, amongst other things, from the degrees to which different family surroundings provide encouragement and motivation. The links between characteristics of social background, participation in education (from pre-school institutions to institutions of adult learning) and the development of competencies lead, in several countries, to unequal chances for population groups as well as the neglect of cognitive potential. These problems may require major societal interventions. But research also illuminates the conditions behind the successful teaching and learning of basic competencies in educational institutions. Particular forms of teaching can compensate for poor earlier performance and can help to equip young or older adults with necessary basic competencies well beyond school.

New blood for the challenges of the future

In some respects education does not differ greatly from sport. In order to have a strong top group, one needs as broad a range as possible. However, a look at the distribution of competencies reveals that countries, regions or even individual schools have different degrees of success in detecting and promoting talents. Europe cannot afford to have poor performance or to neglect potential. In many European countries, falling birth rates mean changes in the age pyramid. In order to be able to meet the need for highly qualified workers in research, development and production, more young people must be won over and trained in these areas. Guaranteeing new blood – in particular, in the areas of mathematics, science, information technology and technology – not only depends on cognitive abilities but also on attitudes and interests. In the recent past, several Reports of the European Commission have drawn attention to this problematic situation (European Commission 2004, 2007). One specific problem is still how to encourage girls to study more science and technology and to persuade them to continue on to further training and university courses.

How can this problem be solved? Current social science research provides convincing evidence that motivational factors are behind the choice of studies or career. These motivational factors are related to self-concept and beliefs in self-efficacy, the image of science and technology, and the development of interest. Many results show that motivational differences arise over the course of schooling, especially at secondary level, and that these differences can be largely traced back to lesson approaches. This means that they can be corrected. In addition, there is evidence that a stronger orientation towards application and an emphasis on access to research in science lessons has a positive effect on the cognitive skills and motivation of both girls and boys. Thus social science is pointing the way to changes with great potential benefit for Europe.

Lifelong learning

Dynamic advances in knowledge and the shortening of production cycles mean that new learning challenges have to continually be faced in order to be able to keep up with the developments. Even after a long period of third-level education or training, nobody today has completed their training. On the other hand, technological developments and the World Wide Web make extensive knowledge supplies accessible to everybody. These developments mean new challenges for learning in school and other educational institutions. At the core are the basic competencies which can be connected to further learning, or the basic ways of thinking and working in a discipline which are necessary in many situations. Increasingly, the question of how learning can be supported over the whole life span must be asked, both in the context of job requirements and in important everyday contexts which concern, for example, health, the environment or politics.

The need for lifelong learning requires a change in curricular orientation and a much better harmonisation of curricula between different training and learning phases. The contribution of educational research must also be to clarify requirements as well as to explain models of competency development and examine their coherency. The requirements of both receiving and delivering educational institutions must be adapted to each other and instruments must be made available to enable reliable measurements of flexibly applicable knowledge which can be easily connected to further contexts. In the context of lifelong learning, questions of motivation and beneficial learning incentives also gain central importance. A separate object of research can be seen in the challenges of learning with information technology – over the whole life span.

Migration and integration

In a united Europe, mobility and migration are welcome but also bring problems. Across Europe, there are major differences in the proportions of immigrants and in the reasons for immigration. The migration situation in European countries with a pronounced colonial history is different from those countries where there is high immigration due to economic reasons (job immigration). Education has a crucial role to play in alleviating the difficulties and negative consequences of migration and in enhancing the benefits of mobility. Command of the language of the country, for example, plays a significant role in integration. The language of the country of origin, however, is not simply replaceable, because it still plays a central role for the communication and cultural participation in family and neighbourhood settings. The educational system is expected to make a considerable contribution and to affect the generation of immigrants themselves, who must be supported in language acquisition, but also (or even more so) that of their children (often called ‘second generation’) in the second language as well as in their mother tongue. However, at present Europe is failing. The data currently available show that children with a migration background (of the first or second generation) on average have a much lower performance level in training courses and further-education certificates, and also in the competencies measured, than children without a migration background. These differences can mostly be traced back to differences in social background.

Educational institutions are faced with the challenge of giving children and young people equal and fair chances to develop, irrespective of their social and cultural background. As numerous results show, the early learning of the language which is used in school plays a crucial role in successful integration. However, many studies indicate the difficulties with which schools are confronted, for example, due to compositional effects. Children from immigrant families are not evenly distributed across all the schools in a country. Rather, they increasingly attend (e.g. because of their place of residence) certain schools. This can lead to those schools having very large proportions of children and young people with a migration background (frequently from many different countries of origin) to instruct. The corresponding compositional effects worsen these children’s chances of developing competencies which will provide them with good perspectives for a successful training course and career. The example of compositional effects also shows that although educational concepts are important in the schools concerned, they need to be supported by school and social policy. Longitudinal databases show strongly how important early education and training is for social and economic integration and success.

Evidence from the social sciences substantiates the claim that an early acquisition of the common language in kindergarten and school is a crucial factor for success and integration. Evidence also shows, however, that integration depends on a balanced preservation of non-national languages and cultures.

Evidence-based educational policy

Due to the exceptional quality of the methodological foundations on which current educational research in Europe is based, the empirical findings which it has presented in recent years have to be taken seriously. Public attention is particularly directed towards educational research when its research findings indicate considerable problems in educational systems. The way in which the public and political sector can react to the findings of educational research can be seen from the example of the publication of the OECD's Programme for International Student Assessment in Germany, but also in a whole group of other countries (e.g. Austria, Denmark, Luxembourg, Norway). In Germany, educational policy was seriously shaken by the Programme for International Student Assessment (PISA). As a consequence of its results, the basic structures of the school system were questioned and changed in several federal states and new national curricular benchmarks (standards) and nationwide evaluation procedures were set up, along with reform programmes from pre-school education right up to teacher-training programmes.

The progress which has been made in educational research confirms beliefs that – similar to the health sector – future political decisions and professional measures in the area of educational science should increasingly take empirical evidence into consideration. Several European countries (e.g. United Kingdom, Netherlands, Germany or Nordic countries) are already showing quite pronounced tendencies towards this.

Conclusion

However, educational research is still a long way away from medical research in its scope and magnitude of funding. At present, educational research is first and foremost capable of providing descriptive knowledge which identifies problem situations and challenges. This knowledge is highly relevant for evidence-based educational policy as it provides reference points for political decisions. Studies (for example, with longitudinal designs) which identify causally relevant conditional factors and thus provide explanatory knowledge are particularly helpful in this area. However, these studies are very complex and expensive. There is a special demand for studies providing knowledge of effective measures to achieve specific aims under given conditions in an educational system. In order to obtain this type of technological knowledge, systematic experiments in the laboratory and in the field are necessary, together with cleverly planned intervention studies. In the future, these types of studies must be strongly supported in order to provide better knowledge bases for political and professional players in the area of education in Europe.

The Janus face of migration in Europe

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Introduction

Migration is both a result and a cause of rapid economic, social, cultural and political change, making it a multifaceted phenomenon that touches upon nearly every aspect of life. The heart of the matter is that migration is invariably instrumental in achieving benefits for individuals and societies but can be detrimental at the same time. For the individual, migration opens doors to new opportunities to improve well-being and to accumulate human capital. At the regional level, migration clears labour markets and provides an adequate workforce for wealth accumulation in the face of global competition. The down-sides are also well-documented. The migrant may belong to the most resilient in his original community, but can often be found in vulnerable, marginalised positions in the settlement societies. Economic restructuring and downturns render (imported) human capital obsolete and create tensions among the indigenous population, adding ethnic labels to social disintegration. Governments therefore, like Janus[13], carefully keep the gates and watch the passage of migrants into their countries.

Europe in particular is facing major challenges on every possible spatial scale. All countries show a growing internal diversity among regions in the extent to which they are successful in the global economy or in securing a share in the rapidly expanding tourist sector. Labour- and amenity-driven migration produce a redistribution of population and wealth, creating needs for managed growth in one region and planning for decline in the other.

The internal European market cannot develop without the free movement of labour, yet relieving constraints has propelled the flows from Rumania and Bulgaria, turning these countries into major migration sources, posing a serious threat to territorial cohesion. The rapid economic growth in Ireland and Spain has turned these countries from migration sources to migration sinks, which now falter as a result of strong asset deflation.

As a continent Europe has a competitive disadvantage because of the demographic decline of its potential labour force, making the traditional position of a Fortress Europe untenable. Even during times of economic recession the competition for highly skilled and healthy workers will continue and is bound to accelerate when recovery sets in.

A better understanding of migration is a prerequisite to any effort to govern the process, not only in terms of managing flows of migration but more importantly to secure the intended positive effects and to tackle the unintended negative effects.

13. Roman god, keeper of the gates of heaven.

Governing migration

Current European migration policy has taken a wide view on the issues of migration and integration. It focuses not only on the migrant but also on societies. It looks not only at Europe, as a settlement society, but also pays attention to origin and transit countries. For international migration the policy rests on four pillars:

1. Harmonising legislation in line with a common interpretation of the Geneva Convention in the Common European Asylum System, avoiding burden shifting between member states and setting new standards in the admission of and provision for refugees.
2. Controlling external borders and preventing illegal migration and trafficking, by pooling the resources of the member states in a joint border control agency.
3. Setting up bilateral Mobility Partnerships with specific sending countries, including the setting up of Centres for Migration Management in these countries.
4. Managing legal migration and integration in the light of the changing nature of the process, again driven by employment demand, both within and to the European Union.

The first pillar is a response to the crises in the European asylum system in the late 20th century, which led to national policaies of restricting access in countries that took in a more than 'fair' share of refugees that came to Europe. The concomitant rise of unauthorised and undocumented migrants at the Southern and Eastern European borders in particular clearly outstretched the capacities of the countries at these borders to control this illegal inflow. This rise created the need to share responsibility for border control at the level of the EU and gave rise to the policy of trying to manage migration at the source rather than at the gates. The fourth

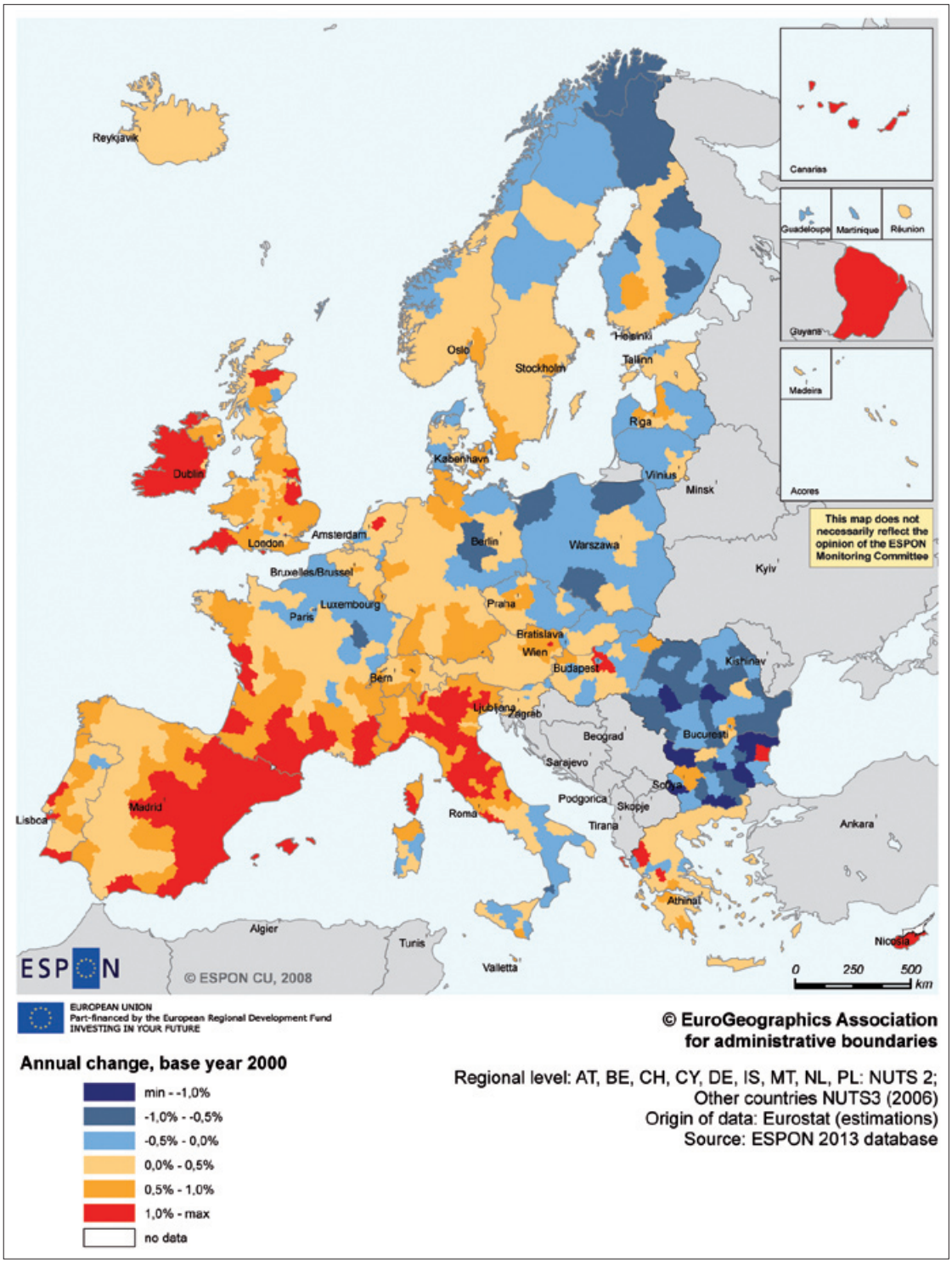

Figure 1. Net migration development, 2001-2005.

pillar is more oriented to recent trends and future needs, and at the same time aims at avoiding mistakes from the past when migration was dealt with as an isolated and temporary phenomenon, ignoring serious issues of integration.

Managing legal migration

Managing legal migration is a response to the new geography of migration that includes extreme diversification and increasing fluidity of the flows. Up to the early 1990s migration into Europe consisted of a number of subsystems of settlement and origin countries based on colonial heritage and bilateral patterns of labour recruitment and follow-up chain migration. Globalisation has diversified these patterns both in space and in time because of the rise of new divisions of labour in nearly every sector of the economy.

A dual labour market is again emerging. At the bottom end of the job hierarchy, temporary and sesonal contract workers are recruited for specific sectors in the economy in areas where the local labour supply is short. The duration of stay is limited and the right to bring in family members is absent. In many countries an informal sector for domestic and other personal services is backed up by the legal system granting persons the right to employ migrants on a private basis provided they take responsibility for the housing and welfare of their employees.

At the upper end of the job hierarchy many governments are now developing special programmes to attract highly skilled labourers, offering attractive packages including the opportunity to obtain a permanent residence permit and the right to bring in family members.

National laws and policies still dominate the management of legal migration. Even if the legal systems converge further in the future, practices will be very different due to disparate developments in the regional labour markets and political contexts across Europe, not only in the EU-27, but also in the newly joined member states. Though these practices fit into the specific institutional context in which migration is managed, they may be based on incorrect assumptions about the motives and means of the migrants. In particular the assumption that migrants, given the chance, would settle permanently in the country of destination may be invalid for many. Increasing numbers of students, entrepreneurs, self-employed, long-stay tourists and the like may opt for consecutive stays in various countries or alternate residence in two countries. This new diaspora and transnational arrangements challenge not only policies on migration but also those on integration.

The research challenge

Understanding migration flows is like understanding a river system. The driving force of the water can be derived from the laws of gravity. Yet understanding the river with its lakes and cataracts requires a detailed insight into the interaction of the water and the landscape. From this interaction the riverbed is formed and transformed, causing land degradation upstream and depositing sediments downstream.

The failure fully to understand the interaction between migrants and societies is the major bottleneck in migration and integration research. Much research is either aimed at the migrant population itself, or at the institutional framework that governs the flows. Integrating these two levels of analysis is the major challenge for the future. Comparative research on harmonised data sets across Europe and beyond, using multilevel analyses is a useful starting point to analyse the way national and regional contexts impact on migration flows and the way migration is transforming these contexts. The research needs to be able to identify feedback effects in this migration system; the approach should be multidisciplinary because single disciplines often fail to deal with issues of recursive and cumulative causality that predominate in adaptive systems.

Defining integration as a two way process of transformation by migrants and settlement societies, as is common in the scientific literature, also implies that the interaction between migrants and their national, regional and local contexts should be disentangled systematically. The answer to why a migrant category is more successful in one country than in another may not only depend on the national context or on hitherto unobserved characteristics of the migrants involved, but on the combination of characteristics and contexts in a specific timeframe. Analysing these dynamics requires far more variety than can be found in single-country and cross-sectional studies.

A relatively new social science tool is network analysis. Networks are the empirical manifestations of theoretical system relations and provide analytical tools to study multilayered interaction. Network analyses are efficient means to transcend traditional (administrative) boundaries between international, transnational and intra-national migration, and able to depict more complex relations where individuals are linked to a variety of context. So far these types of analyses have predominantly been used in studies of integration where social network analyses has been used to uncover the way migrant groups link internally and with the settlement society. A much wider application of this approach could provide a way forward in both migration and integration studies.

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Conclusion

Governing migration and integration in Europe is an arduous task due to the complex and dynamic nature of the phenomena and the enormous diversity of realities and practices within Europe. From a research point of view this combined multiplicity is an opportunity rather than a problem. The wide variety in contexts, experiences and policies provides a natural laboratory to learn to understand the economic, social, cultural and political causes and ramifications. A cross-European research effort could uncover the crucial mechanism and separate them from the contingencies, identifying points of intervention that not only address the driving forces but also fit the specific context in which they are applied. Strengthening the evidence base is a necessary condition to increase the efficacy of the interventions.

Globalisation, governance and democratic deficit

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Introduction

Meetings of international organisations are more and more often accompanied by public demonstrations which denounce global agents of power for destroying democracy. Global governance is increasingly seen among social scientists as authoritarian and lacking democratic legitimacy, because it does not provide for citizens' participation in a democratic dialogue and decision making, and for the public accountability of decision makers. As Barber suggested, "We've got doctors without frontiers, we've got criminals without frontiers, we have capitalists without frontiers, and we have terrorists without frontiers. The one thing we're missing is: citizens without frontiers. The Democratic project, I believe, should rest on finding ways to create citizens without frontiers." (Barber 2004: 137)

How justified are such critical voices? Does the globalisation of governance threaten democratic rules? If so, what are the feasible democratic alternatives to globalised governance? These questions challenge contemporary political philosophy, sociology, political science, communication studies and other social science disciplines. Sharing responsibility for the development of democratic forms of governance, they aim to identify critical conditions that stimulate or fetter such a development. The overall contribution of social science is to analyse the components of modern governance and to suggest ways in which democratic rhetoric can be translated into democratic reality.

Globalisation – a new age of conquest?

Globalisation has deeply transformed social relations in the last two decades; it restrained the traditional supremacy of territorial boundaries and lessened the links between territory and collective destiny. Increased global interdependences are most palpable in the economy (the global marketplace), but globalisation also has significant social, political and cultural dimensions and consequences.

One of them is the challenge that globalisation poses to the power of nation states and their role in international relations. National authorities alone are not able effectively to regulate and control global developments in trade, finance, telecommunication, mass media and ecology, not to mention global terrorism. The current global financial and economic crisis makes it obvious that even the most powerful states have limited capacities to control a national economy. The essential regulations governing production, trade and finances are set transnationally, by agencies more accountable to global capital than to any national stakeholder. Thus, new institutional regulatory strategies and mechanisms are required to deal with the growing complexities and potential threats of globalisation.

Political globalisation can also be observed in the foundation of transnational legal entities, such as those of the United Nations and the European Union, and a growing number of international conferences which address global problems and cooperation. Hundreds of institutions and organisations regulate the global processes of trade, telecommunications, transportation, health, the environment and many others. Globalisation is bringing about a 'global system' composed of a variety of interactions between national, international and transnational political institutions, corporations, associations, individuals and other groupings, with which the nation state increasingly has to share decision-making power in global governance (see Figure 1).

Globalisation may fetter rather than foster democracy. It is hegemonic inasmuch as it is based on the diffusion of neo-liberal ideological currents and developmental patterns from the most developed countries in Western Europe and North America to global peripheries and semi-peripheries, rather than on indigenous social groups engaged in building a new economic and social structure[14]. These circumstances are unlikely to give rise to a global democratic project. Rather, they reflect a neoliberal supremacy, in which the powerful transnational actors cannot achieve consent on a global level but, nevertheless, govern over a fragmented opposition. In addition, economic globalisation profoundly redistributes power inside the state since it strengthens executive power and undermines the legislature.

Another important consequence of globalisation is manifest in the changing relation between "*ethnos*, the 'people' as an imagined community of membership and affinity, and *demos*, the 'people' as the collective subject of representation, decision making, and rights." (Balibar 2003: 8) Historically, *ethnos* and *demos* were inseparably linked to each other; the creation of a democratic system was closely associated with a specific national affiliation. The public and the public sphere have developed within the ethnic borders of nation states. Globalised governance has removed this 'natural' foundation and framework of democratic processes, the *ethnos*.

14. For example, the French Foreign Minister, Hubert Vedrine, explained in these terms the abstention of the French delegation from voting for the 'Warsaw Declaration' on democratic principles in June 2000: "Some Western countries think of democracy as a 'religion' that can be spread by means of 'conversion' through punitive sanctions." (http://www.ukrweekly.com/old/archive/2000/270007.shtml)

Steering modes	Public actors only	Public and private actors	Private actors only
	Hierarchical		
Top-down Threat of sanctions	Traditional nation-state Supranational institutions (EU, partly WTO)		Corporate hierarchies
	Non-hierarchical		
Positive incentives Bargaining Non-manipulative persuasion (learning, arguing etc.)	Intergovernmental bargaining Institutional problem-solving	Delegation of public functions to private actions Corporatism Public-private networks and partnerships Bench-marking	Private interest government / private regimes Private-private partnerships (NGOs-companies)

Key:
New modes of governance
Public-private partnership

Figure 1: The realm of new modes of global governance (Source: T. A. Börzel and T. Risse, 2007)

From government to governance

Like globalisation, the concept of governance is a fairly new addition to the vocabulary of the social sciences. While globalisation denotes the extension of social space, governance refers to the expansion of regulation beyond government. It points to the fact that the classical liberal government separated from civil society is vanishing, and new modes of regulation are needed to include non-state actors, such as NGOs, labour unions, community groups and local authorities as well as private companies and trade associations. The concept of governance, initially introduced into the social sciences by scholars of international relations, was soon taken up by almost every discipline, and it has largely overshadowed the term 'government'. The term is used in relation to very diverse phenomena; thus one would try in vain to find a commonly accepted definition of governance beyond its reference to "the reallocation of authority upward, downward, and sideways from the states" in a variety of processes with different authority bases in which "an activity or ensemble of activities is controlled or directed, such that it delivers an acceptable range of outcomes according to some established social standard." (Hirst 1997: 3)

The governance approach yields a new perspective on the role of the state in the global context (see Figure 1). Broadly conceived, the idea of governance explores the erosion of traditional bases of (political) power and changing boundary between state and civil society. It denotes the transformation of government (or governance for that matter) in an increasingly interdependent world and reflects fundamental changes in the decision-making process compared with the classical model of government. In contrast to 'government,' 'governance' refers to both state *and* non-state stakeholders (see Figure 2) making *and* influencing decisions that significantly affect population in a particular organisation or the entire 'world community'. The idea of governance blurs the boundaries of the traditional dichotomy, 'the state-civil society,' or in the more recent trichotomy, 'the state-economy-civil society.'

Figure 2: Non-state stakeholders in an organisation (Source: Institute on Governance, http://www.iog.ca/boardgovernance/html/gov_wha.html)

In contrast to centralised state authorities, modern governance is seen as dispersed across multiple centres and levels of authority, both nationally and globally. Most agree that the central component of governance is decision making, but it also includes processes and relations through which individuals and groups with an interest in the outcome of decision making (try to) influence it in different ways. Many of the power actors and stakeholders play a significant role in the global system not by making decisions or determining the precise form of a process or action, but rather by subsidising information and providing opinions to support the process and to activate those not directly involved. This adds an important dimension to decision making – that of representation and accountability. Typically, the 'civil society' forms of governance lack the traditional enforcement capacities of the state or the power of capital – forms of coercion enforcing mandatory action by 'targets – yet they may influence decision making.

Global governance

Attempts at global environmental governance, grappling with issues of climate change, biodiversity loss, and air pollution, are a good example of the controversial nature of (global) governance in terms of the state-civil society relationship. Its (meagre) performance is explained by some as resulting from a purposefully poor institutional design by its main stakeholders (the states) while others believe that it has been significantly successful and has stimulated the establishment of many effective environmental projects and NGOs. The problem is that both interpretations suggest a 'no change' strategy. If governments intentionally designed a weak system of global environmental governance then any initiative to reform it will inevitably fail. If it is successful, no changes are necessary.

Governance of global financial systems demonstrates even more clearly a huge lack of legitimacy and accountability of supranational institutions and corporate hierarchies as the main stakeholders.

Although contemporary governance is not limited to inter- and transnational relations but is rather ramified between local and transworld operations, the governance of global relations shows its 'post-statist' features and deficiencies most starkly. Transnational social actors 'denationalise' decision making and undermine national decision-making authorities but do not assume their responsibilities. With the exclusion of the public, the decision-making roles of governing individuals and collective bodies are less visible, less formally recognised, less binding; thus the decision makers are less accountable compared to traditional (political) decision-making bodies.

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'Denationalisation' or non-governmental governance

'Denationalisation' may take different forms, in which the responsibilities of political institutions at the national level are transferred to those operating at the transnational level, and delegated to politically independent regulatory agencies or private or semi-private organisations. In the latter case, when issues previously subject to formal political scrutiny by more or less representative political bodies, are relegated to a market-driven deliberation and accountability, denationalisation also implies *'depoliticisation'.*

Major stakeholders in global governance, such as the World Bank, the International Monetary Fund and the World Trade Organization, negotiate only with a state's executive authorities, thus limiting the power of legislatures to 'domestic affairs.' Private and semi-public stakeholder organisations and corporations such as the European Round Table of Industrialists (www.ert.be/structure.aspx), Social Accountability International (www.sa-intl.org), the Internet Corporation for Assigned Names and Numbers (www.icann.org), or the European Telecommunications Standards Institute (www.etsi.org) have no provisions for public participation. For some time, such governance controlled the excessive unpredictability of international (financial) markets, despite serious gaps in coordination between different sectors and levels of governance (enabling, for example, offshore trusts and tax oases); however it was finally not able to prevent their collapse.

The classical liberal separation of state and civil society has been mainly threatened from the side of the authoritarian state because of its surveillance over the private sphere. The danger to democracy from the contemporary permeation of state and civil society is much more complex and is based on the fusion of public and non-public bodies, and a fragmentation of authority,

so that it is extremely difficult if not impossible to know who decides what, and how it is decided. The lack of representation, public deliberation and public accountability – the absence of a 'transnational' or 'global' demos and public(s) – as sources of democratic legitimacy for governing give rise to democratically deficient global 'governance without government' as a mere 'steering without democracy.'

'The public' as a remedy against 'democratic deficit'

Some eighty years ago John Dewey defined 'the public' as consisting of all those affected by the indirect consequences of specific 'transactions' in which they could not directly participate, to such an extent that they considered it necessary to take some action. "This public is organised and made effective by means of representatives who as guardians of custom, as legislators, as executives, as judges, etc., care for its special interests by methods intended to regulate the conjoint actions of individuals and groups." (Dewey 1927/1991: 35)

It is possible that new forms of governance have been developed at local, national and transnational levels because of the growing 'democratic deficit' – the failure of traditional decision makers or 'representatives' to offer new ways of democratic problem solving in the changing economic and political environment. In that sense, the term 'global governance' implies new actors or networks that could overcome the 'democratic deficit.' It comes close to Dewey's concept of 'the public' as a network of individuals and groups discursively engaged in global issues that seriously affect a significant part of the population, in order to find a solution and/or come to a decision, which may even be based on argumentative rationality.

However, the practical process of global governance is now dominated by neo-liberal hegemony; it is based on a rather thin concept of democratic legitimacy since the democratic participation of citizens that is essential for 'the public' is largely left out or, at best, incorporated within a subordinated position. The inclusion of non-state actors (e.g., non-governmental organisations, but also private for-profit corporations) in (global) governance, who act primarily in a non-hierarchical environment, does not necessarily increase the communicative and decision-making powers of citizens. The opposite may be the case, namely that democratic participation of citizens is de-privileged or even restrained, because of de-politicisation and the lack of a fully developed transnational political community.

The decreasing turnout in the European parliamentary elections and the 'No' votes in referenda do not necessarily mean that people feel less European or resist a European (legal) order, as the European Commission states in the White Paper on European Governance. It may merely mean that peoples in Europe "have disappointed expectations, but expectations nevertheless" for European-wide actions in many domains (Commission 2001: 7). Still, transnational political communities such as the European Union – despite its efforts to reform 'European governance' – are at present less of an incentive to democratic governance than their national counterparts or constituents.

New modes of communication

New communication technologies, such as the Internet, have made transnational communication channels easily accessible to all social actors. Transnational networks and Web communities may help people to form identities that complement state-framed ethnic or national identities. Many participants in collective actions on a transnational or global scale refer to fundamental civil and political rights, as well as to economic, social and cultural rights, and civic equality and view protection against gender, religious, racial, ethnic or class discrimination on that basis as superior to state sovereignty.

Yet these communities do not significantly enhance democracy because, similarly to traditional public factions, they rarely transcend racial, gender, age, ideological, religious, professional and other particularistic interests. In some cases, they may have contributed to rectifying the fragmentation of cultural and political interests, but they may also have deepened that fragmentation. The boom of millions of more or less specialised websites, blogs, chat rooms, forums, and networks of friends across the world does not lead to an inter- or supra-national public (sphere) but more likely to the fragmentation of traditional (national) mass audiences.

Instead of providing only passive access to the consumption sphere, democratisation primarily implies the development of conditions for active participation in which the individual can realise his/her interests and meet his/her needs in collaboration with others. Actual democratisation is defined by whether both the number of active participants in the communication processes, and also the social basis of communication, expands; that is, it depends on whether the new forms of communication and democracy contribute to the incorporation of, until then, excluded social categories and groups, for example, the young, women, socially, economically or politically deprived groups, national, ethnic, linguistic and religious minorities, and so on. In other words, democratisation should eliminate the major sources of distorted communication and external sources of inequalities; e.g. class and ownership privileges, gender and racial discrimination, age grade exclusion, and political or professional elitism (Splichal 2009: 2-3).

Reducing the democratic deficit

In principle, there are two complementary options to reduce the 'democratic deficit' and to achieve a more 'cosmopolitan democracy' in transnational communities. One is to create democratic institutions analogous to and scaling up the democratic system of nation states. At the moment it is difficult to imagine how such powerful transnational democratic institutions could be established. There are no empirical signs of 'transplanting' the model of centralised public regulation from the nation-state to the global setting. For instance, who is supposed to constitute – as *demos* – the collective subject of representation, and how should they be represented? The principle of 'one state – one vote' would hardly be democratic since it would give – taking the European Union as an example – the citizen of Malta two hundred times more voting power than the citizen of Germany. Yet treating the European Union as a single constituency with majority rule does not seem any more democratic in that it would allow the representatives of a few large national constituencies always to outvote the majority of countries. While qualified majority voting may provide an adequate solution for the European parliamentary elections, it is not applicable to the Council of the European Union and the European Commission. The general division of power between these three institutions is another issue which cannot be resolved by analogy with national political systems.

The second – and more realistic – option is to build a more decentralised and diffuse 'cosmopolitan' system of governance, with different democratic procedures effective at different levels; this ultimately depends upon the creation of a transnational public sphere as an 'arena' for public debates and a medium of social integration fostering solidarity. Global governance should provide opportunities and sites, including the mass media, for public deliberation among stakeholders, which would expose the decisions of powerful actors to transnational public scrutiny. By participating in the public discourse, citizens and civic associations can increase transparency, promote accountability and enhance the democratic legitimacy of the rules and institutions of global governance.

A transnational (European) public sphere would pave the way for the formation of transnational publics, which could link the governance with deliberative democracy. Widespread networks of activists, most visible in the anti-globalisation movement, in fact link together many other citizens' voices on many different issues related to global governance. In 2003, after the beginning of the Iraq war, Derrida and Habermas recognised "the demonstrating masses in London and Rome, Madrid and Barcelona, Berlin and Paris" reacting to the Spanish Prime Minister's invitation to 'the New Europe' to go to war against Iraq as "as a signal for the birth of a *European public*" (Derrida and Habermas, 2003). Perhaps it was 'a signal,' but there is a long way to go to create an awareness and institutional environment for a vibrant European public. An appropriate institutional environment is often missing; even institutional restraints may exist as the Make Poverty History case of September 2005 indicates: Ofcom, the UK communications regulator, banned the MPH advertisements, which aimed to influence policy makers, arguing that the MPH aims were "wholly or mainly political" since they aimed to "achieve important changes[15]."

Conclusion

Globalisation is reminiscent of the formation of nation states in the 18th and 19th century. The spread of territory under a single supreme authority that exercised sovereign power over a larger territory and its inhabitants was the consequence of similar processes to those that now make up 'globalisation.' In times past, the nation state arose as a 'mechanism' to regulate far-reaching and long-term consequences of private transactions that small local or city states were not able effectively to handle. At the same time, nation states represented institutionalised sovereign powers that the (national) publics forced to act in the common interest.

The public can be effective only in assuming its democratic functions of influencing and controlling decision makers if its communicative actions have a clearly defined addressee with an effective decision-making power, as was the case (at least normatively) with the state. The 'post-national constellation', to use Habermas's term, requires a kind of transnational 'equivalent' to the nation state and national public-effective transnational decision-making powers accountable to effective transnational publics. For a healthy democracy it is crucial that a two-way communication exists between governors and governed and that decision makers enter the public sphere to justify their decisions and to gain public support.

Decision making in the European Union

From the European perspective this means that decision making in the EU political system has to become more transparent to the public and more influenced by opinion- and will-formation in the public sphere. Up to now, the strategies adopted by the EU and national authorities were focused on information campaigns rather than on interactive communication with citizens participating in different (primarily national) forms of opinion- and will-formation. Nonetheless, voter turnout in European elections has had a downward trend since

15. http://www.theanalystmagazine.com/10114.htm

1979. In 2009, it was 43% in the EU as a whole and even below 30% in six new member states [16]. This suggests that the information campaigns need to be more focused and provide more information particularly to the least informed citizens, to improve the turnout at future European elections.

The mass media have to fulfil specific normative functions in democratic political systems. For the most part, the formation of public opinion is still a process conducted through the national media although it does not stop at the state borders. In order to enable critical public opinion to be generated on the European scale, EU authorities should define common pan-European standards and rules that contribute to the Europeanisation of national public spheres and the development of a European public sphere, particularly by regulating media markets to ensure a citizen the right to be informed about the EU, to protect the right of public speech and media pluralism, and to stimulate dialogue among stakeholders throughout the EU.

The role of national governments

The fact that global issues and interdependencies exist does not imply that nation states have no responsibilities. The call for a transnational (European) public sphere and transnational institutional political power does not mean that their national 'counterparts' lose responsibility; rather, they need to develop new and effective forms of cooperation and, thus, the capacity to supervise transnational bodies of governance. Nor does democratic deficit in global governance imply that democracy can be restored only by greater reliance on the existing national institutions of representative government, although they still seem to be the most effective institutions to link different forms of subnational, national and supranational governance. National parliaments and public spheres in themselves are not ideals of open access and democratic participation. National parliaments should be much more involved in the debates and decisions on international affairs and agreements, which are now largely reserved to the executive power. Debates in national parliaments would provide a democratic input for transnational bodies and increase the importance of European and global issues in national public spheres and thus help them to 'transnationalise' or 'Europeanise.'

Globalisation did not reduce the power and responsibility of democratic nation states to protect 'national' public spheres. On the contrary, if democracy is central to governance, the democratic states remain its most important guardians; they are the only democratically organised political actors which, on the one hand, legitimately represent their (territorially defined) populations and, on the other hand, can effectively control (other) stakeholders in global governance and thus provide accountability to globalised governance. As the 2009 London summit of 'the Group of Twenty' eventually had to admit, there is a need for a "stronger, more globally consistent, supervisory and regulatory framework for the future financial sector, which will support sustainable global growth and serve the needs of business and citizens [17]."

Only under more democratic circumstances, both national and transnational publics, as 'stakeholders' in global governance could breathe civic engagement into an anaemic public sphere now dominated by official state actors, expert elites, and mass media, and thus strengthen its fourth and most vital component – civil society.

16. 19.6 in Slovakia, 20.9 in Lithuania, 24.5 in Poland, 28.2 in the Czech Republic and in Slovenia, and 27.4 in Romania.
17. http://www.wcoomd.org/files/1.%20Public%20files/PDFandDocuments/Highlights/G20_Final_London_Communique.pdf

Europeanisation and its challenges

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Introduction

During this decade, the analysis of political, institutional and legal developments at the level of the European Union (EU) and their effects on structures, political processes and policies in the member states has emerged as a central area of social science research. Studies investigate, for instance, the impact of the EU on regulatory arrangements in different policy areas, such as social, environmental, education, tax, or competition policy. A focus is on the extent to which the EU implies changes in the distribution of power between national institutions. A particular debate refers to the question whether the EU strengthens national executives at the expense of national parliaments and regions. A further important focus of Europeanisation research is on the potential changes in national legal systems that emerge from the direct effects of the supremacy of European law.

In general, Europeanisation research demonstrates not only the enormous impact the EU has on national structures and policies. It also makes important contributions on the causes and conditions under which domestic Europeanisation effects are actually in line with the intended objectives of EU policy makers.

On the one hand, there are numerous examples which demonstrate the far-reaching domestic impact of Europe. This becomes apparent in particular when looking at applicant countries or new members. They face enormous challenges in order to catch up, in terms of setting up regulatory frameworks and implementation structures as well as building administrative and political capacities. At the same time, for well-established members, the EU constitutes the central political and social reference point. The abolition of political and economic barriers and the establishment of harmonised rules at the European level has brought about far-reaching welfare benefits for the member states and their citizens.

On the other hand, Europeanisation research has also shown that European activities have not always led to the expected domestic outcomes. This is demonstrated in particular by studies investigating the implementation and effectiveness of EU policies across member states and policy sectors. Research has demonstrated that implementation gaps and domestic deviations from EU requirements are to a considerable extent caused by the governance patterns adopted at the EU level. Important improvements could be achieved by taking better account of social science insights on the effectiveness of different policy instruments and governance approaches in different constellations. For instance, in regulating nuclear safety, uniform and legally-binding intervention seems a more appropriate tool than it is for policy areas in which varying social and national context conditions indicate the need for more flexible and open governance frameworks (e.g. in the field of higher education or environmental planning).

In many instances, the domestic effects of Europeanisation are neither politicised nor actually perceived by domestic actors, given their often technocratic and legal-technical nature. It is only in rare cases, when EU requirements imply far-reaching challenges to existing structures and arrangements in the member states that more conflicts and politicised patterns can be observed. In other words, Europeanisation in many cases reflects a rather subtle and hardly publicly visible process of often merely incremental adjustments that in the aggregate nevertheless coincides with far-reaching changes in political and administrative structures in the member states. It is especially in the light of these aspects that a democratic deficit of the EU has been emphasised, since such gradual processes are rarely the subject of democratic debate and decision.

Objectives and challenges of research

The underlying research pursues two objectives. In empirical terms, the central goal is to describe and measure Europeanisation effects across time, across member states and across policy sectors. In theoretical terms, the major objective is to explain the variety of domestic patterns of Europeanisation, with some studies emphasising the persistence of domestic arrangements and others indicating contrary patterns of far-reaching adjustments. Notwithstanding an ever-growing number of studies in this area, the analysis of Europeanisation effects still faces far-reaching challenges.

The first challenge is conceptual. The concept of Europeanisation suffers from the problem that the term is 'over-stretched'. There are many different and partially contradictory definitions of the concept. Some authors use the term as a synonym for European integration, that is, the development and emergence of institutions and policies at the supranational level. This definition is certainly not very useful as it simply reinvents the wheel, creating terminological confusion. Others refer to the role of the EU in facilitating horizontal policy transfer across member states. A third definition is linked to a top-down perspective and focuses on the domestic impact of developments at the European level. Finally, there is a group of scholars who refer to Europeanisation as describing both developments at the European level and the domestic effects of these developments. In addition, further complexities emerge from different definitions with regard to the geographical scope of Europeanisation. Should Europeanisation be restricted to the domestic impact of the EU on member states or future member states only or should the term also cover all other countries that are potentially affected by the activities of the EU?

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The second challenge to be addressed by Europeanisation research emerges from the fact that there is a similar lack of agreement on the independent and dependent variables that should be used in Europeanisation studies. The most prominent and also most heatedly debated independent variable – the fit or misfit of European and domestic arrangements – is operationalised in very different ways; some scholars measure misfit at the institutional level, others at the policy level. Similar problems apply to the specification of the dependent variables. There are big differences in how domestic policy or institutional change is measured. Some authors look at policy instruments, others analyse changes in domestic discourses, and others look at regulatory styles or administrative traditions. In general, this variety constitutes a strength rather than a weakness. This is true, however, only as long as differences in the operationalisation of independent and dependent variables are explicitly acknowledged.

A final challenge refers to the need to overcome the selection bias that often characterises Europeanisation studies. Mostly, the focus is exclusively on EU member or applicant states. As long as countries outside the EU are excluded from the country sample under investigation, it is hardly possible to control for potential effects that cannot be attributed to EU membership or conditionality.

Directions of research

First, there is a need to identify and analyse the mechanisms through which European integration affects domestic arrangements. We need to improve our knowledge of the channels through which Europeanisation operates. In which ways or mechanisms does European integration trigger domestic changes? It is of crucial importance whether Europeanisation effects emerge from legal harmonisation, from political imposition or conditionality, from regulatory competition in the Common Market, or from learning processes triggered by intensified communication and information exchange in supranational policy networks. Being more precise about the causal chains or mechanisms of Europeanisation offers several advantages.

So theoretical explanations of Europeanisation processes need to be more precise and focused. It makes a difference whether we look for theories that seek to explain Europeanisation processes of every kind or whether we are looking for more limited explanations that account for different domestic effects of legal harmonisation, regulatory competition or transnational communication. It is obvious that each of these Europeanisation channels (and the list of channels is certainly not complete or exclusive) might operate differently, implying that there are different factors that account for potential variance in domestic impacts. Looking at legal harmonisation, for instance, effects might vary with the degree of legal specification of European law. Legal Europeanisation effects are much stronger in highly regulated and harmonised areas regulating the Common Market than is the case for less regulated areas, such as social policy or higher education. Competition effects, by contrast, might vary with the extent to which domestic markets are actually exposed to international or European competition. Especially in the field of taxation, but also with regard to the social and environmental regulation of production processes, studies point to rather strong effects of EU market integration on national standards. For communication effects again different variables might play a role, such as the interaction density in European policy networks or the mere number of states that have already adopted a certain policy. A case in point is the Bologna Process in higher education which primarily rests upon voluntary agreements between the involved countries and the establishment

of institutionalised networks for information exchange. Despite this, these structures have led to far-reaching policy changes in the member countries. The examples should be sufficient to underline that the explanation of Europeanisation effects varies with the concrete channel through which European integration triggers domestic change. Rather than analysing Europeanisation as such, it is hence theoretically more promising to focus on the specific mechanisms of Europeanisation or modes of European governance.

In this regard, an interesting research question is the comparison of the effectiveness as well as the functional appropriateness of different Europeanisation mechanisms. To what extent and in which problem constellation is legal harmonisation a more suitable tool to resolve political problems than market competition or transnational communication? So far, only limited insights exist on this topic. The example of the Bologna Process suggests that in some cases, the promotion of transnational communication networks might constitute a more effective way to achieve the goal of a European Higher Education Area than relying on the classical Community method of legal harmonisation (which more or less failed to achieve this objective). At the same time, the abolition of national trade barriers has brought about far-reaching national changes (for instance, in national transport or telecommunication markets), although the EU did not prescribe legal models for domestic adjustments. But would or should we similarly trust in the effectiveness of competition or communication in other areas, such as the regulation of nuclear safety or chemical risks? These examples show that there is still a great need to conduct systematic cross-national and cross-sectoral research in order to improve our understanding of the effectiveness and appropriateness of different Europeanisation mechanisms.

This more precise analytical focus implies a second advantage. It is easier to avoid the selective focus on EU member states and to link Europeanisation studies to broader scientific debate, in particular to the analysis of the domestic effects of internationalisation and globalisation or studies on the international diffusion and convergence of policies. Emphasis can also be placed on the effects of international harmonisation or regulatory cooperation, regulatory competition and transnational communication. In other words, the mechanisms assumed to trigger domestic change are more or less identical. From this perspective, it would hence be possible to analyse whether and to what extent the EU makes a difference compared to, for instance, the effects of other international organisations or regimes and the growing integration of international markets. In this way, the selection bias inherent in many Europeanisation studies may be overcome. It may also be possible to strengthen the development of general theories to explain the varying effects of the external environment (be it European or global) on national policies and institutions.

Finally, a more differentiated analytical focus on distinctive causes or channels of Europeanisation would also help to reduce the high degree of ambiguity that currently exists with regard to the specification and operationalisation of dependent and independent variables.

Conclusion

Research on Europeanisation is not only still characterised by many open empirical and theoretical questions that need to be addressed. It also faces important conceptual and analytical challenges that have to be overcome. Europeanisation research hence constitutes a high priority research field that lies at the core of research on European integration and comparative politics.

Regional inequalities and the role of social science

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Introduction

Spatially uneven development is not a new phenomenon in Europe, but it has taken several centuries of economic and social development for it to become a central topic of interest to governments. Hitherto, the peoples of Europe and their economies have reacted to spatial inequality by 'voting with their feet', by internal and external migration in search of new opportunities. Since the Second World War the philosophy of the welfare state has emphasised social solidarity and equality and has therefore included the policy of reducing spatial inequalities. As a result, the problems of spatial inequalities have been more and more clearly articulated and have become a topic of social science research. Most recently, the European Union has devoted significant resources for several years to the development of underdeveloped regions through the Structural and Cohesion Funds. The question is whether social sciences were at all able to affect the shaping of this policy, and, on the other hand, how this policy – making a crucial impact on the territorial landscape of the continent – affected the social science research agenda.

The changing nature of inequalities

The dimensions of regional inequalities have changed over time. Throughout Europe, the earlier characteristic pattern of villages surrounding small market towns has declined; urban areas grew, and those living in rural territories are now bound up in a thousand ways with the towns. The differences between villages and towns lessened. At the same time another, regional, dimension of territorial inequalities has been emerging, so that larger regions permanently exhibit the divergent economic, infrastructural, and demographic and income conditions of central cities, metropolis regions and the peripheries.

Eastern-Central Europe has had a different path of territorial inequalities. Due to its later and less intensive urbanisation the proportion of rural, peripheral territories is higher and the majority of the towns are unable to perform welfare and economic functions for their districts. This polarisation of economy and settlement structure is accompanied by social differentiation, with poverty concentrated in backward, peripheral rural areas. Naturally there are larger towns and agglomerations throughout Europe where the proportion of poor and unemployed population is significant. However it is characteristic mainly of the new member states of the European Union that relatively rapid economic development has been concentrated in the capital cities and their immediate surroundings.

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Social science and public policy

The social sciences have dealt with these processes throughout Europe, emphasising the overall impact of urbanisation and structural economic changes on individual living conditions and on the structure and cohesion of the society. However the subsequent theories and results did not really influence the means and priorities of regional development policies formulated at national and European levels. Although public policy analysis and research provided huge amounts of expertise in this field, the fairly fragmented nature of policy initiatives hindered the harmonisation of different governance measures with the results of basic researches, on this complex phenomenon.

The European Union evaluates the impact of the Structural Funds and the development of inequalities between the NUTS 2 regions of the member states from time to time. According to the Fourth Cohesion Report, in the Union as a whole, a definite convergence is emerging between the richest and the poorest regions. However, this is absent within the member states and especially in

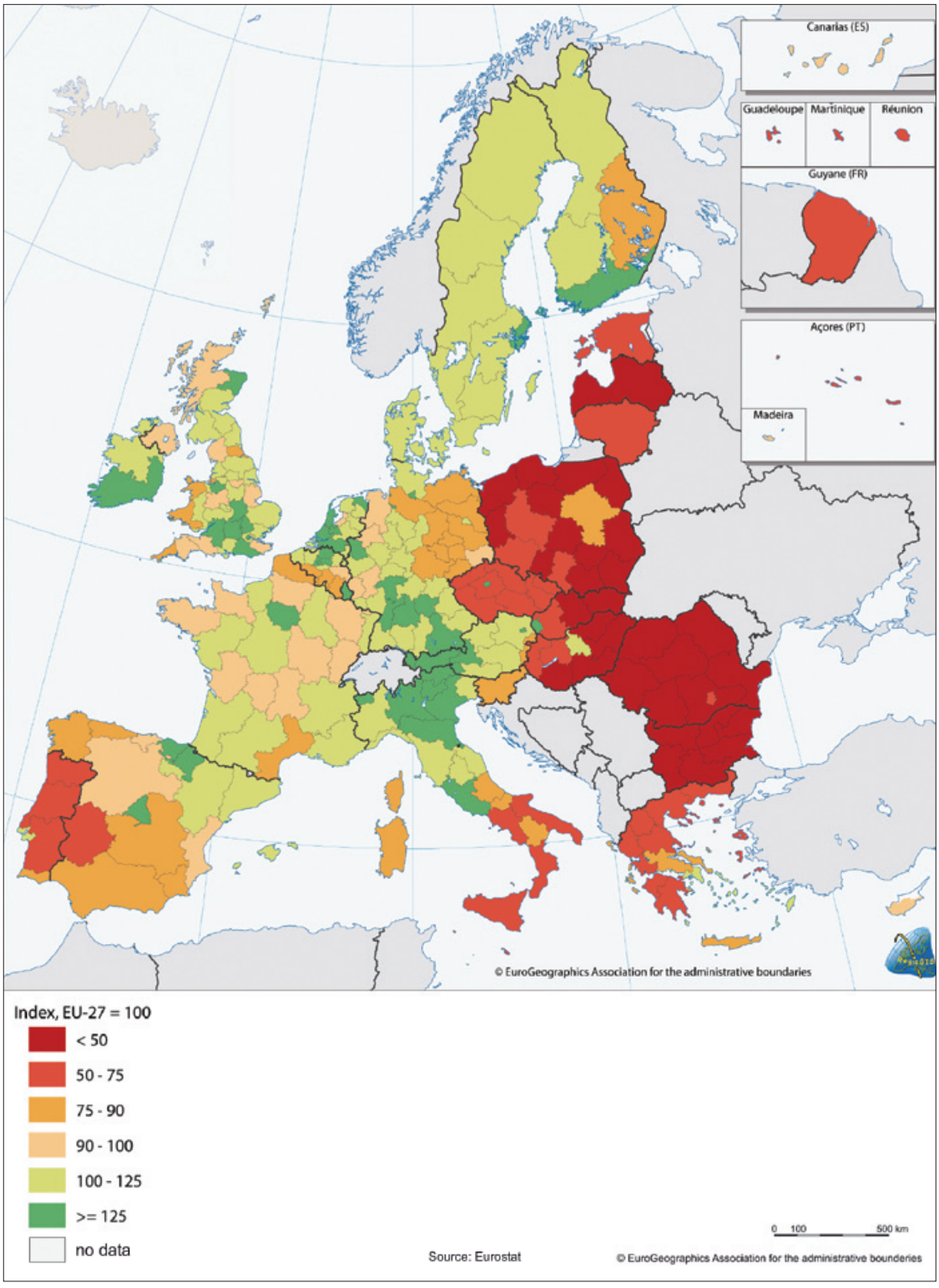

Figure 1. GDP per head (PPS), 2004

	EU-15		New Member States – 12		EU-27	
	1995	2004	1995	2004	1995	2004
Number of regions	213		55		268	
Total population (million)	372	386	106	104	479	490
Regions						
Number	27	21	51	49	78	70
%	13	10	93	89	29	26
Population						
Number (million)	32	32	103	91	136	123
%	9	8	97	88	28	25

Table 1. Regions with GDP per head <75% below of EU average, 1995 and 2004

the new member states where internal territorial inequalities appear to be intensifying in the longer term. Every region where the GDP per capita does not reach 50% of the Union's average is located within the new member states. It means that the East-West territorial division has been deepened, shifting the focus of cohesion policy to a larger scale.

The necessity of scientific investigation of territorial inequalities

Territorial inequalities will remain a determining feature of the continent, both in macro-regional (West-East; North-South axis, blue banana; pentagon etc.) areas and in the intrastate dimension. This means that complex, interdisciplinary research is required on a European scale involving most member states, investigating the effects of the cohesion policy of the EU and policy development in the member states. Territorial inequalities affect the competitiveness of the continent and also the social peace and internal solidarity of Europe. The current economic crisis is likely to reinforce the effect of centrifugal forces and the current means of European cohesion policy may prove insufficient to counterbalance this phenomenon. Further, it is certain, that the EU's competition, innovation or common agricultural policies intensively influence the conditions of the regions. However there is some confusion as to how far 'sectoral' policies should take territorial dimensions into consideration.

Policy tools and dimensions for the analysis of territorial inequalities must be renewed. Although sociology, economics and political studies have long been concerned with territorial inequalities, recently regional science has evolved as the science investigating 'the territorial dimension' in a complex way. But regional sciences have not yet been able to influence territorial planning and development policy directly.

There are some positive signs. A large number of research findings have accumulated on regional development and urban policies and the treatment of spatial inequalities with economic and social instruments. These contribute to maintaining the issue on the political agenda and to the introduction of different development strategies and means. An example is the ESPON research series financed by the EU, which has accumulated an extremely large quantity of information about the spatial character of the continent. Workshops of social science in the member states have also contributed to the better understanding of the nature of territorial inequalities.

However, the study of development policy and territorial inequalities has still not penetrated into sectoral policies; as a result, segregated sectoral measures and interventions are often unable to produce sustainable effects. These 'governance miscarriages' imply the urgent necessity of following more complex and 'softer' approaches. Social sciences, of course, are important not only to assist policy making; it is also crucial to follow and explain social processes influenced by complex environmental factors (e.g. culture, traditions, social networks, living conditions etc.). Comprehensive social scientific researches can show how 'territorialities' have influence not just on the economic performance but also on the mentality and health of the society.

Putnam for instance has called attention to the significance of social capital and civil networks within development policy; he has some followers in Europe (Putnam et al. 1993). Also important are the researches on impacts of the regional policy and the institutional system of the European Union (Bache 1998; Batchler and McMaster 2008); at the same time the new institutionalists analyse the regional aspects of global economic development (the European Amin-Thrift, 1994, and Krugman, 1995, as well as Porter, 2001, from the US can be emphasised). An important message of these

researches is that it is not sufficient to analyse economic, social and infrastructural correlations of spatial inequalities only in the dimension of sectoral and public policy aspects; we must interpret them on the basis of basic, interdisciplinary research. European and national cohesion policies must devote more attention to human, political scientific and institutional aspects.

Regional governance and decentralisation

As globalisation and European integration proceeds and governance models are transformed, the territorial, regional tier of governance is being re-evaluated. Regionalism has a large literature: scholars of public administration, regional economists, and political as well as regional scientists have pointed out that decentralisation has strong effects on the structure and functioning of governments and the outcomes of regional policy The important dimension of territorial governance has also been analysed in the literature of European integration since multilevel governance (MLG), and the movement of the 'Europe of Regions' has also strengthened the meso-level governance. Some evaluations suggest that regionalised, decentralised countries were more successful in the treatment of regional inequalities and in strengthening the competitiveness of their regions than the centralised countries. Examples are Spain and Germany, but serious progress was also achieved in the traditionally centralised France and United Kingdom (Keating 2004). However, comparative studies have recently drawn attention to the fact that the majority of centralised public administrations in member states successfully maintain their positions.

In the enlarged Europe especially, the position of meso-tier governance has become fairly ambivalent. The new member states (except for Poland) are strongly centralised and the trust of European institutions in regionalism and their enthusiasm seems also to have diminished (Hughes et al. 2004; Bachtler and McMaster 2008). The spirit of the 'Europe of Regions' has recently become less noticeable even in Western Europe (Elias 2008). At the same time networks of cities within the regions and Europe wide are becoming increasingly important in organising and integrating public services and cooperation within society (Bovaird et al. 2002; Bukowski et al. 2003). It may be that the increasing importance of territorial cooperation among regions and networks of cities, and the European new neighbourhood policy with the border countries and regions outside the EU will counterbalance the trends of recentralisation. Social sciences (e.g. the borderland studies) can help in understanding the nature and cultural challenges of this multilevel cooperation.

Future development trends can take two different directions. 'Re-nationalisation' and 'loosening' European integration, as well as decreasing the role of European regional policy, seems to be a possible but in many aspects negative option. If it occurs, local and regional governments will lose their former position, increasing the existing democratic deficit and territorial inequalities. The second option is that of regional decentralisation. This could enhance participative democracy and contribute to the improvement of economic competitiveness and the strengthening of social cohesion. Supporting these processes requires interdisciplinary social scientific efforts based on international collaboration, especially in political science, public administration, sociology, economics and regional science The forms and causes of territorial inequalities and the governance situation are bound up with each other. The European scientific community must recognise that the deepening of territorial inequalities and its concentration in the macro regions threatens European integration itself. Then research on territorial inequalities can contribute to the delicate balance of diversity and integration of the continent.

Social aspects of climate change

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Introduction

Change and variability are normal features of the Earth's climate – defined here as the average state of the weather. We know that every winter or rainy season is different, and that there have been cooler and warmer periods in history, including major events such as ice ages. These variations have greatly shaped human cultures, societies, economies and technologies. The need to cope with periods of drought or to protect against major storms has produced a wide range of institutions and social responses that we often take for granted. Indeed, one of the explanations for the success of humans societies in attaining their current dominance is that, when compared with competitors such as Neanderthals, they have a greater capacity to anticipate and adapt to climatic variability and change.

But this longstanding influence of climate on people is not one-way. Controversially, William Ruddiman (2005) has argued that human civilizations have influenced the global climate system for at least the past 8000 years, through the domestication of livestock with the rise of agriculture (producing greater emissions of methane – leading to warming of the atmosphere), the re-afforestation of large parts of Eurasia following the plague of the Middle Ages (fixing more atmospheric carbon in wood – leading to cooling of the atmosphere) and more recently through the increasing emission of gases as a result of the use of fossil fuels to power industrialisation – once more causing warming.

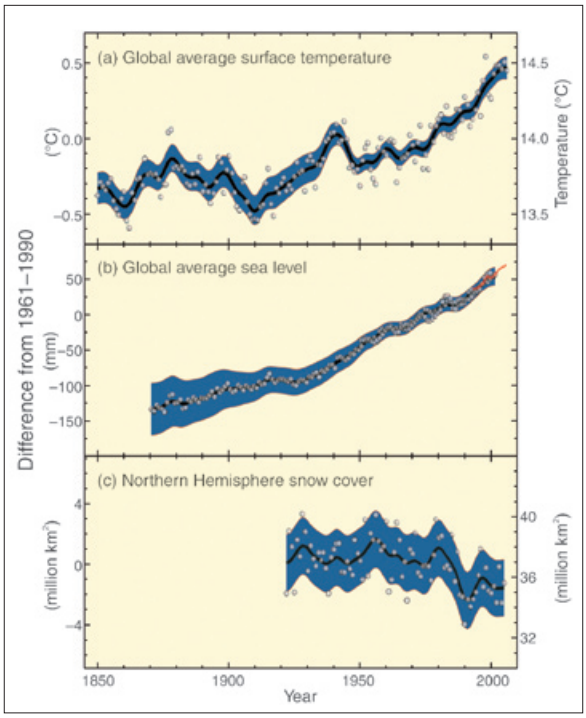

Figure 1. Observed changes in a) global average surface temperatures, b) global average sea-level rise, and c) northern hemisphere snow cover (1850-2003), relative to corresponding averages 1961-1990. Source: IPCC (2007) Synthesis Report, Figure 1.1: 31.

Societies embedded in climates

Regional and global climates change as a result of natural cycles and variations, including changing intensities of solar radiation. Climatic changes have influenced civilizations, but human development has also influenced climates. Societies can therefore be seen as embedded in climate and climatic change. Over the past thirty years scientific research and observations have demonstrated that the embedding of society and climate is becoming deeper and that this process generates important new risks for people and for ecosystems.

In the scientific debate about climate change and what it may mean for people and societies a number of important conclusions have been drawn. First, that the chemistry of the Earth's atmosphere determines its temperature, structure and behaviour. Second, that there are structural, long-term interactions between the atmosphere, the oceans and land and vegetation. Third, that the chemistry of the atmosphere has been substantially changed, especially since the beginning of industrialisation in Europe, by the emission of greenhouse gases (GHG) such as carbon dioxide and methane. Fourth, that we can observe changes in the average temperature of the atmosphere and that the best explanation of this observed warming is human-induced changes in the atmosphere's chemistry. In its most recent report, the Intergovernmental Panel on Climate Change (IPCC 2007) says that "…(m)ost of the observed increase in global average temperatures since the mid-20th century is *very likely* due to the observed increase in anthropogenic GHG concentrations.' (IPCC 2007: 39, see Figure 1). By 'very likely' the IPCC means there is a greater than 90% chance that this statement is true. Fifth, observed changes in climate – especially warming – are now thought likely to be responsible for observable changes in glaciers (melting), ecosystems (earlier breeding by birds and butterflies in the northern hemisphere) and rivers (falling and more erratic flows as a result of melting glaciers and changed precipitation patterns). Finally, greenhouse gas emissions and atmospheric concentrations of these gases continue to increase and are likely to produce far more significant climate changes over the coming century and beyond. Current projections are that while global average temperatures have increased by about 0.74°C over the past


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century, they are likely to increase by between 2-4°C over the coming century. People and societies appear to have committed themselves to major long-term climatic changes, with many still unforeseeable effects.

Key social issues

Although the direct link between climate and the conditions of social life in industrialised societies may be limited, it is clear that life on Earth does finally depend on the climate system and that changes in climate are likely to have a complex variety of social, economic and political consequences. Social scientists are still at a relatively early stage in understanding these consequences, but have already made significant contributions.

What is dangerous climate change?

Since societies have developed under conditions of climate variability and change, they clearly have a measure of resilience to such changes. Societies have proved in the past that they have been able to adapt to climatic change. Arguably, with greater knowledge and wealth, and with better technologies and more responsive governance, we might expect adaptation in response to current and future climate change. But there is also awareness that there are limits to adaptation. If the climate changes very rapidly, or beyond certain tolerable thresholds, or leads to unanticipated extreme events, there are likely to be major consequences and costs to people and societies.

There is a continuing scientific and policy debate about what constitutes 'dangerous climate change' – a term used in the key international treaty, the UN Convention on Climate Change (UNFCCC). Many scholars have argued that there is no simple answer to the question – a rise in temperature may be dangerous for one group (those with respiratory disease), but may be an opportunity for another (the ice-cream seller) – but in the meantime a definition has become codified in important political commitments, such as those of the European Union. The EU has set a target for its climate policy of an absolute 2°C limit on average global temperature increases above pre-industrial levels. This limit was set primarily because of the perceived social and economic costs associated with change beyond this.

The social scientific challenge has been to establish how vulnerable specific regions, countries, sectors, groups and households might be to climatic changes; to calculate what the economic and social costs of climate changes might be in aggregate and for specific groups; to judge how these costs are distributed and whether they are acceptable; and to assess how climate-damage costs compare with the costs of seeking to avoid climate change (mitigation) or adjusting to the impacts of change (adaptation). More generally, social science has been concerned with the social and institutional challenges of large-scale changes in energy and other socio-technical systems in response to the need to cut GHG emissions radically over the coming century, while also adapting to the impacts of already-committed changes in climate.

How vulnerable are societies to climate change?

Changes in climate and climate variability will have specific effects across different social groups, sectors and regions, often in complex ways. One of the key findings of work on climate vulnerability is that changes in climate operate to induce new vulnerabilities (and opportunities) for groups and individuals against the background of many other economic and social changes (O'Brien et al. 2004). So, for instance, small farmers in Romania are already vulnerable to changes in livelihood as a result of their lack of capital and market power, making their exposure to additional risks of drought greater than if they had more secure livelihoods. We therefore speak of multiple stressors, some of which may be influenced by climate change, as lying at the root of social and economic vulnerabilities. In seeking to understand vulnerabilities to climate change, we need to disentangle a climate signal from the frequently complex social and economic con-

text in which vulnerability is being experienced. Another feature brought out in the Romanian example is that vulnerability is often highly specific – socially, institutionally and spatially. Not all farmers in Romania will, for instance, have equal vulnerability to damage as a result of climate change-influenced flood risks. Those with land in floodplains have greater exposure, although they may also have greater resilience because of the greater profitability of farming there. This entangling of climate with social and economic factors, and the complex pattern of effects on specific groups, makes it difficult to make simple claims about climate risks and vulnerability across broad regions of the world.

What is the social cost of carbon?

Climate change will cause economic damage and kill people; it will change landscapes and ecosystems, and it will produce adaptive responses as the scale and pattern of this damage becomes more apparent, either as a result of experience or through scientific projections. We know that some regions (including coastal zones, mountains, rivers, polar regions) and sectors (such as agriculture and forestry, water, health, tourism) are more vulnerable than others, and can make reasonably reliable estimates of damage costs associated with a variety of climate risks in the present day. A complicating factor is that for certain regions there will be, in the shorter term at least, also clear benefits from climate change. The area suitable to grain maize cultivation is due to grow by 30-50% during the 21st century as a result of warming (Olesen et al. 2007).

The scientific and political debate over the social cost of carbon centres on the question of how to take account of future damage. A highly technical debate was given new life by the publication of the Stern Review on Climate Change (2006). This Review argued that the economic costs of damage from climate change could range, now and into the future, from between 5 and 20% of global gross domestic product. Most previous estimates had been much lower; in the range of 1-5% of GDP. The central point at issue concerns how we treat the value of future damage that will be caused by current emissions of greenhouse gases, given that the effects on temperature, sea-level rise and other associated climatic changes, will be felt for periods of decades and centuries. Many economists believe that the flow of future costs and benefits of any activity or event should be discounted because people generally value the present more than they do the future (Tol 2007). But no consensus has emerged about the 'correct' discount rate over the long-term future for damages that have a chance of being catastrophic for large regions of the world (Weitzman 2007). However, the choice of discount rate is crucial because in large part it determines the value of the damages associated with greenhouse gas emissions, and therefore also the price that people living today would, theoretically at least, be willing to pay to avoid future climate change through mitigation (see Figure 2). A closely linked problem is about the cost of mitigation. Here, estimates are more convergent, ranging between 0% and about 3% of GDP, although controversy exists over how to account for innovation and diffusion of new low carbon technologies throughout the world economy. Some scholars believe that innovation can bring much more marked price reductions than others.

How should the international governance of climate be organised?

The climate may be defined as a 'public good', that is, it is something (a 'good') to which people have unlimited access (it is non-excludable) and the use by one person or group does not affect its use by others (it is non-rival). It is also global, being unrestricted by national boundaries. The problem with public goods is that they tend to be over-consumed (in this case the use of the climate as a sink for emissions from energy and other uses) because there are no natural incentives for actors to conserve them (since others have unrestricted access) and because it is difficult to enforce compliance with agreements that are made about management, especially when such agreements are between independent nation states. The problem of over-consumption is sharpened by the way the costs and benefits of mitigation and adaptation are distributed. In principle, the costs of mitigation are high in the short-term, with the benefits flowing from less climate change coming many decades hence. Moreover, the benefits of mitigation effort

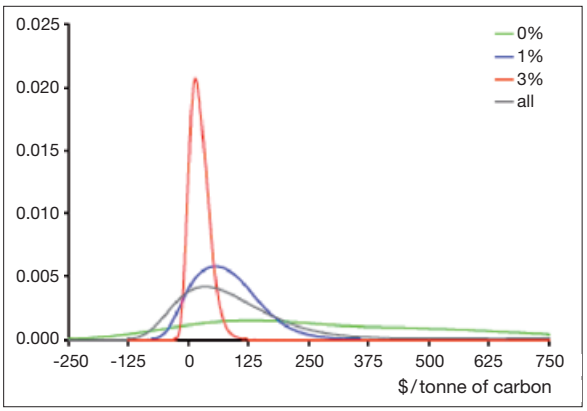

Figure 2. Social cost of carbon: distribution of values in US$/tonne of carbon in 211 studies, split according to the pure rate of time preference used in the study. The figure shows how the range and mean of estimates of the cost of carbon increases as a lower discount rate is applied.
Source: Tol (2007), Figure 1: 14.

by a single country will be shared by all other countries. Formally this problem is known as the 'prisoner's dilemma'. Although a stable and quiescent climate is in everyone's interest, countries are uncertain about whether to act cooperatively to manage the climate and about how to coordinate and incentivise international collective action. Theory suggests that there will be strong incentives to defect from any agreement and to free-ride on the efforts of others.

The Kyoto Protocol to the UNFCCC is a remarkable, but also much criticised, instrument for coordinating international action on climate. Although it has been partially successful – EU emissions of greenhouse gases have fallen since 1990 as agreed – there are also a series of serious weaknesses. The most important is that only a minority of richer countries accepted emissions limits, while the United States, and major developing countries such as China and India did not. These countries now and in the future will contribute the most emissions into the global environment (Botzen et al. 2008). Increased participation is therefore an important goal for a new global agreement due to be negotiated in Copenhagen at the end of 2009. A key problem is that industrialising countries have traditionally argued that they have a right to develop, including rights to consume more energy per capita. New financial, technological and trade incentives will need to be offered to encourage these countries to begin to accept emissions limits. The international politics of climate change have been affected by the election of President Obama, but the willingness of the United States to commit to deep emissions reductions is still unclear.

Can societies adapt, and who will pay?

If climate is already changing and is expected to change more rapidly in future, then people, organisations and societies will be expected to adapt to these changes. They will seek to reduce their exposure to emerging climate risks, build up their resilience to damage they cannot avoid and, where possible, find ways of exploiting new opportunities that arise. All groups have some capacity to cope with changes in their social and natural environment, but it is clear that some groups will have a greater capacity than others. For instance, advanced economies may have a greater capacity to protect themselves and to adapt to sea-level rise (by building dykes, for instance) than poorer economies. But assessing and measuring the capacity to adapt to climatic changes has proven difficult. Nor has it yet been possible to make reliable estimates of how far current and future adaptations – beyond simple measures such as building dykes – might reduce the economic and social costs of climate damage. Despite these uncertainties there is an intensifying debate about the liability of rich countries for changes to the global climate that pose especially marked risks for poorer countries in Africa, Asia and Latin America. Two forms of injustice are in play. First, the rich countries have through their, mostly unwitting, alteration of the global climate occupied the available 'environmental space', so that the capacity for development by poorer countries may become constrained in a global effort to stabilise climate change. Second, poorer countries are perceived as the victims of changes in the world's climate to which, until now, they have not been the main contributors. Understanding and negotiating the mutual responsibilities will be one of the tasks of the new Copenhagen agreement.

What role does social research have in policy?

Science and policy interact: science is used in setting policy agendas; policy generates new questions that shape social science research agendas; policy interest stimulates research funding; and social science research produces knowledge that helps policy makers respond to societal problems. Such interactions are especially strong in the climate domain. But what role has social science played in shaping policy and societal responses to climate? At a general level, economic research underlying integrated assessment models (IAMs) have been fundamental in shaping policy attitudes to the costs and benefits of climate action. One example of this is the Stern Report. More specifically, economic theory stands at the heart of the design of policy instruments, such as the EU Emissions Trading Scheme (EU-ETS) introduced in 2005 as the primary means by which to introduce an economic stimulus to emissions-reduction efforts in industry. Likewise, arguments about carbon and other taxes that aim to 'internalise' the externalised damage costs of climate change have played a key role in climate policy debates. Innovation studies show that price signals alone are unlikely to be sufficient to generate the institutional and behavioural changes needed to achieve low-carbon energy economies. Here too, social research has played a major role in influencing innovation and 'transition' policies now being adopted in many countries. Finally, social research is beginning to play a role in identifying and responding to new social vulnerabilities that emerge as a result of climate change. For instance, the response to increased riverine flood risk may be to bolster flood defences, but it will also involve other risk management approaches, including an increased role for insurance. Drought insurance schemes, drawing on social research on risk perception and economic analysis, are now being developed in parts of East Africa where rainfall appears to be becoming more variable. These are just some examples of the growing role for social research in responses to climate change.

Conclusion

Climate change presents immense new environmental, economic, political and social challenges. Although in an earlier phase, while we were still seeking to understand the nature of anthropogenic forcing of the climate, natural sciences played a dominating role in the scientific and public debate, this has now changed. There is now an overwhelming scientific and political consensus that climate change is a current and future reality. The dominant issues are now related to managing our climate system and responding to the changes that now appear inevitable over the longer term. Most of the important questions are now social and economic: How vulnerable is society? How quickly can we change economies to be less carbon-intensive? Who should pay for this change? What is the role of government and what should the consumer do? These are the questions that social and economic research will be grappling with over the coming decades, seeking to bring clarity to public and policy debates, while also offering paths towards an effective and equitable set of solutions.

The socio-economic impact of innovation research

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Introduction

Innovation is generally recognised today as necessary for sustained economic growth. OECD, EU and the World Bank promote innovation policy, most countries have developed national innovation policy strategies and in business it is recognised that innovation is necessary to survive in global competition.

This situation is different from that of forty years ago when international and corporate competitiveness was seen mainly as reflecting low costs – sometimes leading to the absurd proposition that a reduction in real wages in a country should be seen as strengthening international competitiveness.

To what degree has socio-economic research on innovation contributed to the new insights and shaped business and policy strategies? In this brief note the focus will be on the link between 'economics of innovation' as a research area and 'innovation policy' and we will emphasise the link from research taking place in Europe, although there has been much collaboration with scholars in the United States.

Economics of innovation – the beginnings

Classical economists were certainly aware of the importance of technical progress for capitalist development. In his introduction to *The Wealth of Nations*, Adam Smith (1776) introduces innovation as an important source of wealth. He also drew a distinction between two different kinds of innovation: one where workers innovate on the basis of their experience – 'experience-based' innovation; and another where 'men of speculation' contribute to the development of new and more efficient techniques – 'science-based' innovation (Jensen et al. 2007). A hundred years later, the Marginalist Revolution in Economics changed the perspective and gave full attention only to the allocation of given resources. From then on until fairly recently technological change was relegated to being an exogenous phenomenon in economics – new technology seemed to come as 'manna from heaven'. This may explain why the first analytical efforts that inspired public policy related to innovation came from natural scientists rather than from economists. Bernal (1939) in the UK and Vannevar Bush (1945), both natural scientists, pointed to the enormous potential of science as a basis for economic growth.

In the late 1950s Richard R. Nelson (1959) gave an economic argument for why governments should invest in science. The argument was based upon the assumption that the outcome of scientific research was information accessible to all (a public good) and that incentives for private agents to invest in science were too weak. This perspective, while important when it came to mobilising public money for universities and public laboratories, was based upon a rather simple and mechanical understanding of innovation as a linear process and of knowledge as equalling information (codified knowledge).

Modern innovation research

As can be seen from Table 1, research on innovation has grown much more quickly than research in general in the post-Second World War period. While the field was negligible in the 1950s it expanded rapidly especially after the middle of the 1960s.

1955	1
1965	2
1975	6
1985	7
1995	10
2004	16

Table 1. Share of scientific articles with 'innovation' in the title 1955-2004 (number out of 10 000) – estimated from Fagerberg et al. (2005), *Handbook on Innovation*, p. 2.

Beginning in the 1960s, modern innovation research began to unravel the complexities of real innovation processes, showing that innovation – bringing new products or processes to the market – does not follow automatically from investment in science. Instead, innovation is an interactive process where feedback from users is fundamental for successful innovation. It also showed that, besides 'scientific information' and formal research, tacit knowledge and experience-based learning play key roles in the innovation process.

In the case of Europe the first important contributions came from Christopher Freeman (Freeman and Soete 1997). In 1966 Freeman set up the first major department working on innovation research (the Science Policy Research Unit (SPRU) at Sussex University, UK) and from here he organised research that gradually inspired a world-wide wave of scientific endeavour (Fagerberg et al. 2005).

From the very beginning this new field of research was developed in an ongoing interaction between the public policy institutions and academia. Individuals who played a key role in developing the field were directly involved in collaboration with public policy institutions.

Freeman himself worked with OECD in the beginning of the 1960s to develop the Frascati Manual that gave OECD-member countries a standard for how to gather and present data on national R&D data (OECD 1963b). Freeman also contributed to early OECD work on technology and economic growth (OECD 1963a, OECD 1970;

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Martin 2008). Another key person in European innovation research, Keith Pavitt, worked full time at OECD for a period before he joined SPRU.

In the 1980s innovation research flourished and produced insights with important implications for public policy. Research demonstrated that innovation is a cumulative, uncertain and irreversible process rooted in interactive learning (Dosi et al. 1988). This led to the concept of 'innovation systems', now widely used as policy framework for international and national organisations (Freeman 1987, Lundvall 1992, Nelson 1993). These insights got the official stamp of OECD in connection with the TEP-programme (OECD 1992). Christopher Freeman, Keith Pavitt, Luc Soete, Giovanni Dosi and Bengt-Åke Lundvall were among European innovation researchers who made important contributions to this project (see for instance OECD 1991).

Impact upon public policy

The diffusion of the new perspectives had an impact upon public policy and public policy discourse. In the early 1990s the Finnish Prime Minister Esko Aho, in the middle of a major national economic crisis, expanded investments in research and education with explicit reference to the need to strengthen the Finnish national innovation system. Since then Finland has remained as a role model for innovation policy worldwide. Esko Aho, who has become a director at Nokia, is today a key person in shaping innovation policy in Europe; he argues for a broad and systemic approach and also for expanding both private and public investments in knowledge creation in the current period of crisis.

During the 1990s OECD developed a broader approach to innovation and knowledge creation under the headings of 'the knowledge-based economy' and 'the learning society' (see for instance OECD 1996 and OECD 2000). Again innovation scholars such as Giovanni

Dosi, Dominique Foray, Luc Soete, Bengt-Åke Lundvall and Frieder Meyer Krahmer played important roles in developing these ideas.

At the European policy level the emphasis on innovation and knowledge-based competitiveness in the Lisbon strategy of 2000 reflected the outcomes of this work. In 1999 the Portuguese Prime Minister Antonio Guettierez actually engaged in a thorough conversation with innovation scholars in the preparation of the 2000 summit. Maria Rodrigues, who played a key role in preparing the Lisbon strategy, has since edited and written several books that demonstrate how academic work in social science has inspired the evolution of the Lisbon strategy (Rodrigues 2002; Rodrigues 2009).

Outside Europe all major countries have developed their own national innovation strategies, often with explicit references to European researchers. In 2006 China's government presented a 15-year strategy for strengthening the national innovation system of China (Gu and Lundvall 2006). The fact that the strategy was coordinated by the Prime Minister indicates the high status of innovation policy in China. All major academic works on innovation systems were translated into Chinese.

Problems with transferring research to public policy

To what degree has the public policy world actually absorbed and used the outcomes of innovation research? Policy makers all over the world have paid lip-service to the concept of innovation as an interactive process – the innovation system perspective – but it has not always been applied to actual policy making.

One example is the Barcelona objective of the European Union, of raising the level of R&D effort to 3% of GNP in all member countries. This kind of strategy makes sense only if you start from a linear approach to innovation. The many references to a European paradox also reflect a narrow understanding of the innovation process where it is assumed that innovation is the outcome of science-based learning, with neglect of experience-based learning. At OECD the strong influence of the neo-classical paradigm has led that organisation to a flawed analysis. This was the case for the work on 'the new economy' where an unhappy marriage between production-function approach and hype related to information and communication technology resulted in naïve analysis and prescriptions (OECD 2001).

In general, public policy tends to be biased in favour of simple models and measurable outcomes. Innovation research cannot always deliver the necessary simplicity and some of the key relationships in innovation systems may be difficult to measure. Therefore there is a tendency to fall back upon old and obsolete ideas. This is especially the case when ministries of finance are in charge of public policy coordination.

Future challenges for innovation research

In the current crisis there will be a natural tendency to give major attention to the financial system, since this is at the very root of the crisis. Both innovation policy and innovation research might disappear from sight. This illustrates the problem with strategies that neglect 'the real dimension' of the economy, although for the first time, in the summer of 2009, the new innovation policy strategy of the OECD was discussed at a meeting of ministries of finance.

There are now three major challenges for innovation research:

1. Establish analytically and empirically the link between innovation and working life. Recent research (Arundel et al. 2007) demonstrates the importance of this link. In the context of public policy it may be argued that as long as innovation is analysed as an exclusive game played by managers, scholars and policy makers the necessary participation in change will not come forward.
2. Establish the link between innovation and the energy/environmental crisis. The energy and environmental crises seem difficult to tackle when addressed within a static framework of cost-benefit analysis. The alternative is a dynamic perspective where investment programmes are designed in such a way that they frame processes of learning that both reduce costs and trigger radical innovations (Smith 2008).
3. Establish the links between innovation and globalisation. How can new technologies and new forms of organisation make countries in Southern and Eastern Europe less exposed? How can such strategies be combined with sharing knowledge with poor countries in the rest of the world? To find ways to engage in interactive learning between the global South and North is perhaps the most important challenge for innovation research (Rodrigues 2009 and www.globelics.org).

Conclusion

What does European social science need?

The preceding brief descriptions of examples of European research in some of the social sciences show that European scholars, as leading members of the worldwide community of social scientists, are asking and answering questions which are vital for the wellbeing of European society. If they are to continue to do this, they need the support of the communities which they study. With such support, the social sciences of Europe can continue to serve their communities, as they wish to do, by honest analysis of the vital issues which affect all our futures.

It is likely that the social sciences need in particular:

1. **Adequate funding to train and develop the next generations of social scientists who will teach and aid the learning of one-third of Europe's students.**
2. **Support for the infrastructure of data collection and dissemination, and for improved access to administrative and commercial as well as academic data.**
3. **Support for the research networks, which are the lifeblood of social science disciplines and which promote the integration of European research.**
4. **Mechanisms to develop ever-closer links with cognate disciplines in the humanities and the natural and biological sciences.**
5. **The development of statistics and indicators of research activity, outputs and impact of research in the social sciences and humanities.**
6. **The willingness of policy makers to listen to the evidence and to the conclusions of social scientists as they analyse the problems of society.**

This is merely an outline of what is likely to be required for the social sciences to achieve their full potential. If the analysis in this document of the current state of European social science is accepted, there is still much to be done. The Standing Committee for the Social Sciences of the European Science Foundation is happy to accept the responsibility for making detailed policy proposals in all these fields and will develop this as one of its major future roles.

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