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The Globalization of Knowledge and the Principles of Governance in Higher Education and Research

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The 5th Forum on the Internationalization of Sciences and Humanities

4 “We risk losing the best minds, not only in Germany, but in science overall”

Framework conditions for international science cooperation – some remarks from the German political point of view

| By Krista Sager, Research Policy Spokesperson of the Alliance 90/The Greens parliamentary group



9 “There are no one-size-fits-all models”

Principles of governance in a globalised higher education and research landscape – reflections from a system perspective

| By Lesley Wilson, Secretary General of the European University Association (EUA), Brussels, Belgium

14 “The market will always be a factor in the landscape of research”

Principles of governance in a global knowledge society – reflections based on observations of the higher education and research landscape in the United States

| By Robert M. Berdahl, Interim President of the University of Oregon, USA

22 “Developing countries are becoming the testing ground for Western research agendas”

Principles of governance in a global knowledge society: What is the scientist’s social responsibility?

| By Remi Sonaiya, Humboldt Ambassador Scientist, Ile-Ife, Nigeria

27 “Science and scholarship are affected by the consequences of globalization”

Principles of governance and the future of systems, institutions, and individual researchers in a globalized higher education landscape

| By Dieter Lenzen, President of the University of Hamburg, Germany

Opinions

33 Abstracts of talks

Multifaceted mission

| By Linda P.B. Katehi, Chancellor of the University of California at Davis, USA

The voice of young scientists

| By Tilman Brück, Member of the Executive Committee of the Global Young Academy

Education has no borders

| By Pradip Narayan Ghosh, Vice Chancellor of Jadavpur University, Kolkata, India

3 Preface

By Helmut Schwarz, President of the Alexander von Humboldt Foundation, and Konrad Samwer, Chair of the International Advisory Board



20 Impressions

The Globalization of Knowledge and the Principles of Governance in Higher Education and Research

36 Imprint

Inside IAB

34 The International Advisory Board

35 Forum on the Internationalization of Sciences and Humanities

Preface

Dear reader,

Today, more than ever, science and research are areas of fierce international competition. With universities redesigning themselves as global entities, research funding and science organizations realigning their international strategies, and global researcher mobility increasing, the internationalization of science and research systems has made considerable progress in recent years. This has had a significant impact on research and governance structures, methods of funding, and the attractiveness of research institutions for scientists and researchers.

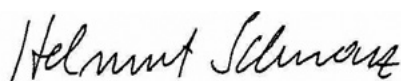
In a highly dynamic and competitive global environment, Germany has to respond to these challenges. Therefore, the Alexander von Humboldt Foundation assumes an active role in science policy debates, joining forces with its partners to ensure that Germany remains a top address for the international academic elite. The International Advisory Board counsels the Foundation and its partner organizations in this context. Hosted on the occasion of its annual meeting, the Forum on the Internationalization of Sciences and Humanities provides an opportunity for eminent international experts to hold an open exchange of views on global developments and matters of science policy that impact international initiatives.

The 5th Forum on the Internationalization of Sciences and Humanities addressed the question of the structures needed to foster innovative research in an environment marked by increasing competition, tighter budgets, and rising institutional differentiation. What does the global race for the best minds, universities and research institutions mean for national science systems against the backdrop of decreasing financial resources? How can the pressure for better efficiency and commercial interests be reconciled with the freedom of research and the desire for scientific progress? What does the globalization of academic markets mean for individual researchers?

The typical Humboldt Fellow is a young researcher, driven by curiosity, eager to contribute to the worldwide production and dissemination of new knowledge, and ready to make a career in higher education and research in her or his home country or elsewhere in the world. As a member of the Humboldt network, he or she is not only given access to large scale facilities and data bases, but also contributes to the further internationalization of the German research system. Yet many researchers find themselves left alone on globalized academic markets, with pension plans and social security benefits being hard to transfer from one place to another. Meanwhile, publicly funded universities and research institutions face a balancing act between serving the needs of social and economic development on the one hand and positioning themselves in the global competition on the other. Therefore, as much as attractive working conditions, principles of good governance are crucial to international collaborative frameworks. After all, funding still has borders, even if science does not.

As we invite you to join us in our discussions, it is our hope that the following documentation of last year's Forum will provide food for further thought and prove inspiring reading.

Sincerely,



Helmut Schwarz



Konrad Samwer



Helmut Schwarz
President
Alexander von Humboldt Foundation



Konrad Samwer
Chair
International Advisory Board



Krista Sager is the Science and Research Policy Spokesperson of the Alliance 90/The Greens parliamentary group and was from 1997 until 2001 Hamburg's Deputy Mayor and Senator for Science, Research and Equal Opportunity.

“We risk losing the best minds, not only in Germany, but in science overall”

Framework conditions for international science cooperation – some remarks from the German political point of view

“What are the essential political framework conditions for international scientific cooperation? My answer would be, advocacy for an open society and at the same time a willingness to defend it, even if that’s less popular.”

In September 2001, I was the Senator for Science and Deputy Mayor in my home city of Hamburg. In the night from September 12 to 13, the government was informed that students from our Technical University (TU) had been involved in an attack on the World Trade Center in New York – the 9/11 attack. I arranged with the then President of the TU to convene a plenary meeting that same day, at which he and I would speak to the students and university members. As I spoke to the TU's international student body, it was clear to me that the world would no longer be the same as it had been before 9/11.

But how would it be? Where was its development headed? What would the consequences be? These questions remained completely open. After the meeting a young man approached me and asked whether Arab students like him would still be able to study

there in the future. I tried to reassure him, but at the time I had the same feeling of “I don't know”. Fortunately, today I can say with relief that science has largely proven its resilience and politics and society have profited. I am optimistic that the situation will be similar when we come to take advantage of the opportunities presented by the Arab Spring in future.

Subsequent investigations by the “American Association for the Advancement of Science” (AAAS) have shown that those fears of the negative consequences of 9/11 for science and research were not entirely unjustified. In the USA, entrance requirements for international students and researchers were tightened. There were repercussions for research priorities, research funding, and the content of research. The then director of the AAAS, Albert H. Teich, already warned in 2003 that science and research could become another victim of September 11th.

I have chosen to return to this situation at the beginning of my speech because it leads me back to one question accompanying this “5th Forum on the

Internationalization of Sciences and Humanities”, on which I have been asked to provide some remarks: What are the essential political framework conditions for international scientific cooperation? My answer would be, advocacy for an open society and at the same time a willingness to defend it, even if that’s less popular. This would involve creating the political conditions that enable the mobility of students and researchers as well as opposing racist and xenophobic tendencies.

Internationalization and the contradictory priorities of cooperation and competition

Politicians and society are nowadays well aware that international cooperative research is absolutely necessary in dealing with global challenges no country can manage alone. This has been shown in an exemplary way in the preliminary work on the EU’s new Framework Programme for Research and Innovation, “Horizon 2020”. Funding and support for international cooperation in research has to concentrate on major challenges such as climate change, resource consumption, health, and demographic change. Science is regarded by elements of the public and society as playing almost the role of a savior, one which will hopefully provide answers to all questions and solutions to all problems, since it is seen as increasingly unlikely that politics will “save the world”.

Science and research benefit not only from cooperation, but also from competition: competition between participants, but also between nations. Over the course of the Excellence Initiative we have established that “competition is good for business”, as we say in Germany. Competition for funding for top-level research and post-graduate programs has undoubtedly brought a dynamic to the German science and

research system. It has also been shown to provide extra stimulus for competition among nations. The international experts of the Excellence Initiative have become chief witnesses for their countries of origin of the fact that something is happening in Germany. And we experienced the way in which the view from outside could suddenly shift the focus onto competition issues that hardly anyone at the national level would have expected. Simple questions from our international peers, such as “Where are all the female researchers?”, shook up the German system of science and research quite a bit.

Equality was suddenly no longer only the hobby of a few aged feminists in academia and in science and research policy. This was not just simply about justice; it was about quality, innovation, criteria for selecting the best, and the competitiveness of Germany’s entire science and research system. For someone like me, who has battled for this issue for decades, it was wonderful to see that presidents of large scientific organizations and rectors of universities suddenly declared equality to be an important leadership and management issue, how they called for a more professional and committed equality policy and even for binding target quotas.

Science out of kilter or the question of balance

Today not only the praises of the Excellence Initiative are sung, but also questions of the impact on balance in science are critically raised – and this quite rightly so in my view. In an era of scarce public funds, the concentration on funding for competitive processes and public projects funded by third parties leads to a lack of basic funding for universities. This is especially true in our federal system, where

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the financing of universities by individual German states (Bundesländer) has failed to keep pace with the demand to enable a constantly increasing proportion of the younger generation to obtain a university education.

When top academics are mainly preoccupied with applying for third-party funding, without the necessary professional support, and research and science is carried out almost entirely by those just starting out on their careers, can this happen without impacting the overall quality? Are we not in danger of becoming too short-sighted? Of producing “more of the same”? Of taking too few risks? Where is the space and time for digressions leading to qualitative ‘great leaps’ that may need more time and – naturally – involve greater uncertainty? Where is the space for the productive interaction of new findings, experience and intuition? These are just some of the critical questions that have been raised.

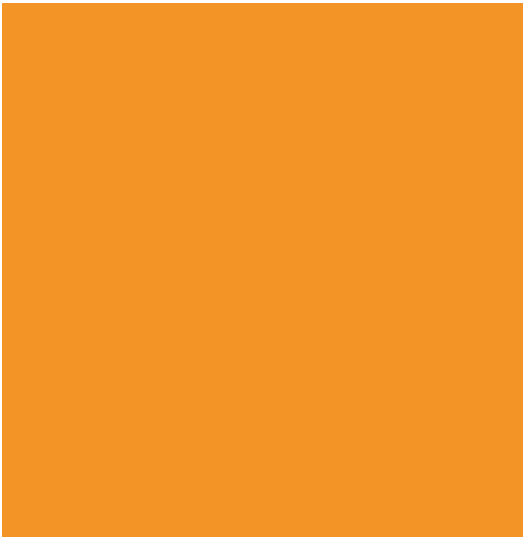
“During the Excellence Initiative, we could have lost sight of what really counts in the production of new knowledge: the new minds of the next generation of scientists.”

I personally regard the question of balance as particularly critical for our next generation of scientists. International cooperation obviously requires mobility and flexibility, as well as changes of institutions, locations, and countries. Our enthusiastic young people are willing to take all this on, but they are also social beings, people with family ties, and only a few of them will want to be nomads all their lives. Support with issues such as childcare, housing, and dual-career options should certainly be a matter of course, but is not yet in many situations.

Since last year I have been noticing that conditions for young scientists have deteriorated significantly as a result of the financial crisis, even in the USA. Tenure track, once a great competitive advantage of the USA, is now increasingly rarely offered there. During visits to Bulgaria and Romania I asked myself whether, given the working conditions for scientists in those countries, we would not be better off encouraging young scientists and researchers to stay instead of to leave. How will we otherwise be able to cooperate in the area of science with these countries in the future?

I have also been concerned to see how the situation for young scientists is developing in Germany. In this country only 14% of full-time science academics have a professorship, the other 86% are regarded as ‘junior staff’ into their 5th decade of life. 83% work in temporary positions, and 53% have fixed-term contracts of less than a year. We are thus not only far removed from European codes of conduct for the employment of researchers, but we also cannot offer our postdocs attractive prospects. We risk losing the best minds, not only in Germany, but in science overall. I wonder how, during the Excellence Initiative, we could have lost sight of what really counts in the production of new knowledge: the new minds of the next generation of scientists.

The good quality of broad research at German universities has been attested to in the context of the Excellence Initiative. It is clear that only good broad performance can generate outstanding peak performance. Warnings not to jeopardize this broader good quality by concentrating funding solely on the very top are increasing. Everyone knows that not every university can be equally top of their field in all areas.



For this reason, intensive efforts have now begun in Germany to implement a horizontal differentiation of our academic landscape. This means more specifically a differentiation of institutions according to profiles, missions, target groups, and functions such as sustainability, diversity, regional-economic significance, and tertiary education and training. While vertical differentiation is accompanied by powerful financial incentives, these are completely lacking in horizontal differentiation. Here politics limits itself to making appeals. But why is a university's concept for the future only worth funding when it includes top-level research?

Horizontal differentiation also raises another issue; that of participation. Higher education reform in Germany has concentrated so far on increasing the autonomy of institutions and the subsequent consequences. This has gone hand in hand with strengthening the management of universities, new management models from the New Public Management toolbox, external boards of experts, and demands for professionalization, efficiency, and specialization. That was the main part of my tasks in the '90s. It must be mentioned in all honesty that no funding was ever made available to professionalize management. I also want to just mention that there was an attitude of "just give us the money and leave us in peace" on the part of some universities. And additionally, demands for transparency and dialogue made by politicians and society were regarded by some as an annoying additional burden.

Horizontal differentiation now sets universities the task of combining efficiency and governance with new forms of member participation. Missions and specific functional and target group-oriented profiles cannot be ordered from the top down. They must be

"Why is a university's concept for the future only worth funding when it includes top-level research?"

lived and aspired to by an organization's members. Why should researchers engage in further developing an institute instead of investing in their individual careers if they believe that their views will be ignored? This question also applies to the complex balance that I've already mentioned, specifically a new balance between effective leadership and participation.

Agreement on shared standards

international cooperation requires international exchange and thus also agreement on shared standards. This includes standards of good scientific practice, ethical standards, standards in dealing with science personnel, standards of equality, rules on handling data, on barrier-free publishing, and access to scientific publications – obviously a whole range of topics of overriding importance. Codes of conduct,

"Horizontal differentiation raises the issue of participation. Missions and target group-oriented profiles cannot be ordered from the top down."

recommendations, declarations on universal norms, and guidelines are certainly not lacking at the global, European, and national levels. Yet when it comes to implementation and monitoring, there are many cultural and national legal differences, various experiences, and examples of best practice.

I am convinced that these issues will become increasingly important the more nations are involved in international research cooperation and the more intensive this cooperation becomes. One topic in this



“Open Access is vitally important in increasing productivity and improving participation in the area of science cooperation.”



context that is particularly close to my heart, because it has not received much attention in politics so far, is the Open Access principle in scientific publishing. I regard Open Access as vital for increasing productivity and improving participation in the area of science cooperation. Here too, we have countless framework resolutions from UNESCO, the OECD, the European Commission and national players, such as the “Berlin Declaration” of the Alliance of German Science Organisations. Additionally, there are various organizations and initiatives such as the EU’s 7th Framework Programme, the Wellcome Trust and RCUK in Great Britain, the NIH in the USA or the Swiss National Science Foundation. There are also Open Access activities in India and China.

At the same time, there are still great differences within the specific disciplines and uncertainty exists among scientists and researchers on the question of whether, as part of project funding, publication fees will be paid for “Gold OA Publishing” or which embargo period applies to which publication in “Green OA” publishing. National copyright laws often work against the Open Access principle. Fears of damage to their own reputation, especially on the part of renowned journals and publishers, play an additional role. I believe that Open Access is indispensable for the widening and deepening of international scientific cooperation. Digitalization offers great new oppor-

“If we in politics and society can dare to be open, I am sure that international cooperation in science and research will greatly benefit.”



tunities for working, but building a digital infrastructure and virtual research environments and further networking them also entails considerable costs. My impression is that the awareness of these challenges is not very strong among politicians. I also wonder whether an international division of labor and coordination in this area might not result in the deployment of scarce funds with more efficiency and a greater effect for science.

Openness and trust as cultural self-image and a precondition for science and research

at this point, I would like to return to the starting point of my remarks: the importance of an open society for science as a precondition for internationalization. This year, together with colleagues from the Committee on Education, Research, and Technology, I had the opportunity not only to visit the memorial for the victims of the 9/11 attacks in New York but I also stood in front of a sea of roses outside Oslo cathedral. These were roses for the victims of a man who, as a self-proclaimed ‘counter-Jihadist’, murdered so many young people on the island of Utøya, ten years after 9/11. He did this with the intention of depriving them of any chance to work as young politicians in order to create a diverse and multicultural society.

The reaction of the Norwegian public to this tragedy of national dimensions has been remarkable. I am sure that we cautious Germans would have, in a similar situation, immediately tackled all relevant security issues and would have focused on questions of blame and joint responsibility of politicians and government agencies. Norwegian Prime Minister Jens Stoltenberg did something different. He said, “We are still shocked, but we will never give up our values. Our response is: more democracy, more openness, and more humanity.” That was courageous. And the amazing thing is that the majority of the Norwegian people thinks he was absolutely right.

If we in politics and society can dare to be open, I am sure that international cooperation in science and research will greatly benefit. Without trust and openness this is hardly conceivable. ■



Lesley Wilson is Secretary General of the European University Association (EUA), Brussels

“There are no one-size-fits-all models”

Principles of governance in a globalised higher education and research landscape – reflections from a system perspective

European level

A decade of change. Major changes have taken place in the last 10 years in both the higher education and research landscapes in Europe, leading to the creation of the European Higher Education and Research Areas. These are Europe’s answers to an increasingly globalised and competitive higher education and research environment. Moreover, the EU’s plans for its budget up to 2020 reflect a belief in the importance and added value that strengthening investment in education and research bring. These are also the two areas where the most significant increases in investment are proposed - the research and innovation allocation would increase from €50bn to €80bn, while the funding for education would go up from €6.95bn to €15.2bn.

Characteristics of the EHEA and ERA. The European Higher Education Area (EHEA) has developed common European frameworks within which national governments in 47 countries have reformed their higher education systems. It has introduced three-cycle degree structures in the context of national

qualifications frameworks self-certified against the European Qualifications Framework (EQF), as well as internal and external quality assurance arrangements following the principles set out in the European Standards and Guidelines for Quality (ESGs) in an attempt to improve the competitiveness of European higher education and promote mobility within Europe. There is agreement for the future on a benchmark of 20% for student mobility and 40% graduate attainment. The European Research Area (ERA) shares the focus on mobility and also concentrates on the improvement of young researchers’ training and career prospects. A European Charter and Code of Conduct for Researchers was published in 2005. Now, building on the work done by universities, there are proposals for a common approach to doctoral education. The Marie Curie programme is being strengthened and, through the establishment of the European Research Council (ERC), support for excellence in basic research has been increased over the last five years. The goal however, is defined as an ‘Innovation Union’, which, while hopefully continuing



“The goal is an ‘Innovation Union’, which is looking to create ‘European added value’ through an European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities and by joint European programming to address the ‘grand challenges’ and overcome national fragmentation.”

present instruments such as the ERC, Marie Curie and cooperation programmes, is also looking to create ‘European added value’ through instruments such as the European Institute of Innovation and Technology (EIT) and its Knowledge and Innovation Communities, by supporting Innovation Partnerships, and by putting more emphasis on joint European programming to address the ‘grand challenges’ and overcome national fragmentation.

The Modernisation Agenda. Underpinning both is the European Commission’s Modernisation Agenda for Universities. The original intention was to encourage member states to help universities realise their true potential by granting more autonomy, increasing accountability, and improving public and private funding for higher education and research. Recently however, the Commission has re-launched it with a stronger focus on elements that it believes will help Europe emerge from the present crisis, more institutional diversification for example, and, as a priority, investment in ‘quality and relevant’ higher education and research to improve employability and boost entrepreneurship and innovation. The intention is to encourage more convergent national policy-making in areas where the

“Increasing institutional diversity is one of the responses to increased societal expectations concerning the mission of universities in society.”

EC has no core competence. The modernisation agenda also accords considerable importance to ongoing efforts to develop a European ranking of universities - U Multirank - which will reflect more elements of the university mission than the present global rankings do. This tool, now increasingly described as a benchmarking tool for institutions, is considered to be crucial in increasing ‘transparency’ and underpinning a further process of institutional differentiation.

National and institutional levels

Global change and the many reforms of the last decade have led to a major debate on the relationship between the state and universities. This has underlined the importance of autonomy and accountability, and has led to governance reforms at national and institutional levels across Europe. Different steering and control mechanisms have emerged at both system and institutional levels, sometimes through government intervention, sometimes directly through developments in institutional governance. As the missions and diversity of universities have expanded, both their role and their contribution to national and regional economic and social development have become more central. A much wider range of stakeholders has also emerged, including employers, industrialists, professionals, students, and alumni. In parallel, growing expectations of accountability within institutions have impacted traditional forms of academic governance, for example through the introduction of university boards and more managerial approaches. Research shows that the overall context for governance across Europe remains very fluid, not least given the different nature and focus of reforms in different national contexts, but also very dynamic and often contested. As an example, see the definition of academic freedom in the October 2011 statement published by the Canadian Association of University Presidents.

Focus on institutional diversity. Universities are still deeply embedded in national settings. However, as societal expectations grow and global competition increases along with the need to address common global “grand challenges”, the rationale for reforms is becoming more uniform. Increasing institutional diversity is one of the responses to increased societal expectations concerning the mission of universities in society. In parallel, universities are being accorded ever greater autonomy, albeit accompanied by greater



accountability requirements. There are growing calls for policies that support increased differentiation, especially in relation to institutional missions and profiles. This is becoming even more important in the present context of shrinking budgets. Increased mission diversity is seen as a way to respond to a growing range of societal expectations and to changes in the way knowledge is created, disseminated and used. So universities are supposed to be able to educate people to be critically-minded citizens, to retrain more and more people from different backgrounds, to produce internationally competitive frontier research as well as applied research relevant to regional and national innovation, not to mention being able to contribute to solving global challenges. But these missions, if not incompatible within a single institution, would at least be better distributed among several. EUA work has shown that there has indeed been a growing diversification of institutional missions and profiles in the last few years, be it in relation to student recruitment and populations, the specificity of research portfolios, staffing or funding modalities.

Discussion of system differentiation is often linked to the promotion of excellence. There is considerable national and institutional debate around the promotion of excellence, and the need for targeting or concentrating resources, in particular in relation to creating critical mass in research. This has already led to significant changes in the structure and organisation of national systems in many European countries, either through voluntary mergers, or through top-down, government-driven groupings of institutions, as in Denmark or Finland; and these are often also linked to funding incentives, as in Germany and France. The attention accorded to global rankings in recent years by the general public, policy makers and universities, and their impact on systems and institutional behaviour also plays an important role here. The main danger is that policy makers in some countries may be

tempted to take decisions for their entire systems on the basis of global rankings, which are essentially about the research function of universities alone.

The ‘world-class university’. This context has also driven much debate on the concept of the ‘world-class university’. Jamil Salmi and Philip Altbach have recently pointed out how tempting it can be for many countries to try to tap into new sources of growth and wealth by establishing elite research universities from scratch. They cite for example, a study on patents,

“The main danger is that policy makers in some countries may be tempted to take decisions for their entire systems on the basis of global rankings, which are essentially about the research function of universities alone.”

which shows that universities are now driving more advances in biotechnology than private companies, and their own work shows that whether in Chile, Hong Kong, India, South Korea or the US, so-called ‘world-class universities’ also serve as hubs for new thinking in the humanities and social sciences. What is not clear is what this means across Europe at system level, given the different size, shape and wealth of different systems.

“An element not to be underestimated is the overall push for more transparency, not least also from mobile students and researchers: investment needs access to comparative data to facilitate choices.”

Competition for institutional visibility. Global competition among universities for research funds also drives vertical differentiation in many systems, often on the basis of criteria and indicators to measure research performance that tend to be size-dependent and refer to rather narrow concepts and definitions of research. Such highly stratified systems,



those of the Netherlands or Switzerland for example, appear to do better in terms of research performance than systems that are less stratified. This raises the question of whether national systems in Europe will further reconsider system structures in the years to come, all the more so now that they are driven by

“Highly stratified systems appear to do better in terms of research performance than systems that are less stratified.”



budget constraints. European governments - in spite of conscious choices made in the past - do not like to see their universities clustered in the middle of the top 500. Another element not to be underestimated is the overall push for more transparency, not least also from mobile students and researchers: investment needs access to comparative data to facilitate choices.

An overemphasis on external diversity? It is worth considering however, whether there may not be an overemphasis on external diversity. Internal diversity, i.e. different dimensions within institutions such as staff, students, disciplines and programmes, functions etc., is also worth consideration, as Sybille

“The study demonstrates the importance of different value systems within institutions, and specifically the different values attributed to different functions by university staff and by other groups.”



Reichert showed in a study commissioned by the EUA some years ago. The study shows that mission mixes and functionally differentiated staff profiles are not necessarily problematic. It has not been empirically proven that internal diversity is necessarily less efficient than external diversity with respect to all

aspects of HE activity. At the same time there is also some evidence that growing cooperation through targeted international networking and consortia building contributes to enhancing internal diversity and is another way of improving performance more generally. The Reichert study also demonstrates both the importance of different value systems within institutions, and specifically the different values attributed to different functions by university staff and by other groups. It also underlines the need for differentiated reward systems that foster different types of research (e.g. the differentiating feature is not the balance between research orientation and teaching orientation as such, but between basic research and teaching: so that applied research is valued and rewarded just as highly as teaching in institutions that focus mainly on teaching).

The drivers of diversification or convergence.

The main drivers of diversification or convergence are, not surprisingly, firstly, regulation and accreditation, in relation to the definition of institutional types, to selection and access mechanisms, and staff career structures and incentives. Of course, funding instruments and incentives for the system as a whole play a major role, as do the specific incentives used to promote different elements of diversification. Thirdly, quality assurance systems play an important role, not only because of the criteria developed, but also because of the related underlying values and principles. Finally, not only the predominant academic values and cultures but also increasingly stakeholder values and stakeholder orientation drive diversification or convergence.

Final remarks and considerations

1. In conclusion, I would like to come back to the beginning and to the (optimal) responsibilities of the different levels in relation to governance in a



globalised HE and research landscape. While universities are still deeply embedded in national and regional settings and regulatory frameworks, the rationale for reforms is wider and uniform across countries. As a result, so is the rationale for common elements of governance in a European framework through the EHEA/ERA as a response to common challenges, as a way of boosting performance, and as a way of furthering our common European project. It could be argued that Europe needs more innovative 'European public goods'. One particularly good example is the establishment of the European Research Council almost five years ago. The ERC provides pan-European support to the most talented researchers using common criteria and is already proving to be an important motor of high level research across Europe. Consideration could be given to establishing more such public research instruments at the European level (e.g. through structured support for doctoral schools). However, funding decisions are taken at national level and in hard times individual governments are very tempted to make their own decisions in a purely national context. European benchmarking, however, remains crucial.

2. There is little evidence to suggest that the dynamics of diversification are either necessarily helped or hindered by the absence or presence of formal boundaries: differentiation takes place even in systems with limited autonomy. Autonomy, on the other hand, only opens up wider choices if these are not restricted by other factors (financial incentives, career structures, values etc.). If we look at autonomy from a university perspective in terms of organisational, academic, financial and staffing autonomy, then different countries have different mixes of policies that reflect their own developments - there are no one-size-fits-all models. There does not seem to be a link between specific governance reforms and improved performance in teaching and research.

3. The trend toward the creation of a small number of truly 'world-class universities' is undeniable, and much has been written on this phenomenon. Such institutions need a high concentration of talented academics and students, with an international profile and significant budgets, as well as strategic leadership and vision. Some global research universities are calling for European funding for top European universities as a way forward. This requires further discussion, also taking account of the overall needs of Europe's populations for high quality and diversified higher education provision as well as the strengthening of the continent's research and innovation capacity.

"The danger is that these strategies may have a significant - and negative - impact on higher education and research systems across Europe, and thus on European development as a whole."

4. Finally, the negative impact of the funding crisis on Europe's higher education and research systems needs to be taken into account and considered in terms of Europe's priorities for investment in the next decade. At present very different strategies are being developed and implemented at the national level and these are naturally reflected in the actions of funding bodies. The danger is that these may have a significant - and negative - impact on higher education and research systems across Europe and thus on European development as a whole, by limiting rather than broadening access to higher education and thus also limiting the pool of talent that then feeds into the research and innovation system more generally. ■



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“The market will always be a factor in the landscape of research”

Principles of governance in a global knowledge society – reflections based on observations of the higher education and research landscape in the United States

“It is perhaps true that the Bologna Process has tended to centralize curricular decision-making to a much greater extent and to move more decision-making to the ministerial level and away from the faculty.”

Let me begin my remarks by stating my own interpretation of the questions posed for this session. The description of the issues for this panel seems to assume that as universities become more global, as researchers become more internationally mobile, and as research funding becomes increasingly internationalized, the governance and methods of funding scientific research have been substantially altered. It suggests that these changes have shifted the locus of power away from faculties and individual departments to governing bodies staffed by external members, with a corresponding threat to the principle of meritocracy in science and academia. My comments on this set of assumptions is informed almost exclusively by my observations of the higher education and research landscape in the United States. If the assumed “shift of power...to governing bodies staffed by external members” is meant in a formal sense, that

is to say that critical decisions about the funding of research are shifting to different or remote formal governing bodies, removing them from the merit review processes that have historically characterized decisions about what and who gets funded, I do not believe this has happened in the United States. I believe that the formal structures for reviewing the merit of basic research, including the peer review by most funding agencies in the United States, remain unchanged.

I am not sufficiently familiar with changes in the landscape of academia in Europe or elsewhere to judge whether the “shift of power” alluded to here has actually taken place, or whether it has had the deleterious effects on faculty and research governance that the question suggests. It is perhaps true, as some of my European colleagues have asserted, that the efforts of the Bologna Process to establish common standards for education and common degree expectations among the states of the European Union have tended to centralize curricular decision-making to a much greater extent than in the past and to move

more decision-making to the ministerial level and away from the faculty. And my lack of familiarity with the European situation as regards research may have prevented me from seeing a similar centralization of authority for research and that the creation of the European Research Council has had the effect of shifting power to make decisions on research funding in ways that I do not know about.

It is the case that the economic crisis of the last several years, after at least two decades of declining support for public universities in the United States, has concentrated some greater degree of power in university administrators, who seek to curtail costs and promote greater efficiency in the use of resources. But I do not believe this phenomenon has altered the principle of meritocracy in support for research or higher education. The scarcity of resources does not generally result in awarding more resources to projects or individual scientists of lesser merit. Indeed, I believe the reverse is largely the case. As the funding available for scientific research has declined, the qualitative bar for research grants has gone up. For example, whereas the National Institutes of Health in the United States, the primary source of research support for the life sciences, awarded grants to roughly 30% of its applicants a decade ago, today it is funding only about 18% of applicants, with that number liable to decline further in the future. The peer review process by which grants are awarded remains unchanged, but competition has increased, leaving many meritorious projects unfunded. Formal decision-making has not shifted to persons external to the research process itself. The same is true of universities: as university resources have been reduced, the competition for a shrinking number of available academic positions has increased the qualitative expectations for faculty appointments.

The influence of the market

This is not to say that U.S. universities or the research they conduct have not been heavily influenced by external forces or that they have not undergone some substantial changes as a result of these external forces. The university research community has been altered, not by changes in formal governance structures, but by the pervasive influence of the market and the neoliberal economic philosophy that undergirds it. And, with the end of the Cold War, the neoliberal paradigm has provided

“The university research community has been altered by the pervasive influence of the market and the neoliberal economic philosophy that undergirds it.”

the economic framework for the process of globalization. Thus, in any discussion of the “Principles of Governance in a Global Knowledge Society,” I would argue that the market has had a far more crucial role in the “governance” and attitudes toward funding higher education than any institutional structures or formal governing bodies. The formal governing structures and methods of funding research have remained relatively unchanged; the intrusion of the market as the governing principle has substantially changed universities and frequently affected the direction of research.

Central to neoliberal ideology has been the belief that publicly funded entities are inherently inefficient and that public goods should be privatized whenever possible and thus subjected to the rigors of the market. One aspect of this agenda has been the thirty-year pattern of reducing public funding for public universities in the United States, much accelerated and exacerbated by the financial collapse that began in 2008. This reduced investment in publicly funded universities and research coincided with two other phenomena: the high technology revolution and the reduction of industrial research and development, including the disappearance of stellar industrial research laboratories like Bell Laboratories, General Electric, and RCA, among others.

“Industry has become more dependent on universities for the basic research that lies behind much of new product development.”

American industry became more dependent on the research coming out of universities at the moment that universities were forced to find new sources of revenue. These two phenomena, occurring at roughly the same time, have caused, on the one hand, universities to reach out to industry in ways they had not previously done, for partnerships that will help



“Patent income has caused university researchers to pay greater attention to how their discoveries might be commercialized.”



underwrite the cost of university research, especially for facilities and instrumentation. On the other hand, industry has become more dependent on universities for the basic research that lies behind much of new product development. This alliance has yielded many positive results, but it has also brought with it serious challenges to the traditional value system governing universities and their research.

Partnerships between universities and industries

It is perhaps no coincidence therefore, that as the interdependence between industry and universities in the United States came to be recognized, the Bayh-Dole Act of 1980 encouraged this relationship. The Bayh-Dole Act gave universities the right to patent discoveries made by their scientists whose research have been funded by grants from the federal government and allows universities to collect the royalties from the licensing of those patents. The passage of the Bayh-Dole Act has spawned an enormous increase in the patent activity of American universities. Prior to Bayh-Dole, fewer than 250 patents were awarded to universities annually; by 2003, that number had grown to more than 4,000, with over 5,000 companies launched by faculty members at universities.

“The increasing number of examples of partnerships between research universities and private enterprises has caused many to criticize the “privatization” of American universities.”

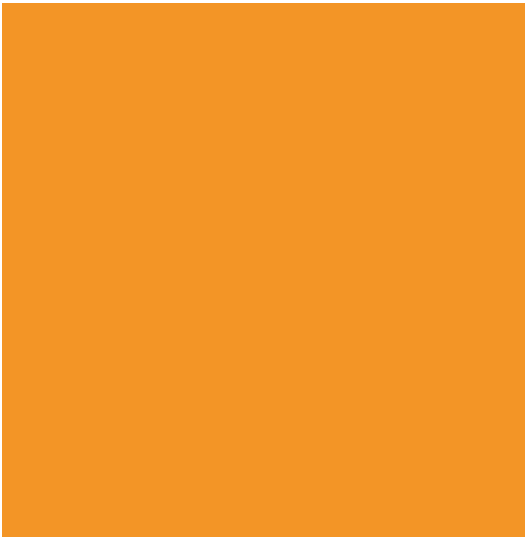


While patent income does not account for a significant portion of university revenues, except in a very few cases where a blockbuster drug has yielded substantial royalties, I think it is fair to say that it has caused university researchers, who in the past did not

give a great deal of thought to the practical applications of their research, to give greater attention to how their discoveries might be commercialized. This is especially the case in the life sciences, where the scientific discoveries in cellular and molecular biology have yielded the possibility of a whole new category of medical treatments.

The increased industrial reliance on university-based research has also produced a wide variety of new partnerships between universities and industries. Some take the form of research parks adjacent to universities, which provide facilities for the early-stage development of companies that are spun out of university research. Other partnerships are with established companies, such as the much examined and criticized agreement between the University of California, Berkeley, and Novartis when I was chancellor there, or the subsequent \$500 million investment by British Petroleum in energy research at the University of California, Berkeley, the Lawrence Berkeley National Laboratory, and the University of Illinois at Urbana-Champaign.

Because of the emphasis on universities as agents of economic development, an argument universities have assiduously employed to gain more public support, there is naturally also an emphasis on the marketable applications of scientific research and demands for more investment in applied research. Thus, for example, the National Institutes of Health has launched a major push to fund “translational research,” providing more grants to move basic research further along the continuum toward practical applications. And in 1982 the federal government created the Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) programs, which set aside a small percentage of the budgets of each federal agency to fund research and foster small businesses with innovative ideas that have market potential.



The steady reduction of public support for public universities in the United States and the increasing number of examples of partnerships between research universities and private enterprises has caused many to criticize the “privatization” of American universities. Indeed, a significant number of books have appeared in the last few years lamenting and criticizing this “privatization” of universities, including a book by former Harvard President Derek Bok entitled “Universities in the Marketplace: The Commercialization of Higher Education”.¹

Whether or not one considers “privatization” the proper term for this process, and whether or not one considers universities the willing agents or unwilling victims of this process, the fact remains that a significant transformation of universities has been a feature of the triumph of the market-based society. The market is the governing principle of modern, global society; the market, in all of its manifestations, is a governing principle of universities as well.

The transformation

For example, the penetration of the market into the university has rather dramatically altered the disciplinary balance within universities. The humanities and most social sciences (with the possible exception of economics) produce little of market value; they can therefore easily be relegated to a secondary status, if they are maintained at all. Indeed, the current governor of Florida has proposed that Florida’s public universities dispense entirely with the teaching of anthropology, political science and other disciplines he deems of little value.

Changing values are reflected in changing rhetoric. In any market, there are providers and consumers. In the higher education market, therefore, the students are now seen as consumers. Since the notion of the

public benefit of higher education has been largely displaced by the belief that the primary beneficiaries of higher education are the private individuals who are receiving the education, it is they who are there-

“A significant transformation of universities has been a feature of the triumph of the market-based society.”

fore now expected to pay a substantial portion of the cost of education. As a consequence, the public as a whole and the students themselves are inclined to view students as consumers. Governor Perry of Texas has supported proposals made by a right-wing think tank in Texas that would apply market principles to the evaluation of faculty. Faculty evaluations would be based upon student evaluations, with salary bonuses provided to those who rank highly. In essence,

“Faculty evaluations would depend on a cost-benefit analysis of how much revenue each faculty member brings in in research dollars and the number of students they teach, as against what they are paid.”

consumer satisfaction surveys would replace other forms of evaluation. In addition, faculty evaluations would depend on a cost-benefit analysis of how much revenue each faculty member brings to the institution in research dollars and the tuition they provide and the number of students they teach, as against what they are paid. In a recent such list of the faculty at Tex-

“The engagement of universities and faculty in close relationships with industry can weaken the essential values of academia.”

as A&M University, the names of those adding to the bottom line by bringing in more than they cost were listed in black; those subtracting from it in red.





Conflicts of interest

I do not expect that the proposals of the governors of Florida or Texas will be completely realized anytime soon, but they do demonstrate how deeply the belief in the efficacy of the market has penetrated higher education.

The engagement of universities and faculty in close relationships with industry can weaken, and sometimes has weakened, the essential values of academia. Medical faculty have been lured into conflicts of interest by their connections with drug companies, from which they have received substantial remuneration, on occasion millions of dollars. These conflicts of interest undermine the principle of scientific objectivity and call into question the very integrity of research. Researchers whose work has potential commercial value refuse to disclose it lest they lose the patent rights. Researchers whose work has been funded by private industry are routinely required to delay publication for some period of time, at least six months, while the company explores the commercial value of a discovery. And the universities themselves can have their judgment clouded and their principles compromised when a commercial opportunity is at stake or a potential conflict of interest ignored.

“We can sustain a larger vision of the university, a vision that champions curiosity-driven research aimed at unlocking the secrets of nature and not merely the coffers of industry.”

As you can tell from my remarks, I am troubled by the manner in which market values threaten to displace many traditional academic values. I believe some of these changes have been necessary and have enabled universities to serve their societies more completely, but they also present many challenges to universities. And in the spirit of full disclosure, I confess that as a university president and chancellor I was

often involved in practices that engaged the university more fully with industry and the market. But what should we do going forward? This is the essence of the second question posed to the panel: “What methods of funding and principles of governance help to attract those scientists who are best suited to the specific mission of an institution, and what does it imply with regard to responsibility for scientific endeavors as well as for the individual scientist and the education of talent?”

Obviously, if the primary specific mission of the university is to contribute to the economic development of its society, it will concentrate its efforts in those areas that make those contributions and it will attract scientists and teachers who are drawn to that vision of the university and the opportunities it will provide them. But if, as I hope, we can sustain a larger vision of the university, one that considers students as citizens and not merely as consumers, a vision that champions curiosity-driven research aimed at unlocking the secrets of nature and not merely the coffers of industry, then I think we can secure the balance in the principles that govern our work.

Most faculty are still attracted to academic careers by the adventure of discovery, the love of learning. This was the premise of the federal government’s investment in science from the outset, as envisaged by Vannevar Bush, whose report to President Truman, “Science, The Endless Frontier”, insisted that fundamental, curiosity-driven research was the basis for discoveries that would, in the long run, contribute to the economic well-being of the nation. But, as Derek Bok has warned, this faith in curiosity-driven research may not always be the case if universities come to be governed largely by the values of the market. He writes: “The world of academic science is still dominated by senior figures who grew up and acquired their values in a much less commercial environment.

“The market will always be a factor in the university and research landscape. But it should not be the dominant governing factor.”

No one knows what will happen when the mantle of authority passes to a generation of researchers who have spent their entire professional lives surrounded by tempting opportunities to start new firms or help private companies develop lucrative products. There is evidence that entrepreneurial activity is most likely to grow in departments that already have a cluster of members engaged in these pursuits. Such findings suggest that if new values begin to take hold and alter the priorities of university scientists, the trend will be increasingly difficult to stop.²

Recommendations

To sustain and reinforce the value of basic research that will attract scientists and educate students in the voyage of discovery, I believe we need four things. First, we need government to provide a steady, predictable funding stream for research that is not driven by commercial interests. The feast and famine cycles of funding often interfere with work that requires sustained attention and time to achieve. Second, we need especially to support the work of young scientists at the outset of their careers so that their primary objective is scientific discovery unbiased by commercial interests. The next generation of scientists and scholars must be encouraged and supported. They are our future. Third, we must recall that the primary purpose of education in democratic societies is to develop discerning citizens, and that to do so requires a balance in our universities that sustains not only the sciences but also the humanities and social sciences. And fourth, at least in the United States, where leading public universities are subject to the vicissitudes of state funding and political whim, we need to develop a national strategy for securing the foundation of research and teaching, the research universities themselves. These recommendations do not discount the important role that universities play in the global economy. I recognize

that the market will always be a factor in the landscape of universities and research. But it should not be the dominant governing factor. ■

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- 2 Bok, *Universities in the Marketplace*, 204-205.

The Globalization of Knowledge and the Principles of Governance in Higher Education and Research

Invited by the Alexander von Humboldt Foundation's International Advisory Board, some sixty high-ranking representatives from science and science policy, research funding and administration, as well as distinguished international experts, met on 13 and 14 November 2011 at the Academy of Arts in Berlin to share their views on the effects of globalization on science and research structures. Under the title "The Globalization of Knowledge and the Principles of Governance in Higher Education and Research", the 5th Forum on the Internationalization of Sciences and Humanities raised the question of the structures

necessary for doing research in an environment marked by increasing international competition, tighter budgets and rising institutional differentiation. Providing a platform for debate on core developments that impact the future of science and research, the Forum brought together eminent international experts from India, Nigeria, the United States, Europe, and Germany. As special guest of honor, the Forum welcomed the spokeswoman for science and research policy of the parliamentary group Alliance 90/The Greens in the German Bundestag, Krista Sager.







Remi Sonaiya retired as Professor of French Language and Linguistics from Obafemi Awolowo University, Ile-Ife Nigeria, in 2010. Ambassador Scientist for the Alexander von Humboldt Foundation since 2008, she is also on the international faculty of the Haggai Institute and is National Public Relations Officer of Nigeria's KOWA Party.

“Developing countries are becoming the testing ground for Western research agendas”

Principles of governance in a global knowledge society:
What is the scientist's social responsibility?

In presenting my comments on the issue before us for discussion, I would like to start by making reference to a “globalization” joke which was making the rounds a few years ago. It stated that a worldwide opinion survey was conducted by the United Nations in which the only question asked was, “Would you please give your

“‘Globalization’ is multifaceted, and although we are all in whatever is going on together, different regions of the world are affected at times in fundamentally different ways.”

honest opinion about solutions to the food shortage in the rest of the world?” The survey was said to have been a huge failure. Why? Well, in Africa, they didn't know what “food” meant; in Eastern Europe, they didn't know what “honest” meant; in Western Europe, they didn't know what “shortage” meant; in China,

they didn't know what “opinion” meant; in the Middle East, they didn't know what “solution” meant; in South America, they didn't know what “please” meant; and in the USA they didn't know what “the rest of the world” meant (www.jokesblog.wordpress.com).

I am not sure this is a politically correct joke to share in this assembly, but please bear with me. Of course, it is a joke precisely because of its patent exaggeration, but within it is encapsulated more than a grain of truth which makes it hit right home and sting. I am from that part of the world which does not even know what the most basic element of the statement meant (that is, “food”), and so I cannot help feeling somewhat out of place here as a sub-Saharan African – the issues with which we are preoccupied here seem so far from the realities we are confronted with back home. Therefore, my joke reminds us that

“globalization” is multifaceted, and that although we are all in whatever is going on together, different regions of the world are affected at times in fundamentally different ways.

In what follows, I wish to examine two main issues: the notion of competition as applied to the domain of education, and the sponsorship of individual talent. Both appear to promote individual fulfilment and accomplishment over and above social responsibility.

Fierce global competition

The background to the discussions being held here today is that there is currently “fierce competition” for the most talented scientists and researchers who are needed for the “huge research markets” emerging around the world. The questions to ask are the following: What really is this fierce global competition, which is forcing higher education and research systems to change in such a fundamental manner, about? What is the competition for the world’s most accomplished and creative scientific talents for? That is, could we be clear on what the objectives and benefits to humankind are of the fierce competition that academic and research institutions are engaged in?

The market approach engendered by capitalism is already showing its inherent deficiencies. If making the greatest profit was the absolute end in view, then it made sense for Western corporations to ship out manufacturing jobs to Asia where workers earned far less and the companies could substantially increase their revenue. In a context where individual prosperity, not the common good, was the ultimate goal, it made economic sense for people to run to tax havens and evade paying their fair share of taxes that would be used to provide services for the benefit of everyone. Of course the unprecedented levels of unemployment being currently recorded in the West and the ensuing protests and demands for greater

“What is the competition for the world’s most accomplished and creative scientific talents for?”

social justice for all (on the streets of Athens, London, Madrid, New York, and elsewhere) are direct consequences of this policy of cutting costs – at all costs – and increasing profit first and foremost. One does not need a philosopher to work out the logic of it.

What this globalized politico-economic system does, and it would appear to have worked well for a while, depending, of course, on which side of the social divide one is on, is that it leads, ultimately, to the creation of “winners” and “losers” – usually, a small minority of winners and a huge majority of losers. The pertinent question for us now is: Is that kind of approach suitable for the education sector as well, and is it a good enough or worthy implicit goal to pursue? The increasing corporatization of education in the West, involving fierce global competition for the world’s best minds, will doubtless lead to the creation of winners and losers. Talented scientists and researchers, say, from developing countries, who are ready (or even eager) to orient their work towards complying with the defined interests of large Western

“The globalized politico-economic system usually creates a small minority of winners and a huge majority of losers. Is that suitable for the education sector as well, and is it a good enough or worthy implicit goal to pursue?”

research corporations, may find themselves richly rewarded with substantial grants and even prestigious awards. They become winners – but at what or whose expense? Approaches that recognize and reward



“There are concerns now about developing countries becoming the testing ground for Western research agendas.”

individuals in the absence of a social context should be regarded as suspect, and the academic pursuits of scientists and researchers, particularly in developing countries, ought not to be cordoned off from the “real world” in which most of their compatriots live.

The testing ground for research

There are concerns now about developing countries becoming the testing ground for Western research agendas. For example, a recent newspaper publication discussed the danger of Nigerians “being used as guinea pigs for stem cell research” because, according to the author, “foreign interests... will use Nigerian universities as proxy centers to carry out unethical research on human subjects in embryonic stem cell research that is not permissible in Western countries”.¹ The claim was that a Nigerian university had already conducted the first stem cell transplantation in the country, on an indigent patient who had suf-

“The Alexander von Humboldt Foundation has cultivated individual talented scientists and researchers and afforded them opportunities that have proven to be crucial for their personal professional accomplishment.”

fered a stroke, and that there was a strong lobby from very powerful foreign interests to give legal backing to such “research cooperation” in our National Health Bill. (I shall not mention here the names of some of the individuals who were said to have been lobbying the Nigerian government on the issue.)

Sponsorship of individual scientists creates individual winners

The second point I wish to evoke may concern the Alexander von Humboldt Foundation more directly, and this has to do with sponsorship of individual scientists. The Foundation’s policy in this regard is very clear: “We support people, not projects. After all, even in times of increasing teamwork, it is the individual’s ability and dedication that are decisive for academic excellence.”²

Of course, the argument advanced for that policy would be that cultivating the outstanding individual is a good strategy, because, hopefully, that person’s ability will elevate his or her immediate peers and, eventually, given enough elevated peers who, in turn, elevate others, the entire community will be elevated. Thus, the Alexander von Humboldt Foundation has cultivated individual talented scientists and researchers and afforded them opportunities that have proven to be crucial for their personal professional accomplishment. One could however ask, especially with respect to scientists from countries in sub-Saharan Africa, whether they are succeeding in elevating their environment, or have we simply created a handful of “winners” again, belonging to a club which sets them apart from their compatriots?

In an article entitled “Taking on Germany”³, I testified to what obtaining the Humboldt fellowship means for most African fellows. Permit me to quote from it: “Obtaining the Humboldt fellowship is seen by most fellows as a boost to their professional advancement, especially for those of us from third world countries. The opportunities afforded us during that year serve to propel us more rapidly in our careers: having access to very good libraries and laboratories, and being hosted by professors, many of whom are among the best in their areas of specialization, as well as the opportunity to participate in the academic life of the host institutes and to attend conferences in Germany and other European countries. By the end of our stay, we have managed to publish several scientific articles in well-known journals, and some even have book projects well under way.”

The snare however, for those of us from my part of the world (where we do not know what “food” means!), is that we could come to view our fellowship primarily as an escape route into a different world, not least economically. The Humboldt Euros translate into pretty good money back home and the temptation to seek to make as much of it as possible is a real one, with considerations about integrity being sometimes put aside.

The reason I bring up this issue of supporting individuals is partly because, in my personal experience, although the objective of promoting academic excellence may be said to have been achieved, I have not found merely getting to the top of the academic



ladder and even helping to elevate those in my immediate surrounding completely fulfilling. The larger environment in which I am required to operate continues to wallow in underdevelopment – in all its dehumanizing ramifications (due primarily to the ineptitude and corruption of our leaders) – so my personal achievement is at best a bitter-sweet reality. Consequently, this academically successful scientist and researcher has finally chosen to leave the confines of the university and seek greater relevance in the larger society.

Africa is waiting for its own Enlightenment

Africa is still waiting for its own Enlightenment. Europe, clearly, has the luxury of having already won the historical battle against systemized knowledge, because even those who would qualify there as “ignorant”, for whatever reason largely accept the authority and basic tenets of science and take certain forms of scientific advancement for granted. Across (sub-Saharan) Africa on the contrary, ignorance continues to hold sway, manifesting itself in a host of diseases and degrading living conditions, fuelled by several

“The larger environment in which I am required to operate continues to wallow in underdevelopment – in all its dehumanizing ramifications – so my personal achievement is at best a bitter-sweet reality.”

superstitious and traditional beliefs. In order to start to combat the ills plaguing the continent, Africa will need all the help it can get – and it will probably have to be more than merely supporting talented individuals. While the current economic stagnation in much of the West is forcing businesses to court developing countries in the search for new markets, could the scientific community also stand with these poorer populations and genuinely seek to assist in lifting a non-negligible proportion of humanity out of their sorry state?

“Let the primary concern of the scientific community be making knowledge truly globalized, accessible to every citizen of the world.”



The mechanisms for such an intervention would have to be worked out carefully of course, but the idea is that supporting islands of individual excellence amidst a sea of squalor does not totally satisfy. For example, and this evokes the “science diplomacy” discussed at last year’s Forum by the American Assistant Secretary of State Kerri-Ann Jones, could some form of scientific lobby be set up to ensure that bilateral talks among nations do not focus solely on economic issues, but actually place on the front burner considerations that will enhance human dignity? Specifically, Western leaders could be asked to seek ways of exerting more pressure on African leaders to deliver better standards of living to their people – and this will be done primarily through education. Recently, the Nigerian Head of State was chiding us citizens because, according to him, while we were always critical of his performance at home, praises were being lavished on him by the West.

“If the African Humboldt fellowship recipient is returned to an environment where she feels frustrated and prevented from having any real impact, one would have to ask whether enough has been done by the scientific community.”



Of course it is not the Humboldt’s or any other Western organization’s responsibility to elevate Africa. That is for Africans themselves to do. But if the African Humboldt fellowship recipient is returned to an environment where she feels frustrated and prevented from having any real impact, one would have to

ask whether enough has been done by the scientific community and, ultimately, whether the best use will have been made of the taxpayers’ money used in funding her research. The fact is, we are all connected, as recent developments across the globe are making clearer by the day, and it might actually turn out to be enlightened self-interest if the West cared more about elevating living conditions in other parts of the world.

I conclude by reading a paragraph from a book I published recently, titled “A Trust to Earn: Reflections on Life and Leadership in Nigeria”⁴: “The matter of education is one that needs very urgent attention in our nation today, for it is the crucial point upon which all our hopes and aspirations for a better future hang. We need educated leaders and educated followers as well. We need a nation where at least a significant proportion of the citizenry, if not the majority, will have the ability to think clearly and objectively about issues and make appropriate judgments. Some people say that reason is not African. We have to prove them wrong, and it is only as we take education seriously that we stand a chance of doing so.” Let the primary concern of the scientific community be making knowledge truly globalized, accessible to every citizen of the world.

Finally, I wish to acknowledge my son, Mr. Oluseyi Sonaiya’s input into the writing of this paper. Of course, all the opinions expressed that may have been found to be objectionable are totally his responsibility! ■

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“Science and scholarship are affected by the consequences of globalization”

Principles of governance and the future of systems, institutions, and individual researchers in a globalized higher education landscape

Whoever in this day and age allows the word “globalization” to cross his or her lips must be either shallow and foolhardy, or precise and referring to findings won through evidence-based methods. Yet everyone agrees that something like “globalization” exists. But what is it and how does it differ from “internationalization”, “supranationalization” and “transnationalization”?

Internationalization processes are characterized by the participation of at least two nation states. Supranationalization processes take a particular form whereby nation states relinquish some of their powers of jurisdiction to a supranational organization, such as the World Trade Organization in the case of the General Agreement on Trade in Services (GATS) or in the case of the General Agreement on Tariffs and Trade (GATT). Just as does the normative call for a transnationalization – that is, something leading more or less to a type of world orientation which transcends nations – both these forms denote a process belonging to the sphere of the forming of organizations. In the case of transnationalization, there is the additional aspect of a certain “spirit” of transnationality.

Globalization as a social-scientifically measurable process

If we speak in social-scientific rather than journalistic terms, globalization has nothing at all to do with this. Globalization is a social-scientifically measurable process of macrostructural developments consisting of four elements:

- Firstly, goods, services and the workforce are exchanged more easily and more cost-effectively across national borders. The extent of the denationalization of financial, product and employment markets is measurable.
- Secondly, globalization denotes stronger competition – similarly measurable – between locations as a by-product of deregulation, privatization and liberalization.
- Thirdly, the denationalization of information and communication technologies and processes is a part of globalization. The Internet is the most obvious example of this.



“Countries in Southern and Eastern Europe show index figures that do not imply such a high level of acceleration and uncertainty.”



- And fourthly, the term “globalization” implies the growing instability and vulnerability of local markets resulting from events taking place in other locations in the world.

These four elements of the globalization process lead to rapid changes in the so-called knowledge and service society as well as to an acceleration of product cycles. The entire education system is now dependent upon this because, as a service sector, it has docked itself onto the economy. In this respect the education system, and as a consequence the economy, have also been captured by the phenomena of the market: growing rapidity of innovation as well as intensification and acceleration of market processes and, in connection with this, increasing vulnerability and uncertainty with respect to future developments. These phenomena of acceleration, vulnerability and uncertainty are reflected in the market-dependency of research profiles and research funding as well as in processes taking place in the area of education and training such as the Bologna Process, which has been explicitly tied to the requirements of the workforce.

“The phenomena of the globalization process are in the first instance nationally independent indicators.”



These globalization processes, measured for example in the KOF Index produced at the ETH Zürich, have consequences at an individual level. On the one hand, they increase the opportunities open to assertive and well-educated individuals. On the other hand, all the uncertainties connected with the globalization process are channeled into specific social groups: youths, young adults and people with low levels of education. As those affected recognize this process, pressure mounts on politics to ensure that most of society receives not a low level, but rather a high level of education so that social differences are not eradicated but are instead simply shifted onto science and scholarship in what is known as the “elevator effect”. This is plainly visible in the growing gap between public

and private universities. Whilst the number of those attending the latter is currently only in the six-figure area, the tuition fees demanded by these institutions mean that students there tend to come from the well-educated social classes.

The phenomena of the globalization process are in the first instance nationally independent indicators. However, in our study *Risks and Opportunities for Education in the Globalization Process*¹, these phenomena demonstrate highly differentiated effects in individual countries. Globalization affects European countries and the USA most markedly, which means that in these countries the level of acceleration and uncertainty is highest. Within these groups of countries – besides the USA and Great Britain – it is the Scandinavian countries, but also Germany, France and the Netherlands, that are particularly affected. Countries in Southern and Eastern Europe show index figures that do not imply such a high level of acceleration and uncertainty.

Thus, the first finding we can record is this: science and scholarship, which no longer make up a social sub-system connected only loosely to the economy, are affected by the consequences of globalization – acceleration, uncertainty and social differentiation – in a similar fashion. Science and scholarship, their institutions and participants – that is researchers and students – must therefore find ways of dealing with these objectively measurable globalization processes which, as I mentioned earlier, do not in the first instance have anything to do with internationalization, supranationalization and transnationalization. Imperatives for steering science and scholarship should therefore deal with the three implications of the globalization process: acceleration, uncertainty and social inequality. If no means of countering these are available, then the sub-system is condemned to failure and collapse in the long run. This is the inevitable result of the dynamics of social systems. Should it prove impossible to find counteracting mechanisms, the only viable solution would be to uncouple science and scholarship from



“Science and scholarship are affected by the consequences of globalization – acceleration, uncertainty and social differentiation – in a similar fashion.”

the market quickly and systematically. For once again, all three of these phenomena – acceleration, uncertainty and inequality – are not inherently stable, but are rather fundamentally designed to grow. All three of these dynamics are characterized by so-called “tipping points” which, once reached, do not permit further acceleration, meaning that ongoing uncertainty would merge completely into contingency and social inequality must end in mass protestation.

In this respect we need to ask whether it is an occasion for celebration when, as the recommendations made by the German Council of Science and Humanities on German scientific and scholarly policy in European research noted, the proportion of academic publications composed jointly by authors from several countries has soared by twenty-two per cent over the last twenty years.² Or when the number of patents registered by non-national inventors has doubled within the last twenty years. Or when international citation figures, for example in German or European publications, increase concurrently with the growth in the absolute number of publications (acceleration!) et cetera. The German Council of Science and Humanities has also had the wisdom not to celebrate these developments, but has instead soberly declared that “(...) the economy and politics [have been turned into]... strong external drivers of internationalization (...)”³ in the area of science and scholarship, and that research has most recently “directed its attention more strongly towards solving problems and social challenges.”⁴

In order to avoid any misunderstandings: Of course science and scholarship have contributed greatly to the so-called innovative ability of the economy and, although difficult to measure, possibly also served its growth. Conversely, science and scholarship have also contributed to the crisis phenomena, namely to acceleration, uncertainty and inequality – to the same degree that they may eventually become their own victims. That does not mean that a connection between science and scholarship, on the one hand, and the economy, on the other, ought to be condemned.

Rather, the task at hand must be to highlight the unintentional implications and to search for counter-strategies.

Europe resolutely pursued this path very early on – effectively since the Euratom Treaty of 1957. The research framework programs, which were hardly observed during the first decade, comprised the second step until the reform Treaty of Lisbon and its aim to become the “most competitive and dynamic knowledge-based economic area in the world.”⁵ Accordingly, the German Council of Science and Humanities also noted soberly that “the Europeanization of science and scholarship policy thus orients itself, now as then, towards European economic policy, in whose service it has long stood and still stands today.”⁶



“Of course science and scholarship have contributed greatly to the innovative ability of the economy and, although difficult to measure, possibly also served to increase its growth.”

This development has been pursued consistently in Europe over the last ten to fifteen years. It stands in blatant contradiction to the continental tradition of the European, in particular the German concept of a university. The continental concept – which culminated in the establishment of the Berlin University in 1810 – assumed that in the mode of truth-seeking, science and scholarship were instruments for the general education of human beings. The basic idea presupposed that achieving a general qualification in academic pursuits would qualify an individual on both a personal and a vocational level. Graduates were supposed to obtain a broad qualification, on the basis of which they would then pursue a specialized qualification in their chosen occupation. At the close of the nineteenth century this idea was already at its limits. With the emergence of large-scale industries, the need for highly qualified clientele grew and was satisfied by the technical universities. The rest of this history – right up to the present-day phenomenon of universities specializing in only one or a few



“In the Asian region – with the express exception of China – concepts of science, scholarship and education that do not pursue an exclusively economic application predominate.”



disciplines – need not be repeated here. The establishment of specialist universities was the logical answer to the emergence of new knowledge needs. Yet nineteenth-century politics, science and scholarship did not even want to fulfill these needs or make them the basis for the overall development of science and scholarship in the way that we nowadays see in the Bologna process as well as in specific forms of major research, the evaluation and ranking of research, and publication and citation results. The question that this raises is whether European, whether German higher education, whether German science and scholarship shuts down that part of knowledge production that is not oriented directly towards application or if not, where this aspect of knowledge production is to have its place.

Even if a number of astute analyses from the humanities – summed up most recently by Udo Marquardt’s words “the future needs a past” – have repeatedly shown that this conceptual opposition is false, it is by no means possible to guarantee that those areas of science and scholarship unable to plausibly demonstrate a productive causal connection to innovation and growth will endure.

A look at Asia

Is this a world-wide phenomenon that Europe cannot evade? (For this is a frequently deployed argument.) Let us first look at Asia, a region whose growth has often served as an argument for pursuing this particular logic. Official state documents from the Asian and neighboring Pacific nations are not conclusive: even in the nineties, policy focused largely on fighting poverty and other socially oriented goals, for example in the Sixth Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia and the Pacific in Kuala Lumpur.⁷ The Brisbane Communiqué, issued by the ministers attending the Asia-Pacific Education Ministers’ Meeting in 2006, dealt primarily with issues such as quality assurance, problems with the accreditation of qualifications,



and quality standards than with establishing a connection to economic issues.⁸ A similar focus can be observed for the Asia-Pacific Quality Network’s paper on arrangements for quality assurance from February 2008.⁹ Whilst papers such as the Australian Government’s Powering Ideas (an Innovation Agenda for the Twenty-First Century¹⁰) exist in the Asian region – with the express exception of China – concepts of science, scholarship and education that do not pursue an exclusively economic application predominate. This is hardly surprising, given that Asian cultures are still strongly influenced by Confucianism. In many Asian countries the concept of science and scholarship draws on a concept coined long ago by Confucius: “A scholar works on the basics. When the foundations are set, the way will naturally appear.”

This concept does emphatically not hold for China, which, as a result of its recent significantly anti- or a-religious history, is not bound to such historical traditions. China’s expansion as well as EU policy were the driving forces behind the American Council on Education (ACE), which has just recently commissioned a study entitled “Strength Through Global Leadership and Engagement”.¹¹ This paper was originally concerned with the question of whether this idea would work – or, as I would put it, “how to save the US advantage in global higher education” – and continues to view “American higher education as a global leader.”¹² It analyzes the sinking proportion of the US population with a university education in comparison to Asian countries, the decline of journal articles in all fields between 1981 and 2009 in comparison to the Asia-Pacific region and the European Union and, finally, the marked decrease in the world-wide market share of international students, which sank from 22.9 per cent to 18 per cent in just nine years.



“We have to begin to consider how to ensure that the genuine essence of the university does not become a victim of the globalization process.”

For the self-esteem of the US-American higher education system, which sees itself as a “global leader,” these developments are alarming; they match the four crisis phenomena relating to American higher education identified by Hans Weiler.¹³ Weiler comes to the conclusion that American higher education is characterized by a financial crisis, that is by a “crisis of competitiveness,” the perception of which is completely inflated when one considers that the entire German Excellence Initiative received fewer funds than the annual budget of a single major American university such as Stanford. Weiler also identifies a political crisis, which he sees particularly in the rampant anti-intellectualism in contemporary American society, closely related to the first and most important crisis, the “crisis of purpose.” It is within this context that Weiler quotes Drew Gilpin Faust with the following sentences: “The economic downturn has had what is perhaps an even more worrisome impact. It has reinforced America’s deep-seated notion that a college degree serves largely instrumental purposes... But even as we as a nation have embraced education as critical to economic growth and opportunity, we should remember that colleges and universities are about a great deal more than measurable utility. Unlike perhaps any other institutions in the world, they embrace the long view and nurture the kind of critical perspectives that look far beyond the present.”¹⁴

Principles of a world university

Do we want to share the opinion that in other parts of the world the meaning of the university “as critical to economic growth and opportunity” may be preserved? Is this idea applicable to Europe? Is it applicable to Germany? I am not altogether certain that I can answer this question with a “yes.”

Yet if intellectualism is no longer certain, then – assuming that something of the genuine essence of the university is still important to us – we have to begin to consider how to ensure that this essence does not become a victim of the globalization process I have described above, that is of acceleration, uncertainty and social inequality. In this context a successful university is not one that boasts the most innovative discoveries that lend themselves to application. Rather, it is one that is able to search in peace for valid knowledge and affords social equality to those seeking access to and those already in higher education. This is not an international task, nor is it a supranational one. Rather it is a transnational task that aims to develop a medium-term world higher education system characterized at the very least by a series of minimum requirements. These minimum requirements are arranged according to certain principles. Such principles, derived from minimum requirements of the world university, might only be defined negatively, for example:

- A world university may not commit or endorse any actions leading to irreversible consequences.
- A world university may not commit or endorse any actions that encourage the further acceleration of time.
- A world university may not commit or endorse any actions that further expedite horizontal social stratification.
- A world university may not commit or endorse any actions that close off opportunities for new developments in the future. And so on.



What sustainability means for a university

It does not get more general than that. Yet it is possible to be more concrete. Just to explain this using sustainability as an example. Sustainability for a university has at least four dimensions:

- The dimension relating to objects of research: Dealing with solutions to problems in the area of sustainability.
- The dimension relating to critical reflection upon research and teaching: The development and use of sustainable research methods, whether in relation to the destruction of material or to side-effects that prove irreversible.
- The sustainability of academic teaching: Forming individuals as a matter of imparting an all-round “Bildung” rather than encouraging them to store knowledge or “data” considered important by society.
- The institutional dimension: For example, sustainability as the development of decision-making methods so that decisions may take into consideration the challenges of the future.

It is precisely this last point that raises the question of participation within the university again, which I have discussed elsewhere.¹⁵ But that is – and Fontane is often quoted here – a wide field, and the Elbe River is deep. ■

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5 *Ibid.*, p. 29.

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14 Drew Gilpin Faust, *The Universities’ Crisis of Purpose*, (New York Times, 6 September 2009).

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Multifaceted mission

“Today, the mission of the public research university has become multifaceted as it addresses the needs of a more global and less isolated society. Universities are driven to solve critical social problems as part of their mission to help the public improve quality of life. In focusing on solving core problems such as healthcare, poverty, energy, sustainability, and climate change, universities drive regional economic development and prosperity. Universities are uniquely capable of innovating and educating as they formulate new questions, seek solutions, create new knowledge and translate it into products and services, and educate tomorrow’s leaders.

Up until 30 years ago, federally sponsored research was considered a public good. Government-funded research and the universities’ ability to own the intellectual property they created laid the foundation for astonishing economic growth in the US. In the past 20 years however, public research universities have found it difficult to sustain their research facilities, their undergraduate and graduate programs, and the quality of student services, as the benefits of their research and education have accrued far beyond state boundaries, creating the perception of lesser benefit to the state’s immediate economic needs.

To sustain a democratic, civil and progressive society, the public research university needs to live up to its mission to provide an inquiry-based education and to perform state of the art research. The government must continue to play a major role through its funding, policies, and regulatory mechanisms. Due to today’s limited resources, universities need very well-articulated relationships with the industry, while three-way public-private partnerships between university, industry and government provide the means to sustain an successful ecosystem for innovation.”



Linda P.B. Katehi
Chancellor of the University of
California at Davis, USA

Abstracts of talks

The voice of young scientists

“Young scientists today face an unprecedented pace of knowledge creation and unrivalled opportunities for global mobility. The market for academic talent is in fact the most unregulated and competitive global labor market. The inequalities across countries in training, infrastructure, funding, and networking remain significant and may be rising. With research in many disciplines becoming more capital-intensive, independence appears to be reached at higher ages and most countries in the world will never substantially contribute to cutting edge knowledge creation.

These circumstances suggest that both institutional and individual factors are key to scientific achievements and national science systems alike. One answer is to empower young scientists to work independently, to build their own international networks, and to give voice to their views by establishing young academies. Building on the success of the German Junge Akademie, many countries are now establishing national young academies. This movement is complemented by the recent establishment of the Global Young Academy. It aims to be the voice of young scientists who are between their completion of formal training and appointment to a tenured academic position. It can empower its members and shape new national and international institutional support for young scientists and science in general.”



TILMAN BRÜCK
Professor of Development
Economics at Humboldt-Universität
zu Berlin and Member of the
Executive Committee of the
Global Young Academy

Education has no borders

“Education has no borders. Each university is a repository of knowledge that is created, collected, assimilated, accumulated and preserved by the university for the benefit of the academic community as well as for society and the world at large. We believe that the agenda of the university does not end with teaching and research; it has to share resources with the external world. Our approach towards governance on Internationalization, Cross-disciplinary Research and Social Intervention will be discussed. Our University has a tradition of creating interdisciplinary schools for research and teaching with participation of faculty from diverse disciplines. Some examples are Nuclear Studies and Applications, Cognitive Science, Cultural Texts and Records, Film Studies, Natural Products and so on. The University is also involved in a number of projects being implemented by the Government departments and industries.

Good governance is based on the setting up of academic bodies that will ensure academic autonomy and at the same time monitor accountability. Being a state funded university, we also have to generate our own additional resources. In order to encourage international collaboration the University has drafted several rules for inward and outward credit transfers, dual degrees, student and faculty exchanges and participation in several international exchange programs.”



PRADIP NARAYAN GHOSH
Vice Chancellor of Jadavpur
University, Kolkata, India

The International Advisory Board

The Alexander von Humboldt Foundation is a non-profit foundation established by the Federal Republic of Germany for the promotion of international research cooperation. It enables highly qualified scholars not resident in Germany to spend extended periods of research in Germany and supports the ensuing academic contacts. The Humboldt Foundation promotes an active world-wide network of scholars. Individual sponsorship during periods spent in Germany and longstanding follow-up contacts have been hallmarks of the foundation's work since 1953.

The International Advisory Board of the Alexander von Humboldt Foundation is an independent, international expert group which meets once a year to discuss strategic issues relating to the global mobility of researchers and the internationalization of research. The Board provides a forum for debate on global developments in science and academia, science policy, and science administration.

History and mission

The International Advisory Board was established in 2007 in response to an increasing demand for expertise in questions concerning the internationalization of science and scholarship. It is a successor to the Advisory Board of the Foundation's Transatlantic Science and Humanities Program (TSHP), which was established in 2001 with the aim of creating a binational network of experienced leaders from German and North American academia, science administration, and science policy. The International Advisory Board supports the Foundation's strategic planning. As an independent expert group, it addresses current developments in global academic markets and identifies topics of special strategic concern for the Foundation and its partners in Germany, the United States, and beyond.

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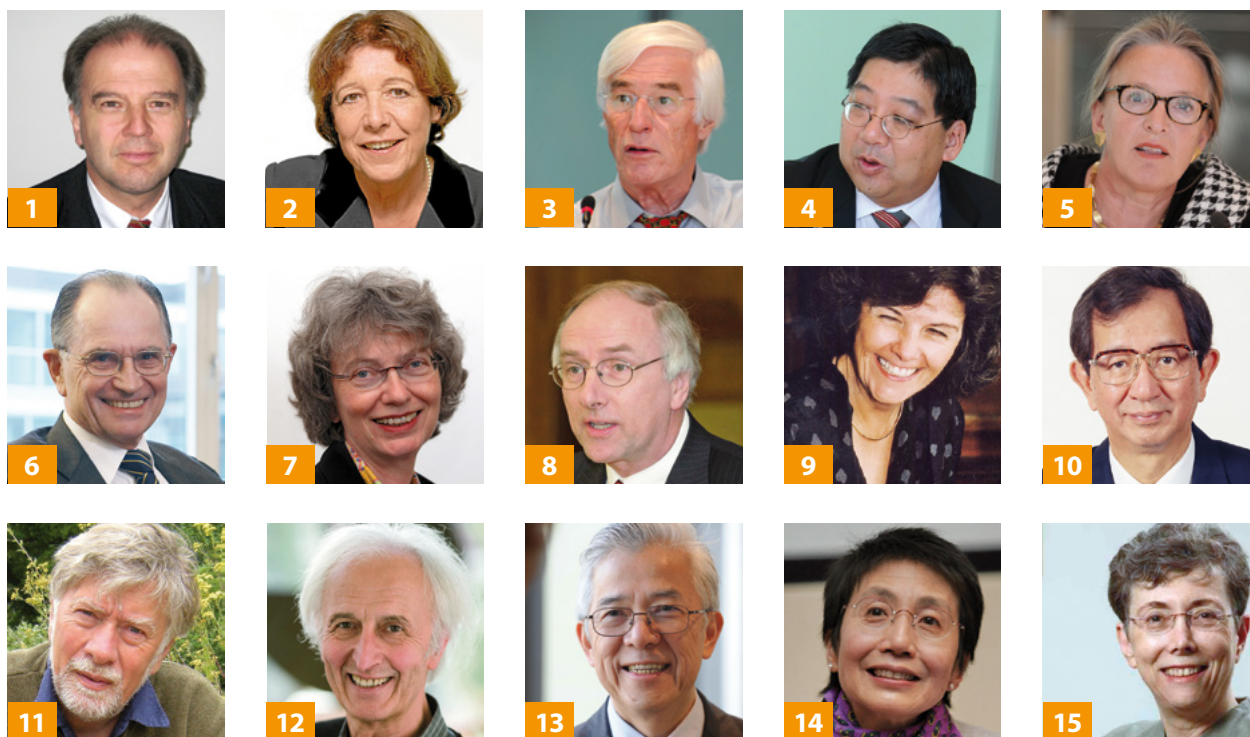
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