



BUILDING BRIDGES
CONNECTING EUROPEAN EXCELLENCE

Selected speeches by
Günter Stock
President of ALLEA
2012-2018

ALL EUROPEAN ACADEMIES

Building Bridges

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Published in Berlin by
ALLEA (All European Academies)
May 2018



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Preface

For me Günter is an example of the perfect gentleman and committed European! He is chivalrous, courteous, honourable and a strong believer in European cooperation. He has an in-depth knowledge of the world of science and innovation, and knows how to present his points of view in a diplomatic, friendly, yet determined way. That made him at the time the ideal candidate to become President of ALLEA.

I discovered the qualities of Günter when we were setting up a European mechanism to provide the European Commission with scientific support for policy making, which later became known as SAM. A key element of SAM is the provision of expert knowledge by the national academies. This required that the different European associations of Academies of Sciences got organised, which was easier said than done. Thanks to the diplomatic skills of Günter this was finally achieved and a Memorandum of Understanding was signed, symbolically in Günter's office in Berlin.

Günter also played a central role in modernising and updating the European Code on Research Integrity, a delicate process given the different views of a wide range of stakeholders. On time for the World Congress on Research Integrity in Amsterdam, Günter delivered a first class new version of the European Code.

I have worked with Günter on many other files and always enjoyed our cooperation, not just for his knowledge and diplomatic skills, and not just of his commitment to the European cause, but simply because of who he is and what he stands for.

Günter, I would like to thank you for the many years of excellent cooperation in your capacity of President of ALLEA and hope that our paths will cross again in the future.

*Robert-Jan Smits
Director-General DG Research & Innovation (2010-2018)*

Foreword

Seven years ago, ALLEA's Election Committee started the search for a new President and the name of Günter Stock came up. Of course, we had wondered whether it would be worthwhile to approach the then President of the Berlin-Brandenburg Academy of Sciences and Humanities and President of the Union of German Academies of Sciences and Humanities. Günter Stock was not only the full-time president of his Academy and the Union of German Academies, but also active in many other political functions that dealt with scientific matters. Taking office as ALLEA's president meant to say 'yes' to a time-intensive and not at all easy job.

If at that time ALLEA had been a flourishing organisation and the duties of the president could be limited to representative tasks and routine meetings, we assumed that the position would not be attractive to him and he would reject the offer. However, this did not apply to ALLEA at that time. In fact, ALLEA was in heavy weather, both financially and politically. ALLEA had lost terrain in the science-policy arena. At the same time there was and is an enormous potential in this network of 59 academies and learned societies in 41 countries in the Council of Europe region. In ALLEA, academies are gathered from Ireland to Armenia and Georgia, from Norway to Spain, Italy and Greece, from Russia to Israel. Old and traditional academies are members of ALLEA, but also academies which have had to reinvent themselves after political landslides and changing political systems in the last decades.

Leadership with a vision and the power to realise it, the ability to build bridges and to find solutions in deadlock situations were urgently needed. Such a challenge could be attractive to him and it was this challenge indeed to which Günter Stock said 'yes'. Unanimously, the General Assembly of ALLEA elected him as its president in Rome 2012, whereupon he took office.

Different worlds come together in Günter. That of the scientist, of the (pharmaceutical) industry, and of the leadership of scientific organisations and politics. Science for policy, but also policy for science, the framework conditions under which science really can solve problems. But above all, what science deeply needs as an ultimate motivation: curiosity. Curiosity about how science – always understood by Günter in the all-encompassing sense of *Wissenschaft* - can develop and under which circumstances. How trustworthy knowledge can be produced.

Seven years earlier, the then President of the Berlin-Brandenburg Academy, Dieter Simon, introduced his successor Günter Stock by connecting the historical landscape of Stock's birthplace (Šidski Banovci, now Croatia) with character traits as a gift from that birthplace: 'natural internationality, tolerance, multicultural understanding, fighting power, assertiveness and the courage and wisdom for a timely withdrawal' (Yearbook BBAW 2005, 191). This typology has really come true and it was clearly demonstrated during the ALLEA years.

Günter gets results, but loves the debates. He looks for solutions in dialogue with his partners. And if you tell him that something will not work in this or another way, he always has an alternative at hand. He makes decisions within a clear communication structure and creates a team spirit as President and with the Board. Clear goals, firmness and flexibility are characteristics of his style of leadership.

When Günter Stock accepted the presidency of ALLEA, it was not only the challenge to reorganise a supranational scientific institution in such a way that it could play an important role at the highest science policy level again, which attracted him. It was also the idea of Europe that was attractive to him. Günter Stock is fascinated by Europe as an idea, but also as a concrete project in difficult times. As he says, this is much more than the single currency, more than economy and markets. He is looking for the common European roots, for an identity that becomes visible in unity and diversity. In the way in which scientific cultures emerge and develop, but always with an eye for the social, historical and political context.

For Günter Stock, Europe is not a vague idea, but it has to be shaped in

concrete projects. There, science can show how it contributes to solutions of present challenges in our societies. He is deeply convinced that cooperation of the entire spectrum of scientific disciplines is badly needed with interdisciplinarity as *a conditio sine qua non*.

A president of a scientific organisation is often asked for his vision at various forums on the European scene. Only a small part of numerous speeches at different occasions and in different situations can be found in this collection. However, they demonstrate in a crystal clear way what Günter Stock stands for and how he sees the role of science in Europe in the midst of a globalised world. The first and the last speech demonstrate how the circle has been closed in the six years of his presidency. How a vision and a programme for ALLEA were developed and even more important, how much of it could be realised.

In his first speech before the 2012 General Assembly (Rome), Günter Stock mentioned a number of strategic goals that he wanted to achieve. He focused on a close cooperation with European scientific networks and international and European academy affiliations, a more important role of ALLEA in European science and research policy, a greater visibility of ALLEA in Europe, highlighting the special role of ALLEA for the humanities and the social sciences, and last but not least, the inner organisation of ALLEA.

In his farewell address he returned to these strategic goals from the beginning and describes where important steps were taken. This applies to the active participation of academies, it applies to the working groups with important results, and it applies to science policy. The fact that Günter was the chair of the five European Academy Networks during the first year that the SAPEA project started its work towards providing independent and interdisciplinary scientific advice to the European Commission was and is of great significance.

This small book provides only a glimpse of all the work for ALLEA done by Günter Stock. What the book cannot demonstrate is his personal charisma and the warmth he creates when he enters a room. Günter has a natural authority with an open mind and empathic heart. Moreover,

Günter enjoys life and exudes optimism everywhere. We want to thank him for his friendship and leadership during the last six years, and for his encouragement and unbridled commitment.

Ed Noort

ALLEA Vice President

Daniela Jezova

ALLEA Vice President



Building bridges - a biography

Günter Stock was born on 7 February 1944 in Croatia and grew up in the south of Germany. He studied at the University of Heidelberg, where he received his doctorate in Medicine in 1970. He spent his post-doctoral years in Germany and Sweden, before being appointed as Professor of Physiology in 1980 at the University of Heidelberg. In 1984 he took up the responsibility for the Cardiac and Circulatory Disorders section at Schering AG (now called Bayer HealthCare Pharmaceuticals). He spent the following 21 years in the company, from 1987 as Head of the Institute for Pharmacology, and from 1989 until 2005 as member of the Executive Board with responsibility for the company's research and development branch. In all these years, he kept in touch with academia, as associate Professor at the Free University of Berlin from 1986, as well as through his involvement in several bodies of German science and research organisations. For more than ten years he served, inter alia, as Vice-President of the Max Planck Society and as Senator and Member of the Board of Trustees of the German Research Foundation respectively, to name only some of his high-level science management positions.

As of 1995, Günter Stock got actively involved in several academies of sciences in Germany and Europe. He was elected member of the Berlin-Brandenburg Academy of Sciences and Humanities, of the German Academy of Science and Engineering (acatech), of Academia Europaea, of the European Academy of Sciences and Arts, and was Senator of the German National Academy of Sciences Leopoldina between 1999 and 2015. In 2006 and 2010, he got elected and re-elected President of the Berlin-Brandenburg Academy of Sciences and Humanities for two consecutive five-year terms, simultaneously

serving as the President of the Union of the German Academies of Sciences and Humanities from 2008 to 2015. Since 2015 he is chairman of the Executive Board of the Berlin-based Einstein Foundation.

Professor Stock has received the Commander's Cross of the Order of Merit of the Federal Republic of Germany and of the Order of Merit of Berlin. In addition, he was awarded multiple honorary degrees from academies and universities across Europe.

In 2012, Günter Stock was elected President of All European Academies (ALLEA) at its General Assembly in Rome and was re-elected in Lisbon in 2015. During his presidency, ALLEA has grown significantly, from 52 to 59 Member Academies from all over the Council of Europe region, and has established and further developed a plethora of science-policy activities. During his chairmanship, Günter Stock put a special emphasis on the establishment of initiatives aimed at exploring different facets of Europe as a cultural and intellectual entity, demonstrating that European academies are prepared and willing to join the debate on the future of Europe. One of these initiatives is the *All European Academies Madame de Staël Prize for Cultural Values*, which honours eminent scholars whose work represents a significant contribution to the cultural and intellectual values of Europe and to the idea of European integration. As President of ALLEA, Günter Stock was, furthermore, one of the initiators and the 2017 chairman of the European academies' SAPEA project (Science Advice for honour Policy by European Academies) which provides timely, independent and evidence-based scientific expertise to the European Commission and to the wider public.

Selected Speeches
(2012-2018)

Programmatic speech

ALLEA General Assembly

Accademia Nazionale dei Lincei

Rome, 12 April 2012

Dear colleagues and delegates of the Member Academies of ALLEA,

The Board of ALLEA has given Ed Noort and me the mandate to give the “Key Elements for a Future Strategy of ALLEA” some thought. We have tried to meet this task, which resulted in the draft of a somewhat large paper sent to you earlier.

Before I start telling you why I agreed to become a candidate for the presidency of ALLEA, it is an affair of the heart for me to thank Ed Noort, who has convinced me of this candidacy and who, in the short time of our co-operation, has become a respected colleague and a friend of mine. I also would like to take the opportunity to thank past President Jüri Engelbrecht and past Vice-President Nicholas Mann, who together have been an excellent team and to whom I would like to convey a cordial “Thank You” from the German scientific academies for their excellent work done for ALLEA in all those years. Actually, these colleagues were the ones to introduce me a couple of years ago to the “complexity” of ALLEA.

An equally cordial “Thank You” I would like to convey to the acting President, our colleague Štefan Luby, and to the acting Vice-President, our colleague Marie Therese Flanagan, for their commitment and their willingness to lead ALLEA until a new president has been elected.

Finally, my gratitude goes to Rüdiger Klein, who really tried hard to bring ALLEA into the European dialogue.

Why am I prepared to be a candidate for the office of ALLEA?

Firstly, because of ALLEA.

Secondly, because of my understanding and my empathy for Europe.

Thirdly, because I believe in the relevance which science and research will have for the future of our continent as a whole. With the word “science”, I mean all disciplines of science, humanities and social sciences – in the sense in which Leibniz constructed “his academy”.

All of these three reasons are somewhat related to each other. ALLEA is for me – despite of all rumblings and questions – a fascinating and needed institution. It comprises fifty-three Academies of Sciences and, what seems even more important to me, ALLEA is backed by about ten thousand excellent scientists who are bringing this continent forward. I believe that there is no other institution in Europe with a similarly huge scientific potential at its disposal. The crucial point is to use this potential and gain impact.

I am also pro ALLEA because its borders are not only embracing the Euro area and the European Union, but the whole of Europe in a wide sense as a continent with a 2000-year-old common history and common culture, one which has many contradictions and has been the stage of horrible wars as well. Europe is for me more than a political union, more than an economic partnership of convenience. The meaningful and forward-looking elements in Europe are in my eyes education and science, which both are the engines of a new Europe in a globalised and multipolar world. ALLEA, which through its Member Academies is uniting the academic elite of Europe, is certainly not able to play the decisive role in this process, but nevertheless a role, which is of great importance. Europe is an idea and a project, not just a geographically given condition. We, the academies, have to get out of the standby mode. I want us to enter the process of searching for reasons and finally proving why Europe is a necessity, far away from markets and the current financial crisis. It is very true: we have to assist our societies to overcome the dominance of current problems and obstacles.

Science and scientists must stand at the forefront of the developments of societies. I would like to see us actively take part in the development of a societal concept for an integrated Europe in a world full of challenges and opportunities. A Europe which stands for variety, open-mindedness, technical and cultural innovation, and a good sense for quality of life for

all, last but not least for scientists. If this sounds optimistic – too optimistic even – it is just right.

Now, after this personal and political credo, I would like to present to you the vision – or better the concept – of Ed Noort and myself, along which way ALLEA could move in the future. I will structure it in six sections:

1. Close Co-operation with other European Academy Institutions

Besides ALLEA, there are more affiliations of academies at the European level, such as the European Academies Science Advisory Council (EASAC), the president of which is a guest in the Board of ALLEA, or Euro-CASE, the association of the European technical academies. Furthermore, there are European academies, the members of which are recruited from the whole of Europe: the Academia Europaea in London, and the Academia Scientiarum et Artium in Salzburg. Thus, together with ALLEA, there are multiple actors on the European stage. Of course, we certainly should not strive for merging all of these into one institution, because the charm of Europe is its diversity. But we should intensify the co-operation between these actors to develop a common European scientific voice, which should be able to be heard across Europe, addressing important questions of science and research, and sometimes beyond.

2. Co-operation with international European Academy Affiliations

Scientific problems and subjects do not stop at the borders of Europe; they are of a global nature. One aim of my presidency would be to offer the affiliations of science academies operating worldwide – like the InterAcademy Panel, the Union Académique Internationale, which is so important for the Humanities, the International Human Rights Network of Academies and Scholarly Societies, the International Amaldi-Conferences, the Inter Academy Medical Panel and other institutions – a close co-operation with ALLEA and an intensive dialogue in both directions. These would comprise the possibility for ALLEA to issue scientific declarations and statements worldwide.

3. A more important role of ALLEA in the European science and research policy

The European academies of sciences play a very important role in European

science and research policy, but they are not the only actors. The universities, the non-university research institutions, and also the industrial research institutes are all playing an important role as well. Therefore, it has to be a vital interest for all actors on the world stage of science policy to find and defend common positions. In my opinion, to reach this aim it is necessary to intensify the contact to other European institutions and other players in the scientific community, in order to be able to develop a common position on certain important questions, and to be able to contribute to European science being more than the voice of twenty-seven member states. This also includes, in my opinion, a close co-operation with Science Europe, which has similar principles. Aside from that, ALLEA should intensify its influence on the research framework programmes of the European Union, as they are decisive for the future status of research and science in Europe, for the focal points promoted in the future and for the future shape of the scientific landscape in Europe. And here, the case of humanities has to be made.

Very closely connected with item three is for me item four.

4. Greater visibility of ALLEA in Europe

We should engage in all activities that would assist ALLEA in gaining a greater visibility in Europe. In our strategy paper Ed Noort and I have made some proposals, e.g. the initiation of a European academy prize to be awarded every two years, the addition of scientific events to the yearly General Assemblies, as it was done yesterday in Rome, for example. Another proposal is that ALLEA should intensify its efforts to fill a coordinating role for the national activities with regard to future scientific questions. We have mentioned here, for example, the topic of personalised medicine, to bundle them and to convey them to politics and society. One more exciting issue could be the position of the family and the ageing society in Europe. Both examples are relatively simple to operationalise, since important work has been and is being done in national academies already. And yesterday we received an invitation by Mrs. Kroes to take the results of the Standing Committee, headed by Professor Straus, into her agenda and bureau.

A second outcome from yesterday is the preparedness of ALLEA members

and Mrs. Kroes to come up with a “road map” on how to harmonise the different approaches towards E-humanities. ALLEA should think of enabling workshops on E-humanities for those academies that are interested.

5. The special role of ALLEA for the Humanities and the Social Sciences

ALLEA comprises in its affiliation all subjects and disciplines. In ALLEA, there are research-producing academies and academies whose task it is rather to promote science. Furthermore, there are academies with an emphasis on the natural and the medical sciences and, on the other hand, academies that focus on the humanities and the social sciences. This diversity and interdisciplinarity are also reflected by the standing committees, working groups, and other advisory bodies of ALLEA. This is a unique characteristic of ALLEA. Therefore, ALLEA has to continue to primarily aim at defending the interests of all fields and disciplines.

In addition to this, in the coming years there should be an emphasis on the humanities and social sciences. In the future they will increasingly have the task to provide people an orientation in a world, which is becoming ever more complex, and which is increasingly shaped by the innovations from the natural sciences or the technical sciences. In this context, I see two important fields of activity for ALLEA:

a) E-humanities and the closely linked question of Open Access

I know that there are many good national initiatives which could benefit from being combined for more impact. ALLEA would be competent to take over such a task, as I laid out yesterday after commissioner Kroes' contribution.

b) Initiation of a long-term European research programme on European Identity

Here, Ed Noort and I are thinking of the initiation of a European research programme for long-term research on European identity, European cultural heritage, and on the future role of Europe in the world. I would like to contribute with the experience gained in past decades in Germany with a to-date, unique research programme, the so-called Academies' Programme, a programme in which all German academies are

participating. I would like to initiate a research programme of this kind, financed by the European Union, in which all European science academies could participate.

A research programme of this nature, which would be of benefit to all European science academies, certainly cannot be implemented within one or two years. But already some months ago I presented the idea to the German Minister for Science, earning a very positive feedback. If such a research programme would be of interest to ALLEA, then one should attempt to embed this idea in the 8th Framework Programme for Research of the EU.

6. The possibly most difficult topic: The inner organisation of ALLEA

ALLEA has been financed for twelve years by the Royal Netherlands Academy of Arts and Sciences, and I think we cannot thank our Member Academy enough for financing ALLEA with a considerable sum. For this, I would like to submit a cordial thank you to our colleagues from Amsterdam. What an outstanding engagement!

After this funding has been cancelled and no other academy was able to continue this funding, we have only the option to fund ALLEA via membership dues. I have very thoroughly read the minutes of the General Assemblies of ALLEA from 2010 and 2011, and I know how intensively several possibilities had been discussed. Ed Noort and I are now proposing to regard the year 2012 as a kind of interim-year, asking you to provide the funds promised by you for 2012, and to agree to a following test phase for three years with scaled membership dues.

I am aware of the fact that the model to determine the amount of the membership dues in accordance to the economic power of a nation, to which the Board had agreed on, is not a system which is doing justice to every single case. This has to be discussed in certain cases, as I learned recently. And do not forget that we will test the system for a period of three years. This should allow for intelligent adjustments. It would be a shame if we did not give a chance to this opportunity during the next months and during our discussion, we should concentrate on carefully listening to arguments.

In juxtaposition to the thoughts of 2010 and 2011, Ed Noort and I have

already proposed two important changes: The amount of the membership dues, discussed in the past, shall in general be reduced by 36 percent, and the envisaged budget for a small office at the seat of the president of ALLEA shall be reduced from 250.000 Euros to 100.000 Euros for the following three years. The major part of the budget, 150.000 Euros, shall be spent for activities of ALLEA on the scientific and science policy sector and for the bodies of ALLEA, like the General Assembly and the board, the standing committees, working groups and advisory boards. Before the 2015 General Assembly, this system of financing has to be thoroughly reviewed with regard to the experiences made until then, including the impact ALLEA might have gained, as the Finish Academy Council has requested.

An important part of our finance plan is also that the country which is hosting the ALLEA office will provide additional funds. First negotiations with the German Federal Ministry of Science have shown the willingness to fund ALLEA in the next years, hopefully with a considerable amount. This would enlarge the financial scope for ALLEA's activities – not its office – which this General Assembly will decide upon for the coming years.

A second proposal from Ed Noort and me is that ALLEA in the future should have two Vice-Presidents. This would offer us the possibility to distribute the responsibility on several shoulders. We have tackled several schemes of task allocation in our “Key Elements”. I believe that after the President and the Vice Presidents have been elected, they will coordinate their tasks with each other and afterwards discuss them in the Board of ALLEA, with the aim of increasing the impact of ALLEA and its value for the Member Academies.

A third proposal would be to form a close alliance with EASAC and the Academia Europaea, by allowing each other a permanent guest status in the board, so that the positions on important subjects and questions can be agreed upon beforehand and the involved parties can speak with one voice representing the European science academies.

My personal style of working is one of communication and of team spirit. A central task for the President of ALLEA is, in my opinion, to ensure that the presidium is acting collectively and co-operatively, that it is discussing

everything thoroughly with the Board, and that it is implementing the decisions made in the General Assembly, thereby controlling and following up on its strategic and operative goals and tasks.

Thank you for your attention.

Digital Humanities and Research Infrastructures

ALLEA General Assembly

Accademia Nazionale dei Lincei

Rome, 11 April 2012

Dear Vice-President of the European Commission Kroes,

Dear Minister Milanese,

Dear Minister Profumo,

Dear Professor Maffei,

Dear Professor Luby,

Dear Delegates to the ALLEA Member Academies,

Ladies and Gentlemen,

Firstly, let me warmly thank you, Vice-President Kroes, for your thought-provoking and illuminating comments.

Yes, the digitisation of the stock of knowledge is one of the great challenges facing the scientific community today, and one that crosses national and disciplinary borders. For digitisation in the humanities, it is a challenge especially for the academies of sciences and humanities.

The demand that Europe's cultural heritage be secured and made accessible through the new technologies now available also offers a unique opportunity to democratise knowledge. Never before has there been a chance to make such a large part of our intellectual and cultural memory accessible to such large sections of society. Furthermore, digitisation has produced substantial efficiencies in scientific and scholarly work. Today a global dialogue takes place within seconds – including on specialist scholarly and scientific questions.

I am therefore very pleased that the European Commission has made the topic 'Digital Agenda' a core part of the Europe 2020 Strategy, and especially that the digitisation and preservation of Europe's cultural memory is a central area of action in this agenda. With its recommendations to EU Member States 'on the digitisation and online accessibility of cultural material and digital preservation' of 27 October 2011, the European Commission has taken an important step towards this vital goal.

To analyse, preserve, to make and keep available the results of research into our cultural and intellectual heritage is the essential idea that underlies the German Academies' Programme, which is coordinated by the Union of the German Academies of Sciences and Humanities.

For a long time now, we have been addressing issues raised by digitising the results of the research projects' work.

In the first part of my presentation, therefore, I wish to report some of the experiences that we have gained in the last few years on the topic of digitisation. After that, I will discuss some key aspects which, in my view, play an especially important role in digitisation activities in the humanities.

The German Academies' Programme is one of the largest German research programmes in the humanities. Support for basic research in the humanities is one of its essential features. It brings together more than 150 long-term research and edition projects under a single umbrella organisation. They include dictionaries, collections of material on the ancient world, on Asian cultural traditions, and on medieval and early modern history.

To make the projects' research results accessible as digital resources via open e-infrastructures, a comprehensive digitisation concept was developed consisting of four pillars:

1. Retroactive digitisation of all research results that were previously published only in print editions.
2. The publications of all current projects will be digitised in parallel to the print edition.
3. New projects begin only if they comprise a concept for digitisation from the start.

4. The necessity of guaranteeing long-term availability, storage and updating of the data on the Internet.

A good example is the digital presentation of an excerpt from the Scientific, medical and technical writings (Naturwissenschaftlich-medizinisch-technische Schriften) of Gottfried Wilhelm Leibniz by the Berlin project 'Leibniz-Edition'.

In cooperation with the Swiss Academies of Arts and Sciences and the Austrian Academy of Sciences, a joint working group advises the research projects in the Academies' Programme on ways of archiving to secure long-term availability and on new technologies in electronic publishing. It also makes proposals for shared data standards to ensure the compatibility and interoperability of the digital data. The academies support the goals of Open Access to improve the results of publicly funded research through online presentations at no charge. As an illustration, let me refer to my own academy, the Berlin-Brandenburg Academy of Sciences and Humanities, which committed to, and helped draft, the *Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities* (Berliner Erklärung) already in 2003.

In my opening remarks I mentioned the opportunity to democratise knowledge by digitising our stocks of knowledge and providing free access to them. Two examples from the Academies' Programme illustrate this particularly well:

- 1) In the first couple of days after the completion of the 'New Edition of Mozart's Works', more than 4 million page views were registered. Today, it is accessible worldwide, with special interest from users in South America and Asia, where the printed volumes are hard to come by or only few copies are available.
- 2) Hittite Studies is a very small discipline worldwide. The print editions of research findings are purchased in only a few hundred copies. However, the internet portal of the project of the Academy of Sciences and Literature, Mainz, 'Hittite Studies' (Hethitische Forschungen) is currently accessed around 12,000 times a month, reaching several times as many people as the international scientific community in the field of Hittite Studies.

Ladies and Gentlemen, digitisation is no longer just an opportunity. It

has become a necessity in order to reach new groups that were previously unable to take part in the global dialogue on knowledge. Research results are accessed over the Internet by large numbers of users, in many cases greatly exceeding the number of members of the scientific community in each field. Through access that is decentralised and not tied to particular times, professional scholars and every other interested person around the world can at any moment be involved in the most up-to-date developments in a research field. Together, we must support these developments and promote them further. This is also contained in the *Open Science for the 21st century* declaration of ALLEA.

We in the academies could do something, for example, in the area of dictionaries, which are also a special focus in the Academies' Programme. The number and variety of its languages is of central importance for Europe. To preserve them, but, above all, to understand them in their origins and development is one of the great tasks of the various national dictionary projects.

It is, I think, high time that a network of these national dictionary projects was established. To achieve that, we need to work together, agree on common data standards and secure long-term funding. The added value of an undertaking of this type would be enormous: in a Europe-wide network of dictionaries, approaches based on time-periods and regions could be linked to diachronic and geographical data about the vocabulary of European languages, and they could be visualised together. Language contacts in Europe from Roman times on could be presented in a vivid way and could be made accessible to a large circle of users.

The digitisation of our cultural heritage is taking place in increasing quantity all around Europe. Allow me now – on the basis of the examples and experiences drawn from the Academies' Programme – to bring up some future challenges that digitisation brings and which will play a role, particularly from the perspective of research at the academies of sciences and humanities, on the Digital Agenda.

At the European level, one of the major challenges will be to select and compile the numerous national and increasingly multilateral initiatives on research infrastructures. In the future, a few good projects should be

developed and strengthened. Broad cooperation between different actors is needed. Good examples of research infrastructure initiatives in the humanities are CLARIN (Common Language Resources and Technology Infrastructure) and DARIAH (Digital Research Infrastructure for Arts and Humanities). These initiatives now provide the hard- and software needed in many research areas in the humanities, and, through this, they can provide common standards and thus the interoperability that is of such importance for scientific research.

There are essentials of digital SSH research that cannot be produced and guaranteed by efforts of the scientific community alone. Therefore, in accordance with the Manifesto *The New Global Data Generation – Simplifying and Guaranteeing Access and Sharing in e-Science Scenarios*, launched a few weeks ago by a transdisciplinary and transnational initiative (CESSDA, CLARIN, DARIAH, ERF, ESS, LifeWatch, PanData, RAMIRI, SHARE), ALLEA is urging “policy-makers to facilitate agreement, harmonisation and investment in (1) shared funding models for transnational infrastructures, (2) simplified licenses to facilitate access by researchers to data, and (3) access and identity management at national and pan-European levels.”

Ladies and Gentlemen, we must take a long-term view and show vision in our digitisation activities. By digitising the data and findings of our research and by making them publicly available, we are issuing an invitation to engage with our ideas and to join the dialogue. This invitation is today addressed to the interested general public, but also to our future generations. In this we are meeting our obligation to keep our digital cultural heritage available in the long term, and to ensure that our carefully prepared editions can still be read tomorrow and the next day, in ten years and in a hundred years – quite a challenge indeed.

Long-term archiving is a task for centuries, for which we, as academies, need financing and strong partners. This is where the political world has a role to play, too. Cultural heritage institutions – and in Germany alone these include 30,000 cultural and scientific institutions – need permanent, dedicated funding to preserve their digital resources for the future. We need to think about long-term availability in every digitisation project and to plan the necessary financial resources right from the start.

We will only manage the task of long-term archiving in a cooperative, joint effort among libraries, archives and museums, and with the support of high-capacity computing centres and experts who formulate standards, check formats, and advise us in the creation of digital editions. This type of competence network must be followed by infrastructures that take up the responsibility for archiving and implementing it.

Only if we solve the problem of long-term archiving of our digital heritage, only then will new digital portals like 'Europeana' be attractive in the long-term. As academies with an immense stock of knowledge, we are formulating an urgent need here today. It would therefore be highly desirable to establish a research infrastructure programme in Europe to pursue this crucial goal.

I thank you for your attention.

Europe 2020 – designing research for European societies in a changing world

Roundtable organised by the Federal Ministry for Education and Research (Germany)

University Foundation Club

Brussels, 18 September 2012

We all like foresight processes. We all need educated guesses about our technological and scientific future. Countries do it, organisations do it, and they do it because it helps us pave the way for the future, and thus helps to plan for such a future.

I wonder if you carefully analyse all outcomes of earlier foresight processes. In Germany, for example, we have the so-called "Delphi-process" where approximately 2000 experts and scientists are asked to look into our technological and scientific future. If we take the latest report from the 1990s which aimed to predict our present, it is interesting what we find there. There are lot of important predictions which sometimes even get the timing right.

In important questions, however, there was a tendency towards overly optimistic views. In hindsight, the reasons for this optimism are, on the one hand, technological scientific reasons. On the other hand, important scenarios were not reached because of societal and political processes and hurdles. The same is true for large and long-lasting infrastructure projects.

The lesson I would like to draw from this experience is that if we want to cope with all the challenges ahead, such as energy, water, health, climate and the like, we first need to know that all those topics are multi-disciplinary in nature and they are all interconnected: Health and water, health and energy, health and climate, they all have common grounds.

The next lesson which I take from that is that we not only need an interdisciplinary approach when it comes to natural sciences and technological interactions, but we also need strong involvement of

the social sciences and humanities. And to make it quite clear: Not as something which is politically correct and politically wanted, but rather in a very serious and integrated role.

So, my postulate no. 1 for today would be: We need a new culture of risk/opportunity assessment which takes place in parallel, and not sequentially, to technological problem-solving efforts. Before we start large projects, we need to be aware what kind of relevant questions might come up during different projects and we need to keep track of the challenges we encounter in the process.

My second point is related to major challenges which have no primary technological basis. I would like to give you an example: We as academy have recently finished a study on demographics, not in the classical way where we talked again about aging society, but rather concerned with fertility – the study was named *Future with children*. And the question we tried to answer was: what is it that prevents young people from becoming parents? We addressed this question in Germany, Switzerland and Austria. What we learned was that the only technological aspect in response to this question is reproductive medicine; and this aspect alone is and will not be, the ultimate problem solver at large. Problems are of societal, political, and financial nature, and problems are found in the way life is organised at a young age.

Concerning research, it was interesting to know that in all these countries there is quite some data available at the macro-level, but almost none at the micro-level, which is needed urgently, since the answers towards the problems in these fields are regionally, and sometimes personally, different. Beyond this example there are others: what do we really know about migration? What do we know about cultural transfer processes within Europe? How much scientific knowledge do we have about religious diversity and the impact on our societies? And finally, how much do we know about inclusion? These, ladies and gentlemen, are just a few examples of the issues ahead.

Therefore, my postulate no.2 is that we need a programme within Europe supporting interdisciplinary working groups which can work for 3 – 5 years in order to collect data, initiate new research, and come to conclusions and, hopefully, recommendations.

My third point is the following: If we as a society want to know where to go, we have to ask ourselves: where do we come from? The research performed in academies addresses, to some extent, our cultural heritage, mainly with a national perspective, sometimes with a European perspective. And this research is a solid reminder of our multicultural roots, and also of our multicultural heritage. This research fulfils a desire to better understand mankind beyond the genetic code and human's biological nature.

Do we really believe that we can build a European research area without combining it with HERA – the Humanities in the European Research Area? Shouldn't we try everything to not build parallel worlds? ERA on one side, and HERA on the other side? One of our real tasks in the future is also to overcome artificial separations as introduced in "The Two Cultures" by Charles Percy Snow.

Finally, we cannot seriously believe that we can build a relevant ERA without considering education or, what we call in German, Bildung. One of the dominant issues we have to face is our young people all over Europe who struggle to cope with their realities.

And this leads to my fourth postulate: We need to understand and do research on our European roots, our European identity. This is more important today probably than ever before. And along this, we need to preserve and better understand our specific European roots, where language, arts, scientific culture, political culture, and the evolution and development of our social systems are of prime importance. And, of course, there are many national and regional efforts along those topics. But what we need is a programme at the European level supporting, coordinating, and financing these efforts. Academies, i.e. those within ALLEA, already work along those lines. A European research programme in this area would definitely boost these activities.

My final point concerns IT infrastructures for humanities and social sciences: the Digital Humanities. We have quite a few rather successful initiatives at national, regional and, in part, already at the European level. But we need more bundling of these efforts, standardisation of these initiatives in order to allow better data-intensive research. We need to improve findability of data, but even more important is the issue of

long-term archiving in a functional and meaningful way. Here, again, we need a specific programme which needs to be carefully drafted and built on what is already out there. Such an effort would support science and research, but it would also allow for better advice to our societies.

Facing the future: European research infrastructures for the humanities and social sciences

European Strategy Forum on Research Infrastructures

Berlin, 22 November 2013

Dear Dr. Nelle,

Dear Dr. Duşa,

Dear Professor Wagner,

Ladies and Gentlemen,

I am delighted that so many of you have attended and contributed to this insightful conference addressing the topic of research infrastructures, with its ground-breaking developments which we have experienced in the recent past and that will certainly even accelerate in the days to come. It is thus a very timely event and ALLEA, the federation of 54 academies in 42 countries from the Council of Europe region, is honoured to be part of this process.

In the past two days, we have learned about the issues that experts of the humanities and the social sciences, policy makers and scientific research infrastructure coordinators all over Europe are dealing with in building, managing and improving research infrastructures, including the opportunities provided by the new technologies.

In the different sessions, selected issues have been addressed in a cross-cutting way – such as “Big Data” – which shows their utmost relevance for all scientific disciplines, increasingly also for the social sciences and humanities, as we could see. These disciplines, which only recently began to explore the promising opportunities and the growing challenges of such developments, can learn from the experiences that other branches, such

as the natural sciences, have gained over the past years. I am grateful that this conference could offer a platform for such interdisciplinary exchange, particularly between the humanities and social sciences.

Let me dedicate some words to a topic not directly related to this conference, but nevertheless of utmost importance for the future of the humanities and social sciences in Europe.

As you know, these days the European authorities in Brussels are in the very last stages of shaping a framework programme for research and innovation for the upcoming seven years.

We appreciate the adjustments made on Horizon 2020, namely by introducing the 6th challenge on “Inclusive, innovative and reflective societies”. For the first time, SSH is explicitly codified in the funding guidelines. This process has been, and still is, accompanied by an intense dialogue and vital discussions with the research community. In fact, we have been fighting very hard for these adjustments.

In addition to Horizon 2020, “Research and Innovation” has become one of 11 objectives of the European Cohesion Policy 2014–2020, which aims to break down barriers and to close gaps within the European Union, thereby opening new doors for countries with a strong need to further develop their scientific sectors, particularly as regards the necessary research infrastructures.

We understand these measures as a signal from the European Commission: it acknowledges the eminent role of SSH research in achieving Europe’s ambitious research and innovation objectives or, as the recently published Vilnius Declaration puts it:

“Making use of the wide range of knowledge, capabilities, skills and experiences readily available in SSH will enable innovation to become embedded in society.”

Still, we, as the research community, have to stay vigilant. The release of the Horizon 2020 draft *Work Programmes* raises several questions that we have formulated in a recent letter to Commissioner Geoghegan-Quinn. We propose a number of adjustments which we consider critical for the humanities and social sciences. Among our particular concerns is the

allocation of budget for SSH to ever more items, and the lack of adequate structures for embedding SSH throughout Horizon 2020 in order to foster the truly interdisciplinary nature of future research in Europe.

However, there has been an apparent shift in mentality in Brussels. The humanities and social sciences are now being consulted when tackling societal challenges. This creates a certain responsibility. We should take advantage of this openness and help by further integrating humanities and social science research in the programme and providing worthy applications.

Hence, I believe we should do both: First, to really make an effort and engage in this competitive process and, at the same time, stay alert and maintain the dialogue with the policy makers in order to make the case for an adequate and genuine role of social science and humanities research in Europe.

One of the major future challenges in Europe will be to select, interlink, and draw together the numerous national and, increasingly, multilateral initiatives on research infrastructures. In the future, a few good Europe-wide projects should be developed and strengthened.

Moreover, as Gerhard Lauer pointed out yesterday, if we use the same standards internationally, the possibilities of semantic linking of the cultural heritage will increase markedly. Not just the canon, but the whole of cultural tradition would become more visible and translatable in various languages.

For this, an increased engagement in pan-European coordination, cooperation and networking is needed.

In order to contribute to these efforts, ALLEA and the Union of the German Academies are currently jointly undertaking a pan-European survey and analysis of basic research in the social sciences and humanities, conducted at the European academies and learned societies. With this project, we aim to bring transparency to these areas of research. We are very grateful for the financial support that the German Federal Ministry of Education and Research provides for this endeavour.

The project investigates and seeks to improve the coherence of the

numerous ongoing SSH research projects and activities within and across national borders, including the existing digital tools and infrastructures as well as the data standards. In the medium term, it is intended to detect opportunities for a long-term SSH research programme on cultural heritage in Europe.

Once concluded, we are keen to share and discuss the outcomes of this initiative in order to jointly contribute to the shaping of the future for social sciences and humanities research and infrastructures in Europe.

ALLEA is working on topics closely related to this conference, particularly via its Working Group on E-Humanities, chaired by Sandra Collins. These topics include:

- the importance and relevance of the humanities in contemporary society,
- the interdisciplinary exploitation of digital technologies in the humanities,
- the challenges cultural archives present to 'Big Data' technologies and analytics.

Discovering, interpreting, and preserving our European cultural heritage is a societal imperative. In order to do so, we need to sustain research infrastructures and to enable open access to data.

Ladies and gentlemen, I would like to thank the speakers of this conference very much for giving us such multifaceted perspectives on the questions related to the topic of research infrastructures for humanities and social sciences.

Many thanks to the session chairs for assembling such highly qualified experts.

I am particularly grateful to Dr Nelle of the German Federal Ministry of Education and Research for supporting this important conference, and to Dr Duşa and the members of the ESFRI strategy working group Social and Cultural Innovation for its initiation.

I would like to thank Professor Wagner and the German Data Forum for the close collaboration in hosting the conference here in Berlin and the GWI that took care of the smooth functioning of this meeting.

Last but not at all least – many thanks to all participants for the vital discussions throughout the conference.

I am convinced that the conclusions represent a valuable contribution to the future deliberations on research infrastructures in general and to the re-shaping of the ESFRI roadmap in particular.

Thank you very much for your attention.

Academies and foundations to promote excellent and independent research

Balzan Prize winners' Interdisciplinary Forum

Rome, 21 November 2014

Distinguished winners of the Balzan Prize,

Dear Professor Quadrio Curzio,

Ladies and gentlemen,

Prestigious prizes like the Balzan Prize and public award ceremonies are a great opportunity for scientists, for the science system itself and, of course, for institutions and, in most cases, for foundations as well to show and present their work. And there are several reasons why science, the science system and scientists benefit from prizes:

1° Prizes clearly show to the non-scientific world the necessity for and, even more so, the abundance of excellence.

2° Within the science and research system, prizes send a clear signal that excellence counts, and that the decisions of the jury are carefully observed by their peers, and hence they are part of the quality assurance practice within science.

3° Finally, since the prizes are given to personalities, but are surely not independent of the topic they have been working on, the decision of the jury can also be a hint about trends in science at that point in time.

For foundations, the awarding of prizes is a perfect opportunity to document their principles and to demonstrate their missions. Moreover, it is a wonderful signal that civil society cares about our future and hence cares about science. And there is no doubt that science, the science system and we, all scientists, need the support of non-governmental foundations, a support which of course goes far beyond donating prizes.

In order to talk about the role of foundations and academies within the

frame of our science and research system, we first need to begin with a few general remarks on science and our current system.

There is no doubt that the world we are living in is a so-called “Leonardo world”, a term created by Jürgen Mittelstraß, a German philosopher who indicates with these semantics that we people, scientists, and engineers, largely contributed to what is surrounding us, I mean to our world as it is.

There is again no doubt that the challenge, the responsibility to further improve the “conditio humana” and hence to tackle all the challenges ahead of us, be it climate, be it energy, be it health, can only be tackled by science, by better science and, most likely, by more science. However, science must be interconnected and truly problem-oriented, since the problems we are facing are not disciplinary problems only.

The great challenges do not care about disciplinary functions and borders. And one of the major challenges within science has been, and is, to grasp these complexities with interdisciplinary or, again, as Mittelstraß would put it, with transdisciplinary approaches.

Universal geniuses like the founder of my academy, Gottfried Wilhelm Leibniz, or Isaac Newton, founder of the Royal Society in London, or even Leonardo, are no longer available nor conveyable. Therefore, we have learned to organise science, especially, of course, but not only the field of big science, into consortia and in many cases into regional and, where appropriate, into supranational or even globally acting teams. And yes, this has led to an interdisciplinary working attitude, which, however, in most cases is still an interdisciplinary philosophy within natural sciences, including engineering.

Bridging the gap with humanities and social sciences is still a major effort, which we have to make since, as I mentioned before, most of the big challenges are still ahead of us. And the challenges need reflection, a true risk/benefit analysis, which goes beyond technology and economics. Therefore, I would like to mark this true interdisciplinarity as the first of a number of “desiderata” we still have in science and within the science system.

There is no doubt that the way we have approached our problems has been, and still is, highly successful; the scientific achievements in our various

disciplines are breathtaking. This is true for medicine, where I come from, where we have begun to understand diseases at a molecular level and also treat them at this level. Another example of our enormous scientific success during the last decades is the field of space research, where scientists have managed to land a satellite called “Philae” after a 10-year journey on a small comet with the size of 12 square kilometres.

Of course, there are many more examples in all fields. All of these achievements have a direct impact on our daily life, but they also increase the expectations people have of science and the desire of those who, by profession, have to care about science – to be specific, not only scientists, but also politicians and managers.

The successes increase their desire for new solutions, for solving the challenges ahead of us, and, of course, decision-makers want to direct the funds which are spent on research increasingly towards those areas which promise new products, new processes and new solutions. This is what we call product-oriented or applied research.

It is less and less understood that there is a continuum between curiosity-driven research and applied research. Curiosity-driven research is the beginning and the humus of all. Without this type of research, the ensuing applied research will soon die out. And it is also true that there is no clear sequential order between curiosity-driven and applied research. However, we know much better today that there is an interactive relationship between these two.

Some curiosity-driven research has an immediate impact on applied research, but sometimes it takes 15 to 20 years to obtain results in applied research, as it happened, for example, in what we call biotechnology today. There, it took from the late forties and fifties to the eighties and nineties to create a new industry out of the early research efforts. Sometimes questions arising in applied research necessitate completely new approaches to thinking and experimenting, and sometimes one has to go back to very elementary and basic questions in order to overcome hurdles and solve applied research questions. This even has consequences in the organisation of science and in our innovation system. University research, which used to be curiosity-driven research, today sees the new necessity of looking into

applied research as well. And industry, the classic locus for applied research, in many cases faces an enormous need for curiosity-driven research, often with the help of networks, including academia.

So, the relationship between invention and innovation, with innovation being the practical outcome of what has been created before as invention, is highly complex. And there can be no innovation without invention, because in most cases breakthroughs are made in curiosity-driven research. So, I would like to state that my second desideratum is the need for curiosity-driven research which must not be scaled down – in contrast, we need more of this kind of research.

In this context, we have to learn a third lesson: research in the humanities and in the social sciences is not only needed to preserve our cultural heritage. It is not only needed to interpret this heritage and make it available for our current thinking. It is also needed because, in the words of the German philosopher Hans-Georg Gadamer, “Zukunft braucht Herkunft”, or if you would like to put it in English: “If you want to prepare for the future, you need to know where you come from”.

The hype about news in natural science or engineering and the excitement which it creates should never make us negate this basic principle: the need to support research in the humanities and the social sciences. Nevertheless, it took more than two years to make the Commission in Brussels, which elaborated Horizon 2020, the new framework programme for research in Europe, to understand that humanities and social sciences are not only helpers and, to put it negatively, ‘reflection machines’ of the developments of the natural and technical sciences, because these fields have their own research needs in basic, curiosity-driven research.

We know of many countries – and not only the ones with lower income – that are cutting the expenses for humanities and social sciences. And this is done in times when, more than ever, we need true interdisciplinarity, which means that not only mathematicians, engineers and material sciences work together, but also philosophers, sociologists and others.

The big challenges ahead of us demand and need the work of the social sciences and humanities, disciplines that take part in the dialogue on the best possible way to the future and, from the beginning, add their

competencies to the large transformation processes that are a characteristic of our time.

The old traditions, which are sometimes pursued to find technical solutions and then, some time later, even years later, are used to reflect on consequences for our societies, represent attitudes and sequences which no longer work. Large technical programmes need intensive parallel reflections including ethics, philosophy, law, sociology and other disciplines. And, of course, there are more massive transformation processes going on in our societies, such as migration, religious diversity and many others, which need research and new concepts.

So, my next topic in my list of “desiderata” is the preservation of the roots of innovation: curiosity-driven research including the humanities and social sciences. And this new development within science is paralleled by new ways of communication. Within science, we now have a massive movement called “Open Access”, where the role of publishers and science journals is questioned or even threatened, or, as you can also say in a positive way, supplemented by pre-publications and publications on the internet and in social media with blogs and tweets, which are used to distribute scientific results.

Especially social media is used to increase the awareness for scientific results, and Wikipedia, with its enormous amounts of data and information, and sometimes even knowledge, gives all of us the impression not only of rapid and easy access to what the world knows, but almost kindles the feeling that the availability of scientific data is identical to a solid knowledge of, and the ability to, properly reflect and interpret the data and to bring them into context. But this is by no means sufficient for enabling and improving assessment!

A couple of years ago, we had a very simple communication system: the scientist on the one side published his data and his interpretation in peer reviewed journals, and if the data were of some interest to the public, science writers in journals on the other side were there to translate it for the public. Only rarely did scientists directly address the public; this attitude was even judged as being non-scientific, and the scientists were regarded as being not as serious as they should be. Only the most successful were still somehow appreciated by their peers.

Things have changed completely. On top of this and as a consequence, data linked to science, being positive or negative, are in most cases not reported by science writers, but are first reported by general journalists. The first reports, as we know, set in most cases the tone and the trend as to how the topic would be discussed in the media from that point onwards. When science writers and scientists, especially in cases where negative events are reported, start to discuss and to reflect on what has happened, the first hype has faded and the interest of the general public has already turned to the next topic. So, the next challenge we are facing is to prepare our scientists for this new world of communication, be it scientific communication, or communication with the general public.

And there are many other challenges for scientists and for the science system that should be discussed, but I myself will concentrate now on my last and final point: the education of our young generation. It is general knowledge, but not yet on the political agenda, that the number of young people who are studying natural sciences – in Germany we call it “MINT” (mathematics, informatics, natural sciences and technology) – called “STEM” in the Anglo-Saxon world, standing for science, technology, engineering and mathematics – is diminishing. This is true for many countries where today almost half of the young generation enrol at universities.

The desperate need of our science-based society for trained and educated young people, especially in the fields of “MINT” or “STEM”, has now become an important economic factor. And in this situation, scientists as well as scientific organisations have to think and act carefully in order to find ways to increase the desire of young people to go into these fields and to stay there, especially in engineering, where a high amount of beginners – after some time – leave their studies and do something else. Thus, motivating and retaining the talents is an important aspect we have to deal with. At the same time, we also need a fresh look at how to improve the skills of students in the fields of humanities and social sciences. Here, I feel, a major issue is not the number of students, but rather their attitudes, their preparedness to cope with new challenges in their disciplines.

Ladies and gentlemen, I think with this array of needs and future needs yet to be determined, I have now somewhat prepared the floor for the

discussion on how academies and foundations can contribute with-in the focus I have chosen. As President of ALLEA, I ask for your understanding that I first start with academies and the role they can and should play in the context I have discussed.

Academies, if I start with the old Greek academies of the Platonic type in the 4th century before Christ, were places where the independent and undistorted search for truth could take place. They were places where individuals could follow this mission in a secure and trusted surrounding. This idea and principle was somehow forgotten until the times of the Renaissance and Enlightenment at the beginning of the 18th century, when this idea was rejuvenated. The Lincei Academy (founded in 1603), the Leopoldina, Germany’s National Academy located in Halle nowadays, the Royal Society in London, and the Académie des sciences in Paris were the first modern academies created in Europe where scientists, independent from courts, could perform independent research. However, these academies only brought together the natural sciences and medicine. Gottfried Wilhelm Leibniz in fact was the first who felt that in order to improve the “*conditio humana*”, one needs all sciences that should work together in order to combine “*theoria cum praxi*”.

Leibniz did not place one discipline over the other – he wanted to have this combination, and he already knew that careful deliberation is part of our scientific duties, before and during the implementation of new ideas. A mission, ladies and gentlemen, that could not be better formulated in today’s world. Our host, the Lincei Academy, is in the same league. Academies and foundations have in common the autonomy to act and to preserve.

The autonomy of research and science is one of the great contributions that have altered and modernised the science system. Whilst the academies can provide a space where scientists can retreat and reflect on what they are doing, what they should be doing, where they can learn and train interdisciplinarity, where they can learn to understand the language used in disciplines outside their own, and where they learn to understand and appreciate approaches undertaken in other disciplines, foundations can, in a complementary way, also support scientists by offering them opportunities to retreat and to reflect in an interdisciplinary manner.

Both academies and foundations can define new topics which can be dealt with by the scientists – topics, which can be defined at workshops or congresses with a different level of publicity and also without publicity. This is a fantastic opportunity that foundations and academies can offer to scientists: to retreat and reflect. In many cases this is also an opportunity for interdisciplinary work as the basis for what we call “scientific advice”, both for the public and policy. The ability to take the different steps from information to knowledge and from knowledge to judgement is an opportunity often offered by academies and foundations in a similar way – an asset that is probably more important than ever.

Discussions in many foundations, but especially in the academies which are, for instance, brought together within by ALLEA – the European Federation of 58 academies in Europe – were instrumental in shaping Horizon 2020 in Brussels, especially in creating a new awareness for curiosity-driven research, interdisciplinarity, and for offering a “raison d’être” to give the humanities and social sciences a special chapter within Horizon 2020, which was, as I mentioned before, heavily debated for a long time and, as we all know, is not over yet.

In Brussels, we still find people who try to minimise and sometimes trivialise the contributions of the humanities and social sciences towards coping with the challenges ahead of us and ahead of Europe. Without the help of foundations or private donors, as we recently also learned from our American colleagues, curiosity-driven research, especially in the humanities, would severely be hampered in the United States.

If I look at the work of my academy in Berlin, the edition of Friedrich Nietzsche and the new editions of Immanuel Kant or Gottfried Wilhelm Leibniz would not have been feasible without the generous donations of foundations – supplementary to what the government is doing in an exceptional way in my country.

How do we create new ideas and new initiatives in our sometimes rigid academic system? How do we bring in new ideas and help to make them become part of the institution? In many cases, think tanks in academies and foundations can formulate new needs, and the advantage of foundations is that they can financially support and also sponsor or

endow chair programmes. All this can be achieved, and is being achieved, by foundations.

There is one minor concern, however, that I would like to raise: sometimes I feel that in recent times foundations have started to formulate their own programmes more and more, and support only topics that fit into these programmes and which, by nature, might be even narrower than their missions. I would plead that foundations remain open to applications by scientists who are trying to follow ideas that are clearly far away from the mainstream and are clearly risky.

Yes, I do appreciate the fact that foundations already take more risks when funding research as compared to governmental funding agencies, but this is exactly what I am asking for: maintaining this attitude towards sponsoring non-mainstream and therefore uncertain projects. This is where the scientific adventure is, and where the borders of current knowledge are. And in the words of Francis Bacon that means: “As the birth of living creatures at first are ill-shaped, so are all innovations”. This is where foundations can have the highest impact – not by filling gaps left by governmental systems but rather where we open up a new world, where science is, at its core, questioning existing knowledge, widening the horizon, crossing borders of disciplines and knowledge, and truly exploring a completely new approach and perspective. This is where transdisciplinarity can start, where scientists have the energy and the courage to make themselves vulnerable by leaving the safe harbours of their discipline.

Training our young scientists as scholars in what we call “soft skills” is not part of the classic government-sponsored curricula. Here, again, academies and foundations play a prime role in enabling both our young and seasoned scientists to cope with the new challenges within the communications system.

As we all know, in modern societies scientists have to defend why and what they are doing more and more, and normally they are not trained in this field. Therefore, enabling our scientists to fulfil the different roles a scientist has to be skilled at is a wonderful area where we as academies and foundations can truly help. Actually, to what extent this is already being done is amazing. Best-practice examples are available!

What we have not managed so far is how to “train” the public to listen to scientists carefully and also prepare them to follow more complex sequences of thought. How can we teach the public not to stop at a certain level of information, but to try to accompany scientists on the complicated journey towards knowledge and judgement?

Again, this is a badly needed field of activities for academies and foundations. Here they can join forces and work towards creating new procedures for public deliberation. This is one of the pressing necessities if we want to bridge the gap between what science knows and needs to do and what the public understands and wants and needs to judge.

Finally, and again, I think foundations and academies were the first to analyse and to react to the need for increasing the awareness and preparedness of young people to study “MINT” and “STEM” subjects. A lot of initiatives have been taken, already starting with young children in kindergarten and continuing in primary school, where, as I see it, the main topic is not to reawaken interest in natural sciences, but to try to maintain and kindle what is already there. There are effective programmes at the ages when secondary education takes place, but what we lack are programmes for training the trainers, meaning for teaching the teachers. We have to direct more awareness towards enabling the teachers, who, in many countries, or, I would say, in most countries, are left alone and do their training individually. We need systematic programmes to modernise their knowledge, their teaching practices and, in some cases, their motivations as well. The burden teachers are carrying in today’s schools is largely underestimated and they are often underpaid.

And if this is true in rich countries, how difficult is that situation in poor countries? Especially in Africa – a continent, which is now coming more and more into our focus, where we need to carefully consider providing help if we want to stop the exodus of educated citizens from those countries. And here, the Lincei Academy, which is hosting us today, is already at the forefront of designing programmes, and we all hope that Europe is wise enough to support these activities because what we can achieve with these programmes directed and invented by scientists is economically favourable when compared to the costs which occurred if we do not react.

Early reaction, prevention, and signalling where new needs are identified, bringing them to public awareness, and providing some funds for those new ideas – this is where academies and foundations join in. But foundations, due to their financial resources, can play an admirable role in implementing ideas and bringing concepts to fruition.

Finally, I believe: joining forces between academies and foundations is an asset, which can and should be exploited more. We can all learn from the cooperation of the Balzan Foundation and the Lincei Academy.

Thank you for your patience and congratulations to the winners of the prestigious Balzan Prizes.

Enlightenment: a matter of urgency

MacCormick European Lecture

Royal Society of Edinburgh

Edinburgh, 4 November 2015

Dear Dame Jocelyn,

Dear guests and colleagues,

It is truly a great honour, and at the same time a great challenge, to present this esteemed MacCormick European lecture at the Royal Society of Edinburgh, a place where David Hume, Henry Home, Adam Smith and John Millar represent a radical new way of thinking – what we call Enlightenment, and especially the Scottish Enlightenment according to William Robert Scott. It is also a place where highly esteemed colleagues – I may even say friends – at the Royal Society of Edinburgh are present, with whom we, at ALLEA, and I myself, have developed wonderful working relationships. So, truly, I do feel honoured and at the same time humbled in this “hotbed of genius”, as Smollett once wrote. And for this lecture, I also try to follow the words of David Hume, namely to “speak without vanity”. And although I will not speak about “My Own Life” I stand here before you with empathy and with strong beliefs.

Distinguished guests, I will speak to you about Enlightenment, or Aufklärung, as we call it in Germany. In this lecture, I would like to show, with a few sketches, why I believe in what Kant once said in 1784. He stated: “We do not live in an enlightened age, but we are living in an age of Enlightenment”. In German, it reads: Wir leben nicht in einem aufgeklärten Zeitalter, sondern in einem Zeitalter der Aufklärung. And with this statement, he indicated that enlightenment is a continuous process and not just an epoch in the history of science and philosophy. But

nevertheless, there were tendencies, especially in Germany, to think and speak negatively about this ongoing process. Therefore, Ernst Cassirer's *Die Philosophie der Aufklärung – The Philosophy of the Enlightenment* –, published as late as 1933, was apparently a necessary apology towards the Enlightenment. Thus, the idea of Enlightenment has indeed remained a relevant and complex topic of discussion for centuries after it began to take root in our society. Here, it is perhaps worthwhile to quote Cassirer, who, as he exchanged arguments with Heidegger, said: “Die Philosophie hat den Menschen soweit frei werden zu lassen soweit er nur frei werden kann.” Or in English: “It is philosophy’s task to allow mankind to become as free as mankind can possibly become”. And this, of course, is Enlightenment in its very essence.

But let’s go back to Kant. His wisdom to describe enlightenment as an ongoing – and I would like to say everlasting – process is fascinating. And so, in my lecture tonight I will try to give examples showing why I believe that the continuous process of enlightenment is a matter of urgency.

Jean Mondot recently described convincingly that Enlightenment, Aufklärung, and Lumières were not only different names for the same grand idea, but that the Enlightenment was also an interdependent, decentralised and hence truly European process. There was not one single source or one single event which brought about this philosophy, this mental attitude, and this new behavioural attitude.

Rather, it was a progressive change, which took place in the mindset of the people by slowly spreading across Europe, thereby deeply influencing their behaviours. And it was probably only at the end of this development process when the semantics, specific expressions, and the language of the Enlightenment became a common heritage. It was therefore a truly – even in modern terms – European process because it is and was multifaceted. It took place at a different pace in regions all over Europe. It was not restricted to national borders. The ideas sprouted up in all different places. It was a process that resulted in those values which we now call “common values” all over Europe, and it is therefore part of our cultural heritage. These values have to be clearly defined and carefully defended as part of

our pan-European identity, especially in view of our initiatives to integrate so many new immigrants who are currently seeking to build new lives in Europe. The existence and “tolerance” of Parallel-Gesellschaften as we call it in German (societal groups which exist in parallel simultaneously) is not what we in the European Union should strive for – rather, we should strive for integration, respect, and togetherness. Therefore, teaching these values is a must.

It would be remiss of me to forget that there was a specific Scottish element to the Enlightenment, namely, the belief in, and the working for, progressive change in society in the field of economics, including elaborating a theoretical basis. Here I would like to quote John Millar, who was then Professor in Glasgow: “Commerce and manufacturers assumed a new aspect, and continuing to advance with rapidity, produced innumerable changes in the state of society, and in the character and manners of the people.” And David Hume’s suggestions that civilisation, civility, and civic life were all parts of one piece, that sociability and humanity encouraged “laws, order, police, [and] discipline”, and that it was in “polished” ages that industry, knowledge and humanity were interlinked by an indissoluble chain also reflect this belief. But although the Scottish contribution to the Enlightenment was essential to its development, I would nevertheless like to come back to my notion that the Enlightenment was a truly European process, not restricted to national borders. Roy Porter confirmed this in 2000, when he wrote: “To draw rigid distinctions between the English and Scottish Enlightenment traditions is anachronistic, largely because such a delineation merely reflects later nationalisms. In philosophy, moral and natural science, the common ground between those north and south of the Tweed outweighs the contrasts.” English and Scottish thinkers were thus in constant dialogue and, as Porter wrote: “Being cosmopolitan counted for much with the enlightened Scot.” Interdependence was, again, the leading phenomenon underlying many or most of our European historical processes.

One major element of the Enlightenment was the development of the natural sciences and also the foundation of what we today call academies. Again, a slow development, it started as an almost “invisible college”, with

a clear methodological conviction and a ground rule, namely empirical proof, clear evidence and proven evidence as the principles of science. This is how the Royal Society of London was founded in 1660. The idea of organising science in a completely new way spread into France, where, six years later, the Académie des sciences was established. But in all fairness, four physicians had some time before – in 1652 founded the Leopoldina in a small German city called Schweinfurt.

But again, the creation of academies was a decentralized but common interdependent process within Europe. And it must be acknowledged that it was Newton who had probably the strongest impact. It's true that Galileo and Kepler had already come up with the idea of basic laws - we call them *Naturgesetze* in German - but it was Newton, with his observation of gravitation, who could really prove the concept of basic laws. And there is no doubt that the natural sciences clearly dominated the field of science in these years and therefore the foundation of many academies. The reorientation towards humanities and hence the decision to bring together all scientific aspects and promote them, thus became the leading idea of Leibniz, who in 1700 created the *Kurfürstlich Brandenburgische Sozietät der Wissenschaften*, known later on as the Prussian Academy, and today called the Berlin-Brandenburg Academy of Sciences and Humanities, my academy. Allow me to clarify: When I speak of science, I mean "science" in the German sense, which includes both natural sciences and humanities.

Therefore, we have different elements which were at play in the early years of the academies. First, the natural sciences and a new understanding of science with the mandate to prove evidence. Second, the idea of Leibniz: interdisciplinarity, to bring all disciplines together if science seeks to contribute to the welfare of human-beings. *Theoria cum praxi* was the buzz word of Leibniz' academy in Berlin, which inspired the academy of St. Petersburg and then of Vienna and many others. But just to complete the picture of academy missions, the National Academy of Sciences in the United States to our west was created specifically to come up with policy advice, and to the east there is the Soviet type of academies that functions more like a huge research organisation than an academy as we tend to understand it.

I truly believe that the core mission of academies is to stand up for excellence and for the methods and means to produce evidence and therefore to carefully watch that the necessary conditions are created and maintained in order to secure these principles. And just to quote John Millar again, the "independence of the inquiring mind" is what we need and what academies should have and already have in their "genetic code".

The essence of science is also, of course, critical thinking. When Kant said that our days are the days of critique, this truth still prevails. It is the preparedness to always question, to always try to falsify whatever we take as solid knowledge, to overcome firm beliefs and myths, and to be empathic and pragmatic at the same time when counselled. So, my modified mission statement for academies is: academies are there to fuel the ongoing process of enlightenment – that is the empathic part. Now comes the pragmatic part: there are quite a few obligations that come with this mission. For example, the obligation to preserve the "independence of the inquiring mind". Is this principle in any way threatened in our Europe today? Well, I am not an alarmist, but I do see certain trends. Take the issue of the GMOs, or genetically modified organisms, and in this case, crops. Then look at this case in Germany, where it has become impossible to create those genetically modified organisms in the first place. It was a rather small group of people who led a movement, and later NGOs, which impeded this development. The reasons they brought forward were hypothetical, but nevertheless interesting concerns, namely a loss of diversity, amongst other risks such as health problems. These concerns were considered, but rejected by nearly all scientists, because all the safety studies which had been conducted in those days did not reveal any risks of this kind. But since the scientific evidence was not based on a truly long-term study, the voice of science was based on preliminary evidence and a subsequent educated guess on the long-term developments.

Now, after many years of research and long-term studies, it can be stated that we do not see a negative impact at all from genetically modified crops. But in the meantime the argument has changed. Arguments from the natural sciences are no longer relevant. Now, the socio-cultural attitude is

the basis for rejecting genetically modified organisms. And it is tied to a self-fulfilling prophecy as a means to claim evidence and justification for certain measures – namely, that GMOs have been negatively perceived in society for so long that this mindset has become its own truth, leading to the banning of the GMOs. The case I am making is not that having genetically modified organisms is a must. I am instead attempting to show how society at large has distrusted and even negated the concept of scientific evidence. I am not criticising asking legitimate questions. The result of questioning certain conclusions in the quest to arrive at fair judgements must, however, not be to negate evidence which is already there and to preemptively negate evidence which has to be created. In this case, NGOs have led policymakers in some countries in Europe – Germany especially – to blockade the scientific and commercial development in a potentially relevant field for a long time. Today, 17 countries in the EU want to follow this route. This is the political reality. And this reality asks for broader interdisciplinary scientific advice, in which fear of unknown possibilities and dangers of the worst scenarios are included. Real enlightenment is not only the sum of the figures and graphics, but includes all aspects of people living with unknown and unforeseen changes. It supports us in coming to judgements.

Recently, an interesting study was published in Germany. In this study, 50 politicians, journalists, and members of non-governmental organisations were interviewed, and following these in-depth interviews there was an online survey answered by 1,000 citizens. And I must say, quite interesting results emerged. You might have heard of the German Energiewende, or the shift towards renewable forms of energy. It is a project with top priority where our academies are heavily involved in order to give advice on what has to be done to achieve a real Energiewende. 80% of all study participants were clearly in favour of the Energiewende. But, at the same time, they were also adamant that there must be no increase in the financial burden. Well, as we know, this is a very paradoxical situation, because logically these results do not really work together because they are based on two conflicting opinions. Another interesting point: 60% of people buying their meat in discount shops at a low price very clearly

voted against mass production of meat. There are many more examples of this type. It's a great paradox between opinion and behaviour. The novelty of these results is not so much that these strange things happen. The new development is more that many people do not feel uncomfortable with these conflicting attitudes, and therefore, do not try to resolve them. This is a new challenge if we truly want to give scientific advice that can be used and applied.

The next surprise in the study was: Yes, people tend to have trust in experts. But in the study, the use of the word “experts” was somehow blurry, because people did not value experts who came from scientific institutions. These were just called “experts”. Are they self-declared experts without the quality assurance lent by scientific institutions? Are they talking about their own subjects and how do they do that? It was amazing to see how much trust is given to those who are directly involved in issues and furthermore show emotions about them. Neutrality is not a leading concept any longer. The media tend to promote controversies with firm one-sided opinions. We can lament about these results – but what really has to be done is to stand up and show and prove that scientists and their organisations can regain and win the trust of the people. As the study clearly shows, “trust is the leading currency” people are using.

Here, again, the role and the mission of academies is obvious. Starting with Millar's notion of the “independence of the inquiring mind”, not only the academies, but especially academies have to work harder with their proven and, in many countries, guaranteed autonomy and independence. It is no longer good enough to assemble new information and technical facts, but we must also help to interpret these facts, put them in context with evidence from other fields, and offer problem-solving options. And this has to be done in a way so that the wider public and policy makers can create solutions based on knowledge and not on ideology and, occasionally, false hopes.

Here, the concepts of interdisciplinarity, of independent inquiry, and of the independent presentation of facts are empowered by, and sometimes were introduced by, the concepts of the Enlightenment. The heritage

of the Enlightenment is that exact sciences, and especially the natural sciences, also the social and economic sciences (especially thanks to the Scottish influence), became dominant factors to explain our world in order to redirect behaviours. Education and the trust in one's own capabilities led to a movement which is still ongoing, namely to try to understand, interpret, and analyse our world and subsequently alter it. The founder of my Academy, Gottfried Wilhelm Leibniz, clearly had the vision that science could improve the *conditio humana*. And it was the philosopher Jürgen Mittelstraß from Konstanz who noticed and named the process of the creation of a "Leonardo" world, a world which, to a large extent, is man-made and based on science and technology. This process is irreversible, and hence it is obvious that we have an ever-increasing obligation and responsibility to shape the future of this, I should better say, our world. Whatever the outcomes of what we have achieved and will achieve might be, our world can only truly be mastered with more and better information. The point, however, is that information alone does not suffice. The information must be transformed into knowledge. And this is why the word of Immanuel Kant remains true when he said that we do not live in an enlightened age, we live in an age of Enlightenment. It is an ongoing process. Religious movements, in the meantime we could say religious battles, the existence of authoritarian states, and the movement of post-Enlightenment in the United States and post-humanism activities all clearly show that Enlightenment is actually a matter of urgency.

The case of modern medicine is an excellent one to demonstrate the sequence from information, probably not immediately to practical solutions, but rather to more "wisdom". Modern medicine first started with understanding more and more about the anatomy of the human body – and we recall the enormous pushback against this science at its infancy – and then functional aspects of the organs were revealed – remember Harvey's breakthrough work on the heart and blood circulation – followed by surgical and later pharmaceutical developments: the basis of modern medicine.

Eventually we crossed borders again and created molecular medicine with

the elucidation of the human genome, creating completely new avenues of medical intervention. I refer to genome editing, or the so-called CRISPR technology, for precise gene surgery. And, at the same time, we developed and are still developing what I would call "wisdom". We reflect carefully upon ethics and we have very open and thoughtful discussions on what should and should not be done. Here, I would like to add: what should not be done yet! Voltaire already reminded us that it can be as critical not to act as it can be critical to act. But the progress of knowledge is so tremendous that it has become impossible to predict exactly what will come next. So, instead of pre-emptively taking "go and no-go" decisions, we work with the concept of ongoing and carefully led risk-benefit analyses (a concept not yet fully implemented in all fields!), which must be – and are – constantly refined. And if the issues are too complex, we can work with the concept of a "moratorium".

The famous Asilomar moratorium in 1975 at the beginning of the era of biotechnology and gene technology, when scientists decided to halt experiments and instead first reflect on necessary guidelines, was such a case and currently quite a few scientific organisations and, of course, academies propose a new moratorium for the CRISPR technology for precise gene surgery, a technology, which allows us to very precisely cut out, silence, and exchange genes that are directly responsible for a genetic disease, an improvement of the so-called somatic gene therapy. Since this development opens up the possibility to also do this at the level of the germ-line and not only in diseased cells, a new door has been opened. The germ-line is the "genetic book" of us which is passed on by our ancestors to us and which we pass on to our children. Genome editing is a new method which can alter our "genetic book" for generations. What kind of participation in this development and what kind of rights should be ascribed to the next generations? What does this mean for the highly elaborated concept of "informed consent"?

But this technology does offer a fascinating opportunity to eradicate Erbkrankheiten, or inherited diseases. For years, we scientists all confirmed that we would not touch the germ-line. We would only correct genes in

so-called somatic or diseased cells. Then we cemented this conviction in our laws. Now, we have a real opportunity to correct dreadful inherited diseases. There is no simple answer available. Currently, we can still use the argument that the technology is not advanced enough to do this. But for how long will this argument be valid? Therefore, we should use this time to carefully reflect on what to do if this argument becomes outdated and the technology becomes advanced enough to go further. Thus, the moratorium is a must and a means to use our new knowledge in order to take the next step towards wisdom which could then be the basis for a better, modified, or new, attitude towards the concept of the humanum.

Academies have a definite obligation to care about those pressing issues. Yes, we can ask for a moratorium, which is probably an appropriate signal. But we also have to create mechanisms to steer the process of answering, or partly answering, the questions involved with this new technology. Again, I am confident that we will find solutions. We will most likely propose conditions and guidelines for how we should proceed for the sake of mankind. And again, we have the same sequence. Let's first use the comprehensive and independent critical approach to understand what we have and what we know, and afterwards clearly delineate what we have yet to do and what further information we need to know soon. And finally, we must instil a practice of risk-opportunity evaluation as we go forward. Technological developments in these days are such that it is very difficult to predict future developments. And therefore, we have to establish and refine ongoing risk-benefit evaluation procedures which help us to steer the way we go. Academies, again, have a prime role to play in this sequence due to their interdisciplinarity and their independence.

Without more and more interdisciplinarity, this pathway from information and knowledge to wisdom is not feasible. You can hardly accelerate progress in medicine, for example, without incorporating knowledge from practically all other scientific fields. This is what we call the interdependence of the sciences. But even this interdisciplinarity will not be enough to truly move forward. We also need the inclusion of the wider public. We need their understanding of our methods and their willingness to take

part in these pragmatic discussions. In the aforementioned "Leonardo world", science not only dominates and steers the progress, but also has to help to develop our society by promoting what former President of the European Research Council Helga Nowotny calls "scientific citizenship". Because in those "big challenges", which we also find outside the fields of medicine and health, the wider dependence between science and society has an enormous impact and needs a new understanding – even a new "social contract". Who will represent the civil society and how will it be represented in these discussions of fundamental importance – such as that of genome editing – for our future? NGOs and the political parties of today will probably be involved in a kind of intermediate step towards new models of interaction with the wider public which have to be created. This is a new challenge and a new opportunity – but an opportunity for academies as well.

Due to their inborn interdisciplinarity and their obligation, motivation, and ability to reflect on these developments, they are an important place to follow up on modern developments and carefully weigh their pros and cons. This is the point where academies fulfil and, among other things, find their *raison d'être*. To a certain extent, they are the place where the reflection on the interdependence between science and society is taken as a "grand challenge", but they must pursue this reflection even more and help find new formats of interaction with the public and new ways to achieve better inclusion. For me, C.P. Snow's paradigm between the two cultures of the natural sciences and the humanities has to be updated with an earnest attempt to bridge the gap, not only between these fields, but also between scientists and the wider public in this "Leonardo world" that is not only irreversible, but also rapidly progressing. Because what Maxine Singer wrote in 1977 is still true: "It should not be surprising if deep fears and ambiguities arise in the minds and hearts of those who suddenly learn the depths of modern insights into the nature of living things".

After having discussed these examples, it is obvious that John Millar's "independent inquiring mind" is at the core of who belongs to academies and hence what academies must do. And this independent mind is not

restricted by disciplinary borders, not narrowed by majority trends, and, in best cases, not really influenced by what we today call “political correctness”. In our days, this latter aspect is especially important. Allensbach, a leading institution for public opinion research in Germany, recently looked at what appeared to be majority opinions in social media and contrasted these views with those expressed by people when approached using the classic methods of polls and surveys. Remarkably, there was a marked difference between opinions expressed in social media and opinions expressed by people on the street when asked important political questions. So virtual majorities, or majority opinions expressed via social media, do not always reflect what people really think in the broad context. And thus, academies must continue to work independently of these external influences, uninfluenced by political trends or public sentiments. Whatever other obligations academies have, the ultimate goal must be to receive critically needed trust: trust amongst the scientific community, trust amongst the wider public, and trust vis-à-vis the politicians with whom we talk. And trust, I believe, comes from independence, quality and excellence, and honesty.

When academies give advice, it must be very clear and transparent that the advice is based on facts, or what we call solid evidence, and it must also be clear where the limits of this solid evidence are, and where the educated guess begins. We should never forget to also make clear that there are divergent opinions. They might not be shared by many scientists, but nevertheless, in the end minority views could still be proven as the correct interpretations. So, when we give advice to the wider public or to politicians, we should follow a few simple rules which can be - and are - significantly elaborated, but in fact, it really comes down to honesty, reliability, critique, self-critique, and hence, virtue (as already postulated by Kant). For a long time, scientific advice, when addressed to political decision-makers, was confined and, I would rather dare to say, reduced to disciplinary advice only. Eventually, the concept of Technikfolgenabschätzung, as we call it in German, was created when scientists began looking at the consequences of certain technological developments.

For many years, this determined the sequence of how we approached

scientific advice. First, the technological progress was established, and some years after the implementation, the reflection on those societal consequences beyond the technical solution ensued. Today, both science and the world have changed. Our discipline-organised scientific world was highly successful. But it is no longer good enough for advising in complex situations. I have already made the case for medicine, and the same is true for big challenges like climate, migration, poverty, water, just to name a few. The processes of creating technology and evaluating societal consequences must be parallel, interactive, and interwoven in order to provide the most comprehensive and effective scientific advice. People do expect this approach to giving advice from the academies. Yes, many people appreciate social media and many of them take part in it. But when it comes to serious questions and highly relevant issues, those tweets and blogs might help to find questions or identify certain arguments. But firm beliefs, unbiased guidance and finally trust can be created by carefully designed and thoroughly reflected upon statements produced by academies such as the RSE.

Once upon a time, academies were part of federalist systems with the aim of bringing together the best minds, in many cases in a regional context. And they also distributed and commented on new knowledge, working as a kind of “opinion broker”. Today, scientists work together globally. Science is global and the challenges we face are global in their nature. And therefore, academies have to follow this principle. They still have to be regional and, at the same time, they have to be national as well as supranational. And this is another reason why academies are so important. In the 1990s, when the European Union became more and more of a societal and political reality, the academies also came together and created the All European Academies network, ALLEA, the network to which this academy belongs, my academy belongs, and where I am grateful that the Royal Society of Edinburgh plays such a prominent and helpful role. This network of European academies has understood the challenges, but also the opportunities of working together at the European level. And, of course, ALLEA is now working within not only a regional and European but also a global network.

For the moment, let's concentrate on the European network. An interesting point about ALLEA is that we do not only include the national academies, we have all types of academies and learned societies. In Great Britain, for example, our members include the Royal Society, the British Academy and the Royal Society of Edinburgh. We are now also in contact with the Learned Society of Wales. So, we try to listen to as many opinions within the academy system in Europe as possible. A second feature of ALLEA is that our network is not restricted to only those academies from countries that are part of the European Union; instead, we focus on all countries that belong to the Council of Europe region. So, when new states do join the EU, this will take place within the Council of Europe. And when this happens, we will be already there with our ALLEA network.

In these Council of Europe countries, we support and underline the principles that we believe are within the genetic code of academies. And we help the academic communities in many of these countries to build more elements of autonomy, independence, and quality assurance into their academic systems. In a few countries of the Council of Europe, for many years the aspect of autonomy, or the "independent inquiring mind" in particular, was not the leading principle.

So, the mission, in fact, is that when it comes to finding answers to pressing societal and technological questions, we give guidance to the general public and to policymakers. This is what we now also strive for on the European level. Next to ALLEA, there are four more academy organisations in Europe: EASAC, comprising national academies within the EU; Euro-CASE, the organisation of European engineering academies; FEAM, the organisation of European medical academies; and Academia Europaea, where eminent individuals from European countries are assembled. These five organisations have recently founded a consortium with the goal of jointly providing scientific advice at the European level and to European political bodies.

It is true that the complexity of developing consenting opinions increases if you seek common positions among the 57 academies that are members of ALLEA, and then with the other four scientific organisations in our

consortium. At the European level, the political consensus has to be found anyway. Our firm belief is that it is better if some of the decisions have already been prepared in the scientific community beforehand by presenting options. And if this can be done by European academies, together with the European Commission and the Parliament, it is better than if, for instance, the individual Parliamentarians were to first take the advice they receive from the national academies and were to then try to find the consensus on a political level (especially on science-based issues).

But the task and coordination amongst these five umbrella organisations of academies sounds more complicated than it is, because in many cases, scientists are already members of at least three of those organisations. I myself, for example, belong to four of those five organisations, and many of my colleagues here at the Royal Society of Edinburgh have exactly the same background.

The Commission in Brussels likes this positive attitude. Because the Commission is the target of so many so-called "lobby groups", they are very interested in the idea that the academies' consortium brings together a couple of thousand of the best scientists from all over Europe. They call this project the new "scientific advice mechanism", or SAM. SAM is the answer to the criticism which the Commission, and especially President Juncker, received when he allowed the position of Anne Glover, a fellow of this academy, to expire last year. We were all rightly upset when the post of a scientific adviser to the Commission was cancelled, and we were also shocked by the way the case was handled. And we were all protesting because we immediately realised that a European Commission without a source of scientific advice integrated into its power circle would not be good enough to arrive at the best evidence-based decisions. And now, SAM is going to be installed.

It is interesting how SAM is constructed. First of all, seven people will belong to what is called the High-Level Group. This High-Level Group will hopefully consist of seven eminent scientists who are currently being identified by a search committee under the leadership of Sir David King, a former scientific adviser in Great Britain. And this High-Level Group,

again, will ask for and will receive advice primarily from our academies' consortium. When the academies cannot, or do not want to, respond or engage in certain cases, then the members of the High-Level Group are of course also free to search for advice within their own networks and amongst other organisations.

And SAM, ladies and gentlemen, is a fantastic opportunity – and, in all fairness, there is also a realistic chance to fail, because we must organise ourselves in such a way so that we can be effective.

Ladies and gentlemen, I would like to end by addressing another task that academies have. ALLEA and the Union of German Academies have recently, with the help of the German government, investigated research projects, which are currently underway, mainly in the fields of humanities and social sciences, by European academies and related organisations. And it was quite interesting to see that most of the academies perform research projects, which I would like to see undertaken under the common umbrella of ALLEA. These projects are largely devoted to the observation and interpretation of our cultural heritage, in many cases European cultural heritage, but also beyond Europe. In Germany, this task was initiated early on by Mommsen and Niebuhr, and I think almost all academies in Europe have a tradition of investigating our cultural heritage, a task which I am convinced is important and of high relevance. And the investigations we made in our survey clearly showed that there are clusters of these topics such as religion, migration, history, and language. And of course, many scientists working on those long term projects are in touch with scientific colleagues all over Europe and beyond. But – and this is an interesting point and furthermore the idea behind our investigation – one could easily see that certain topics would benefit from a stronger pan-European collaboration or cooperation agreement. Since many of these projects are funded poorly, it would of course also be of interest to receive European funding for European projects preserving and interpreting European cultural heritage.

And this is what must be done in the future. If we believe in Europe, and if we want to further build Europe, we need to think very carefully

about our cultural heritage. It is probably the best clue for successfully bringing European countries together in our Union. If we accept that the decentralised concept works best, when we become aware of the interdependence amongst us and that this interdependence is not only economic, technical, or monetary, but is mainly driven by our cultural heritage, then, I believe, we can take the current European crisis as a driving force to restart our efforts based on the knowledge of our common heritage, our interdependence and our values, to work harder to strengthen what has once been called the “soul of Europe”. We know how deeply our European cultural development was – and still is – dependent on the exchange with extra-European cultures, and we know that there is also an interdependence between science and art encompassing our life in the Greek sense called bios, where nature and culture are unified.

This closeness and interdependence is a mandate to care for our common cultural heritage. Therefore, what is currently happening in Syria is not only hurting their cultural heritage, it is hurting our cultural heritage and hence also affects our deep roots of identity. This area and the current crisis is no longer a regional, far distant event, but it has physically and mentally become our crisis as well. I do believe that this crisis will not be overcome by new walls (even the so-called “eternal wall” in Berlin fell after 40 years). It can only be overcome if we accept our interdependence with this region and jointly find new solutions. A dissolution and a weakening of what we in Europe have achieved so far would not be the right solution in a global context. Europe has always been an entity without truly concrete and permanently fixed geographical borders. It has always been a space where common values, as outlined before, were the basis for an otherwise diverse and far-reaching community. It is this enlightened understanding, it is this concrete knowledge about our roots that make academies especially suited to engage in, and also be responsible for, not only science diplomacy, but equally the preservation, interpretation and making available the essence of European unity and our responsibility in a global, rapidly changing, challenging and rewarding Leonardo world.

The Academies' role in the course of history: responsibilities and principles of academies in the past and present

175th anniversary of the Serbian Academy of Sciences and Arts

Belgrade, 2 December 2016

Dear President Kostic,

Dear Chairperson,

Dear Members of the Serbian Academy,

Distinguished guests,

Ladies and Gentlemen

I do not think I need to tell you this, but not least since the US Presidential Election last month, the world seems to be changing rather quickly. Our fondly enjoyed existence in a peaceful Europe, and indeed the world, is challenged like it has not been for decades.

The Serbian Academy, ladies and gentlemen, has in its 175 years of existence seen good days, but also experienced some dark days. Political upheaval does certainly not come as a stranger to this house and the people within. However, this academy is but one of many of its kind throughout the continent, built on the same foundations of Enlightenment and the ever-continuing quest for truth.

Ladies and gentlemen, it might be time for the academies to embark upon a new quest to face modern challenges. Buzzwords are policy for science and science for policy. Therefore, it is of utmost importance that we work together. We need to stand for scientific excellence and we need to embark on interdisciplinary work across Europe. In this endeavour, we need to adhere to and fight for the autonomy and freedom for excellence in research.

I will say a few more things on those current challenges and how I believe we should tackle them later on, but first, I want to begin by taking a trip down memory lane to remind us where modern academies come from, and also to remind us that we, as academicians, need to be humble and modest in the pursuit of our work. To quote Newton: “We all stand on the shoulders of giants”, and we need to make sure that future generations will be able to say the same about our current generation of scientists. I say this not without worry, looking at the seismic shift in politics and its undeniable implications on the appreciation of science we are witnessing right now. This past summer, we have heard UK Minister Michael Gove somewhat infamously claim that the British people have “had enough of experts” in the run-up to the UK referendum on UK membership in the EU. Needless to say, the result and its effect on UK and European research is troubling indeed. Shortly after, an attempted coup d’état in Turkey led to grave upheaval in the Turkish academic system. This summer really had it all, except, unfortunately, a solid appreciation of science.

The search for truth, ladies and gentlemen, has always been at the heart of an academy’s value, going all the way back to Plato’s famous Academy in the 4th century BC. In times of often conflicting and overwhelmingly complex issues, it is this independence and impartiality that should make academies a trusted associate to help shed light on contemporary issues.

This was true in Plato’s times, but for a long time during the Middle Ages these were forgotten, and it was only during the Renaissance that the idea of Academies was rejuvenated. Conflict, armed or otherwise, was an ever-present condition, and people longed for knowledge and guidance that traditional knowledge brokers, such as the church, could not provide. At times like these, when there is a sort of revolution in knowledge, a sudden diversity in opinion, academies can fill the void and can help us unite and embrace the diversity we have.

Now, to me, it seems we might just be at another one of those crossroads in history, and while I am currently talking about historical developments, I also want it to be understood as a warning, a warning to not let populist politicians twist science and history, or even outright ignore it.

We, as academies of sciences, need to be future-oriented. Let me illustrate what I mean by that.

In and after the Renaissance, where, to use a more modern term, human dignity evolved as a concept due to the emerging concepts of individualism and individual rights, together with opportunities in the sciences, there was a need to offer science - and I use the word science in the sense of the German word “Wissenschaft”, which goes beyond natural sciences, of course - a physical and intellectual space where researchers could work independently of laboratories sponsored by various courts.

So the beginning of the academies in the seventeenth and early eighteenth century was this desire for the autonomy and freedom of research. It was Gottfried Wilhelm Leibniz who in 1700 created his academy in Berlin, with a clear understanding that science has a great responsibility to help improve the *conditio humana*, which he felt would only be feasible by combining theoretical knowledge with practical needs and capabilities. *Theoria cum praxi* was his mission, and this has defined his academy, and indeed many of our academies ever since.

Today we would call this: “We have to stand up for the challenges ahead of us.” And since these challenges are multi-factorial and multi-faceted, an exclusively linear technocratic approach will not suffice.

We need all disciplines to work together, or, to put it in the words of my esteemed colleague Mittelstraß: “Whilst interdisciplinarity means that every scientist resides in his discipline and cooperates with the partner in the next discipline, transdisciplinarity means that they really cross the frontiers of individual disciplines.”

Now, when we look at Leibniz’s time and the challenges society faced in those days, there were conflicts and wars, there were existential needs, there was a wide gap between rich and poor, health was a major issue, nutrition and its distribution. Some of them are still just as relevant today, I believe you would agree.

If we list the major challenges of today, we can similarly start with conflict and wars. Military conflicts are, unfortunately, still not just a theoretical, but remain an imminent threat to countries with ALLEA member academies.

To see the results of armed conflict and an increasing global inequality, we only need to look at the abhorrent pictures coming from the southern border of Italy, Greece and Spain, but also from Serbia last summer, and

we will get an immediate understanding of what existential needs mean today, and we cannot close our eyes to these needs. Look at Syria! The fact that we know almost everything in our global village gives us an enormous appreciation of the fundamental importance of health and nutrition for our societies. But this rapid spread of information also increases the general feeling of unease many of us share about the current development of the world. Problems we may have remained blissfully unaware of only a few years ago, are now only one push notification on our phones away.

So we have challenges that are comparable to those in the 17th and 18th centuries, but on top of that we have new issues such as climate change, which is not entirely unrelated to migratory movements from warzones in faraway lands and regions with considerable poverty, energy security, cyber war and artificial intelligence, and – once again – a threat to personal integrity; challenges and issues that necessitate not either disciplinary excellence or careful transdisciplinary work: but indeed both! Neither of them can feasibly exist without the other.

Academies are in a great position to perform transdisciplinary research. However, there are certain principles and preconditions which need to be met in order for academies to succeed nationally. These principles are what ALLEA calls the framework conditions of science, most prominently these are impartiality, rationality, scientific excellence, but also the dialogue with our fellow citizens.

Several of these conditions are under threat, and often enough are ignored, or wilfully undermined, by governments or other actors. There is no greater danger to our own integrity than to not perform to the standards we have set ourselves, which is why we must oppose any developments undermining these framework conditions. I understand that we face challenges derived, not solely, but to a considerable degree, from new forms of instantaneous communications, which offer immense opportunities by connecting the world, but it also has an increasing detrimental effect on what one might call "rational discourse". An overexposure to information overwhelms many of us and our fellow citizens, in some cases leading to the misguided assumption that unchecked information received from the internet makes one an expert. In addition, emotions and feelings seem to have taken the upper hand over fact- and evidence-based arguments as recently as the US

election, but also here at home in Europe it is not an unusual sight these days. I might not be the biggest fan of the term, but post-factualism has certainly become widely used these days for many reasons, much to my disapproval I might add. For too long have we been comfortable in our ivory tower, marvelling at the beauty of science, but all too often we failed to engage with the people, to encourage their participation and a deeper integration of science into their daily lives. If we keep on ignoring this trend, we are in real danger of losing our *Deutungshoheit*, our prerogative of interpretation.

We are obliged to argue for ongoing enlightenment, to fight for the value of evidence-based arguments and facts.

But we also need to recognise something else: we, as scientists, need to keep up with the pace. Research cannot be restricted to the national level, for it will not achieve its full potential there. We must continue to think internationally, maybe even more so than ever before.

ALLEA as the European Federation of Academies of Sciences and Humanities is in the unique situation to be able to foster this international research community I just talked about.

We are, however, not an organisation of outsiders. Instead, we are made up of academicians, who provide their time and expertise to try to enable our member academies to identify potential cooperation partners across all European countries. Our working groups are a colourful mixture of some of Europe's finest scientists, working on some of the most fundamental and pressing issues in the science system today.

As an organisation, we comprise 59 academies from 40 countries within the Council of Europe region. This means we go beyond the political boundaries of the European Union, and we aim to include academies from all countries in Europe. We do this because we are firm believers of the intellectual prowess of each European academy, and bringing together scientists from diverse backgrounds often leads to new ways of thinking and, subsequently, to innovation.

ALLEA's membership is based on key criteria, such as interdisciplinary excellence, scientific autonomy, the academy's role in the national science system, and international collaborations. We aim to promote the exchange

of information and experiences between academies, and to offer European science and society advice from our member academies. Ultimately, we want to achieve excellence in science and scholarship, and high ethical standards in the conduct of research. It is our mission to contribute to the improvement of framework conditions under which European science and scholarship can excel and, simultaneously, we want to establish an understanding of Europe as a cultural and intellectual entity that is worth preserving and, in fact, now more than ever, worth pursuing.

We ourselves are also providing a wide range of analytical reports and studies via our working groups. To name but a few, recent publications were on “patent-related aspects of CRISPR-Cas”, “Open Access to Scientific Publications”, “Ethics Education in Science” and “Going Digital: Creating Change in the Humanities”. It is via these working groups that ALLEA actively engages in the advancement of the European Research Area, and in particular Horizon 2020. The working groups are looking at topics in intellectual property rights, science & ethics, science education, E-Humanities, but also the European Framework Programme. Almost all the activities of these working groups fall under the term policy for science. To give you one such example, the ALLEA Permanent Working Group on Science & Ethics, of which my trusted colleague Krista Varantola is a member, is currently undertaking the revision of the European Code of Conduct for Research Integrity. This code will serve as a reference document for future Horizon 2020 funding proposals, and we are also looking to circulate this document to our member academies, via another project called ENERI. This is but one endeavour in which we work towards harmonising the standards in the European Research Area.

To advance Europe as a cultural entity, we annually present outstanding scholars with the *ALLEA Madame de Staël Prize for Cultural Values*, which honours academic achievements on European culture. Recent laureates include Rémi Brague, Dame Helen Wallace, and Luisa Passerini. In addition, we have members of our academies take turns in editing a book series on “Intellectual Discourses on Europe”, the latest book is currently being prepared by Professor Albrecht Riethmüller, on “The Role of Music in European Integration”, and it will undoubtedly make for an interesting read. In at least one of the chapters, I am told, Serbian music will feature as well.

In addition to our more traditional work, we have recently started to get involved in the provision of evidence-based advice to the European Commission in the context of a project called SAPEA, Science Advice to Policy by European Academies. In this project, which closely works together with the European Commission’s new Scientific Advice Mechanism, SAM, we have joined forces with other European Academy Networks, namely Academia Europaea, EASAC, Euro-Case, and FEAM. We see this as a real chance to further improve the quality of EU policy-making. To us, the inclusion of our member academies via a bottom-up approach, where individual members can suggest policy-relevant topics, is also very important, and we hope to see many good proposals come out of it.

I want to emphasise that, for the first time on the European level, the European Commission is approaching academies to provide their expertise, and we are more than happy to jump on this task. If we can achieve a good cooperation and active engagement of our member academies, we will make SAPEA a success. I also want to make very clear that we not only see it as a chance to provide good scientific evidence, but especially, we see it as an opportunity to raise the profile of our member academies. Rest assured that this does not only include academies in EU member states. We will not care about that, the only thing that matters is the quality of the underlying research.

The provision of evidence based scientific advice to policy-makers, ladies and gentlemen, is currently in high demand as the SAPEA project shows, alongside similar initiatives in Europe and indeed worldwide.

While this is certainly a welcome development, there is one thing that we, as academics, need to remember ourselves, and which we need to remind policy-makers of whenever we get the chance, and that is the absolute necessity for the autonomy of science, its institutions and practitioners. All too often in the very recent past, we had to witness how scientists were instrumentalised or used as a scapegoat for things that were either outside of their control, or which had nothing to do with their work. We need to make sure that science can provide knowledge to society and policy-makers alike, but we shall never solely become dependent on their goodwill, for that would lead to scientific stagnation and a loss of trust in

scientific results.

This is why I urge you, ladies and gentlemen, to be watchful, as you know best when your scientific work no longer satisfies neutrality and impartiality, and do not be afraid to speak up when you witness threats to scientific autonomy. The support for good scientific practice is still in the majority, but a silent majority can, in these days of so-called “post-factualism”, no longer afford to stay silent.

In order to be successful in all the fields mentioned, we need to care about the existing members of our scientific society, and we also desperately need to care about our young and also female hopefuls.

Scientific excellence and the widening concept

Prague Forum on the perspectives of European non-university research beyond 2020

Czech Academy of Sciences

Liechtenstein Palace

Prague, 8 March 2017

1. One of the major trends we observe, as already outlined by my colleague Martin Stratmann, is that more and more disciplines have to be involved when it comes to solving issues. This not only shows that there is a sort of evolution of scientific disciplines, which allows to build bridges between disciplines, but, at the same time, it shows that science is really about problem-solving in that it addresses problems which usually go beyond the capability of individual disciplines. This is therefore one of the elements that I consider when reflecting on scientific excellence and the widening concept: how scientific disciplines are developing and becoming more interdependent in order to elaborate solutions to our most pressing challenges. Therefore, interdisciplinarity, or as Jürgen Mittelstraß would say, “transdisciplinarity”, is something that we have to adopt in our daily research life, and probably, even more importantly, in the design of our school curricula. And since we are in an academy, we should be very mindful that the word interdisciplinarity covers disciplines also from the social sciences and humanities, as we also advocate for in ALLEA. There is hardly any topic which does not touch upon our ethical values, our moral convictions. This is easily understood in the field of medicine, but the same is true when it comes to energy, climate, nutrition, as well as countless other existential challenges we have to tackle.

2. A second element for consideration regarding scientific excellence and the widening concept is the use of Big Data. We all agree that the overarching element to finding a solution to our most pressing challenges is how we can intelligently make use of the enormous amount of data

and information around us, being collected and being invented every day around the world, both within the classical scientific institutions, but also the knowledge which is developed outside, which is what I would call public knowledge, public intelligence, and not really public science.

3. Beyond interdisciplinarity and the challenges of Big Data, there is one aspect which I feel is of utmost importance when discussing scientific excellence and the widening concept. Within Europe not all institutions share the same degree of excellence. I am sure you would agree, unfortunately. But if we look at the research systems in certain countries, we can often easily identify areas which produce excellent outcomes, while the large proportion of research from those countries is not quite yet competitive enough compared with other European countries. This is particularly evident when we look at the grants distributed within Europe, through the European Research Council system, for example.

In principle, there are two ways to change that, if we really put our minds to it. The standards of excellence could be lowered to allow more institutions and individuals to participate in the race for money at the European level. Looking at international competitiveness, this is probably not the right way to go.

An alternative, which we at ALLEA consider more appropriate, would be that we create more programmes, which help those lower performing institutions structurally to become more competitive, by supporting them with technical assistance and expertise, and by enabling them to strengthen their international cooperation and partnerships. If we, for example in Germany, look at the international competitiveness of our institutions in the 1950s, and if we look at their competitiveness now, sixty years or so later, we can clearly see that things can be changed. So I would translate the widening concept into something like structural support programmes with competitive elements, to bring up more academic institutions to a level where they can truly compete in this European race, for example for ERC grants.

4. My final remarks refer again to academies. Firstly, in Europe, and especially within ALLEA, we do have different concepts of academies. We have the learned societies, we have the learned societies combined with

research institutions, as it is common in Eastern Europe, but also beyond this region, as is the case with the Austrian Academy of Sciences. And we have countries where academies receive substantial amounts for research in the humanities, like the “Akademienprogramm” in Germany.

Regardless of their institutional form or their role in the science system, I do believe that academies have to be places where a circle of outstanding scholars talk to each other and regularly open their doors to the general public to give them insights into what research and science is able to do. We need to be “working academies”, working on specific topics, especially on those areas where the streamlining of universities has led to a situation where certain subjects are no longer taught. Academies can be places where those disciplines and topics can survive. And they can survive even better if they do that in a virtual institute and in an international network, which is feasible today with rapid communication via digital channels, to create new circles of scientists devoting their life to rather specific areas in the world of knowledge.

Secondly, academies must play a role in providing scientific advice to policy-makers. Many academies have been doing this for many years at the national level. In Europe, as you know, we at ALLEA, jointly with EASAC, Academia Europaea, FEAM, and Euro-CASE, are now forming the SAPEA project within the Scientific Advice Mechanism. SAM is a completely new innovative system of giving scientific advice to the European Commission. SAPEA opens a unique opportunity, to both involve science in policy-making and widen its impact, while also particularly strengthening the role of academies in societal processes. It is not enough to just do that at the European level, but we also need to do that at the national and sometimes even at the regional level.

For me, scientific excellence and the widening concept are thus an opportunity for inclusion. Inclusion of disciplines in finding solutions to pressing challenges. Inclusion to make more scientific institutions in Europe really competitive, in the sense of producing scientific excellence, but also in equipping them with the means to be more successful in the international scientific race for funds. And finally, inclusion to me also means to take into account, more than we have in the past, the abilities and potential of academies both in the world of research, and especially

in the world of scientific advice and public engagement. Ultimately, what we really need to do is close the gap between what society needs and what scientific knowledge is: namely, to create a better judgement in the future.

European Academy Networks: shaping science policy

G7 Science Conference: "The role of National Academies and International Academic Networks in advising institutions"

Accademia Nazionale dei Lincei

Rome, 3 May 2017

Dear President Quadrio Curzio,

Dear Presidents,

Distinguished guests and colleagues,

It is with great pleasure that I am given the opportunity to speak to you today in my role as President of ALLEA, the European Federation of 59 Academies of Sciences and Humanities within the European Council and of course, I also speak to you as spokesperson of the SAPEA project. I very much want to express my sincere appreciation to you, dear Alberto, for this kind invitation and indeed for the enormous support you gave us in the past and which will hopefully continue into the future.

I have followed with great interest the presentations of the statements by the G7 academies and I must say that I am pleased to see continued engagement on these topics by academies around Europe and the globe.

In the spirit of this conference, I would like to present to you some ideas and convictions on the importance of our academies, not only in shaping science policy, what we call policy for science, but I want to also introduce you to the European Academy Network project, SAPEA – I'll describe the abbreviation later – where European academies go beyond science policy and provide, in truly interdisciplinary fashion, policy advice on other matters, what we call science-for-policy at a pan-European – not only national – level. Interdisciplinary, in this sense, means including humanities and social sciences.

Before I get into all of this, I want to start with a word of caution and, to an extent, a little bit of self-reflection on the *raison d'être* of academies today. You may also call it constructive self-criticism, which – since we are in an “inner circle” – might be tolerated.

Many of our academies, just like the Lincei, were founded during the period – and under heavy influence – of the Enlightenment in Europe. The never-ending quest for truth has been our guiding light ever since and many of us can, rightly so, look back with wondrous amazement at many of the achievements from the past and today. There is no doubt that without the principles of scientific inquiry our academies are based upon, we, as a continent, or indeed as a species, would not be where we are today.

Today, however, we need to also acknowledge the criticism hurled towards us, some of it justified, probably most of it less so.

Scientists have been criticised of not engaging enough with their fellow citizens. And this is probably true, irrespective of the fact that great efforts and even great successes have been achieved in the past, but, in light of current developments, one could argue: not enough. I want to paraphrase former US President Barack Obama, who pointed out that reality has a way of asserting itself. And, sure enough, for many scientists reality has asserted itself rather unpleasantly in the recent past. And we should understand that the changes came slowly – but not necessarily quietly – and this happened in an area where policy-for-science and science-for-policy are merging, where the strict differentiation is neither no longer possible nor feasible.

Our friends in Hungary were witness to a law which all but sealed the closure of one of its most prestigious universities, the Central European University. Academics in Turkey are experiencing most inappropriate repercussions for simply doing their work, and even in this beautiful country, it was not too long ago that scientists were put on trial for simply failing to predict an earthquake!

And we don't know yet about new ideas in the United States, where only in a last-minute decision, drastic cuts to the Life Sciences were avoided. All of this happens in a time when people refer to our century

as a “Century of the Life Sciences.” We don't know anything yet about what will happen with the science system of our colleagues in Great Britain after Brexit. In many countries we have seen severe cuts to the research budgets for humanities research. And finally, who of us really knows what is going on in our sister academy in Russia?

We would be wrong to assume that these are singular incidents. If we look at history, we see that the pendulum swings back and forth, and after many decades of fantastic progress, we have to ask if the pendulum has started to swing in a direction that we, as scientists, cannot condone. It is therefore up to us to take ownership of what we do, to defend the principles of scientific inquiry and, above all, to engage with one another and with those who are not active scientists.

For quite some time, and even more so today, we can no longer afford to lean back. We are running in real danger of drifting into obscurity, in modern terms we might call it falling victim to alternative facts. Already the semantics of alternative facts show a silent adaptation to an ongoing trend. Why not call them what they are: lies? The world of science has, of course, made great strides concerning those topics in the past few years. I do not want to diminish them, and Dr Catlow from the Royal Society, Dr Courvoisier and others have reported on those efforts, and we can also think of the March for Science, which took place in many cities across the world just a few days ago. It shows the willingness and the need to defend these values and underlines the importance of scientific evidence. We should also remind ourselves of the fact that we have had great helpers. It is in fact also the way in which science journalists report on science that encouraged this wider interaction. Yet unfortunately, we do witness large newspapers devoting fewer and fewer resources to covering science. And in the electronic media, we are not as present as we should be! Not to speak of the absence of relevant concepts for Social Media

As I laid out in the beginning, my talk is about the role of European Academy Networks in shaping science policy. I am a strong believer that whatever problems are thrown in front of us, we can only solve them together. Academies have weathered many challenges in the past, and it is time that we adjust to the new challenges of the 21st century. To me, any

attempts at solving these challenges must encompass interdisciplinary approaches at an international level, for us at least at the European level, and have to be carried out with absolute scientific autonomy. Scientific findings and facts must be seen and put in the context of the conditions under which they were made. And they have also to be seen in the context of their potential consequences. Hence, interdisciplinarity, including social sciences and humanities, and internationality are important elements if we want to have impact in policy advice. We have to address the general public more, and probably even via new formats of public engagement. The role of academies in policy advice has to be prepared, has to be underlined, in many cases has to be preceded, and accompanied by what we call in German “Gesellschaftsberatung”, which means honest, transparent societal advice, public engagement.

At ALLEA, traditionally, we put a great focus on policy-for-science, that is ensuring that the framework conditions under which science, in the German sense of *Wissenschaft*, encompassing all scientific disciplines, can flourish and prosper. In today’s world, the only viable way to achieve this is to work cooperatively with each other across borders. Now, Europe is a diverse place with many different science systems, each country having their own regulations. At ALLEA, we try to work towards harmonisation of these regulations wherever possible.

To give you one example: our Working Group on Science & Ethics has recently published a revision of the European Code of Conduct for Research Integrity. This document, which will serve as a reference document for Horizon2020 Grant Agreements, is an important step in creating and emphasising the need for a unified understanding of what good research practice entails. It is not always the ground-breaking scientific discoveries that create trust in science; it is knowing that the way science is carried out is transparent and accountable. In times of “fake news”, lies and “alternative facts”, we should not make the mistake of producing science of questionable quality, only to satisfy the perceived need to publish ever faster and with ever more attention to creating a baiting headline at the price of solid research.

While the above-mentioned Code of Conduct is a sort of meta issue for science, ALLEA, via its working groups, also tackles legislative

questions of emerging technologies. Our Working Group on Intellectual Property Rights has recently come out with a statement on patenting issues surrounding the CRISPR-Cas technology, which was mentioned by Thierry Courvoisier as genome-editing. A very exciting new way of altering genetic material, as you know, and thus in need of carefully thought-through legislation as to not offend human dignity. For example, my home academy, the Berlin-Brandenburg Academy of Sciences and Humanities, has already published a paper on responsible use of this technology in 2015, where we included and reflected upon ethical and legal consequences. But here again, it is important that this is now done at a European level. Institutes across the continent are looking into applications for CRISPR-Cas. Legal uncertainty about their research results, but also about the future practical applications of their findings, must be avoided at all costs.

Now, shaping European science policy by working on the very foundations of what it means to conduct science, is but one thing that academies are in an excellent position to do. We have been doing this for a long time, and we will continue working on this mission.

However, we can do much more. The expertise assembled in academies, together with the unique quality of academies to bring together scientists from a wide range of disciplines, is a fertile ground for experiencing and training interdisciplinarity and hence, of course, also the provision of advice to policy-makers and the general public. Some academies already fulfil this role, yet many more should consider doing it for themselves and for their audience.

At a European level, ALLEA, together with its partners *Academia Europea*, *EASAC*, *Euro-CASE* and *FEAM*, has started doing exactly this: providing evidence-based scientific policy advice to the European Commission via the SAPEA project, which I mentioned at the beginning. SAPEA, or - Science Advice for Policy by European Academies - brings together the expertise of over 100 academies around Europe to inform the High Level Group of Scientific Advisors within the European Commission’s Scientific Advice Mechanism, SAM. One of the main aims of the project is to also create a debate with the general public via our academies, in topics that are already, or will become, highly relevant for our society.

To us, this is a very welcome development. Previously, the European Commission attempted to attain their scientific advice primarily through its Chief Scientific Advisor, a model that is commonly found in Anglo-Saxon countries around the world. Yet, Europe is more complex than that, and the fact that even such an accomplished scientist like Anne Glover found herself under heavy scrutiny is perhaps testimony of this diversity of opinions and systems.

In any case, SAPEA and SAM are at the beginning of proving that we can deliver high quality advice and we sure hope that, together with our member academies, we can have a real impact in grounding future European legislation on solid scientific evidence. It should and will not only greatly improve the quality of European legislation, but I also believe that, by ensuring that legislation is scientifically sound, we may just be able to increase our fellow citizens' trust in European policy-making. This, however, will only happen if we manage to avert the developments I mentioned in the earlier part of my speech.

My fellow academicians, I believe we have a truly unique chance. Never before have European academies been approached by European policymakers to provide concerted advice. I would therefore like to encourage all of you to consider either to participate in a SAPEA working group via academy expert nominations, or to consider what your national academy already has to offer to your national policy makers. There are already quite a number of relevant fact papers, recommendations and the like available in individual academies. They all contribute to our task. We heard during the day excellent examples of what is available already, this is a perfect basis, which can and will be used, and in some cases enlarged, by including aspects brought forward by the humanities and social sciences. And we should carefully consider to what extent this material can be considered for transparent and careful advice to our societies at large.

In conclusion, I see European Academy Networks in a dual responsibility. We try to ensure that research is carried out, and can be carried out, in a comparable, and most importantly excellent fashion anywhere on the continent, AND we share the expertise we have with those who have to make complex decisions on complex issues, so that those decisions

are better informed, more sustainable, *and* in the end, fair to all citizens of our European project. Ladies and gentlemen, it is of paramount importance to include all people in our growth of knowledge and hence the widening of our concepts to include societal engagement has to receive high awareness!

Thank you very much.

Wissenschaftliche Politikberatung in Europa: Bedeutung der Akademien im Scientific Advice Mechanism der EU

Haus der Schweizer Akademien der Wissenschaften

Bern, 7. Juni 2017

Verehrter Herr Präsident, [Maurice Campagna; Präsident des Dachverbandes Schweizer Akademien]

Meine sehr geehrten Damen und Herren,

Liebe Kollegen,

ich freue mich sehr, heute in Ihrem Hause zu Ihnen zu sprechen und Ihnen ein wenig unser SAPEA Projekt näher zu bringen. Als Präsident des Europäischen Dachverbandes von Wissenschaftsakademien, ALLEA, besetze ich gegenwärtig auch die Position des Vorsitzenden des SAPEA Konsortiums, welches durch die Zusammenarbeit von 5 europäischen Akademienverbänden – Academia Europaea, ALLEA, EASAC, EuroCASE, und FEAM, mehr als 100 individuelle Akademien aus ganz Europa vereinigt. Für uns bei ALLEA und den Partnernetzwerken, aber auch besonders für unsere Mitgliedsakademien, bietet SAPEA große Chancen und Potenziale, die exzellente und wichtige Arbeit der einzelnen Akademien noch internationaler aufzustellen, und die Europäischen Institutionen mit sachlich fundierten Erkenntnissen zu beraten.

Besonders in unseren doch wieder unruhiger werdenden Zeiten ist diese Arbeit von größter – und wachsender – Bedeutung und wir, als Wissenschaftler, sollten alle nach Wegen suchen, wie wir besser mit der Gesellschaft und der Politik interagieren und ein Verständnis der fundamentalen Relevanz von wissenschaftlichen Erkenntnissen in allen Lebenslagen schaffen oder stärken können.

Als Mitglieder und Mitarbeiter der Akademien, sei es in Ihrem

Fälle der Schweizer Akademien, oder in meinem Falle der Berlin-Brandenburgischen Akademie der Wissenschaften, sind wir natürlich den Ideen und Einflüssen der Aufklärung eng verbunden. Unser Handeln und unsere Forschung sind idealerweise immer motiviert von dem Drang, Hypothesen zu testen, und Fakten von Vermutungen oder Fiktion zu unterscheiden. In einer Zeit, in der ungezügelter – und ganz überwiegend auch unregelter – Austausch von Informationen im Internet immer mehr dazu führt, beabsichtigt oder unbeabsichtigt, Unwahrheiten, neudeutsch „Alternative Facts“, zu verbreiten, muss es uns ein Anliegen sein, nach Mitteln und Wegen zu suchen, die Stimme der wissenschaftlichen Vernunft wieder lauter klingen zu lassen.

Wir sollten jedoch nicht den Fehler machen, fragwürdige Dynamiken in der digitalen Welt als alleinige Ursache dieser gegenwärtigen Entwicklungen auszumachen. Vielmehr sind es doch die Menschen hinter den Computern und Smartphones, die sich immer schwerer tun, kritisch mit Inhalten und deren Interpretation umzugehen. In diesem Sinne müssen wir auch ein Stückweit konstatieren, dass wir uns in den letzten Jahren im Wissenschafts- und Bildungsbereich ein wenig zu sehr von unseren geschätzten, aufgeklärten Idealen der kritischen Betrachtung entfernt und wohl zu passiv auf diese Dynamiken reagiert haben.

Zu einem bestimmten Grad stellen neue Formen der Kommunikation in der digitalen Welt, besonders diverse Formate der Social Media, unsere Akademien also auf eine harte Probe. Inspiriert von Humboldtschen Idealen haben Akademien allzeit an der Schaffung eines aufgeklärten Weltbürgertums gearbeitet. Menschen sollten befähigt werden, nachdem sie sich eingängig mit der Materie beschäftigt haben, an globalen und gesellschaftlich relevanten Diskussionen informiert teilzunehmen.

Tatsächlich führen die digitalen Kommunikationsmöglichkeiten dazu, dass heute immer mehr Menschen immer regelmäßiger gesellschaftliche Fragen online diskutieren, dies aber in den meisten Fällen in einer Weise, die nicht unseren Ansprüchen an eine ausreichend „informierte“ gesellschaftliche Debatte genügen kann. Ein wesentlicher Faktor hierfür ist die geringe Hemmschwelle, in der Anonymität des Internets unqualifizierte oder von Emotionen geleitete Aussagen zu machen. Die Schwelle ist ungleich niedriger als dies im persönlichen Gespräch der

Fall ist, nicht zuletzt aufgrund des schwindenden Verantwortungs- und Rechenschaftsbewusstseins in der anonymisierten digitalen Interaktion. In der digitalen Welt sollte nicht erlaubt sein, was in der analogen Welt in mühsamen Prozessen verhindert wurde und wird.

Gleichzeitig hilft es niemandem, ausschließlich die Gefahren und Schattenseiten der auf Social Media basierten Kommunikation zu betrachten. Auch und vielleicht gerade für die Interaktion von Wissenschaft und Gesellschaft, bieten diese Technologien ein enormes Potenzial, durch neue Dialogformate und digitale Plattformen das, was wir im Englischen „Public Engagement“ nennen, zu stärken.

Momentan laufen wir dem Trend noch hinterher, und gerade bei einem so wichtigen Thema sollte es uns ein großes Anliegen sein, uns eingehender mit dieser Welt zu beschäftigen. In Deutschland nannte unsere Frau Bundeskanzlerin Angela Merkel das Internet vor nicht allzu langer Zeit noch „Neuland“. Für die jungen Menschen – so genannte digital natives –, die unsere Zukunft bestimmen werden, ist es das aber keineswegs. Für sie bietet das Internet vielfach heute jene Plattform zum Meinungs-austausch, die früher für die einen vielleicht eine Diskussionsveranstaltung und für andere etwa der Stammtisch war. Auch der politische und gesellschaftliche Diskurs findet zunehmend eben nicht mehr von Angesicht zu Angesicht statt. Das müssen auch wir in der Wissenschaft noch stärker anerkennen. Und wir sollten intensiv daran arbeiten, neue und gute Lösungen zu finden, wie die Wissenschaft auch im digitalen Umfeld an diesen Diskursen aktiv teilnehmen kann.

Meine Damen und Herren, wir müssen feststellen, dass anerkannte wissenschaftliche Forschung immer häufiger missachtet, fälschlich verstanden oder gar grob pervertiert wird. Zunehmend wird Expertenwissen zudem offen und öffentlich abgelehnt, rationale und faktenbasierte Argumentation gleichsam stolz zurückgewiesen, wie jüngst zum Beispiel durch einen hohen britischen Regierungsvertreter in der Brexit-Debatte oder in letzter Zeit wiederholt sogar von Staatsoberhäuptern auf beiden Seiten des Atlantiks.

Diese Entwicklung betrifft auch – und vielleicht insbesondere – uns in den Akademien, die wir das Hineinwirken von Wissen und wissenschaftlichem

Denken in gesellschaftliche und politische Diskurse als Teil unserer *raison d'être* begreifen. Der wachsenden Ablehnung von Ratio müssen wir versuchen die Fähigkeit entgegenzustellen, Nuancen zu erkennen, und mit divergierenden Erklärungsmustern umzugehen, auch wenn dies manchmal unbequem und schwer zu erklären scheint. Für uns Wissenschaftlerinnen und Wissenschaftlicher ist es unausweichlich, uns stärker mit Nicht-Wissenschaftlern auseinanderzusetzen, um einerseits unsere Standpunkte und Erkenntnislagen zu präsentieren, und andererseits um besser zu verstehen, was unsere Mitbürger umtreibt, auf was für Sorgen und Nöte unsere Arbeit vielleicht Antworten entwickeln sollte.

Auch aus diesem Grunde sehen wir unsere Verantwortung in SAPEA nicht nur darin, „traditionelle“ Politikberatung zu machen, sondern sind uns unserer gesellschaftlichen Verantwortung durchaus bewusst und versuchen diese, wann immer möglich, in unseren Rat mit einfließen zu lassen. Hier nehmen wir auch die Erfahrungen unserer Akademien - nicht zuletzt auch der Schweizer Akademien - zum Vorbild, die es immer wieder geschafft haben, auf lokaler, regionaler und nationaler Ebene, effektiv und mit hoher gesellschaftlicher Relevanz, Themen zu bearbeiten und Politikberatung mit großer realer Anwendbarkeit zu formulieren. In diesem Sinne gratuliere ich zu und bedanke mich für die tolle Grundlagenarbeit und hoffe, auch mit Ihnen zusammen, dies in Zukunft durch SAPEA auch auf europäischer Ebene zu erreichen.

Lassen Sie mich also einige Worte zu SAPEA sagen:

Unser SAPEA Projekt, oder Science Advice for Policy by European Academies in der Langform, ist, wie zuvor angedeutet, das Ergebnis einer bisher unerreichten Kooperation zwischen den fünf Europäischen Akademienverbänden Academia Europaea, ALLEA, EASAC, Euro-CASE, und FEAM, und dementsprechend auch ihrer Mitgliedsakademien und individuellen Fellows. Seit dem Projektbeginn Ende letzten Jahres sind wir mittendrin im Geschäft der Beratung und viele Academy Fellows - tatkräftig unterstützt durch unsere bei den Akademienverbänden angesiedelten Scientific Policy Officers - haben bereits maßgeblich zu den ersten konkreten Ergebnissen dieses neuen Europäischen Mechanismus der wissenschaftlichen Politikberatung beigetragen.

Ein wenig zum Hintergrund des Projekts: Wie vielen von Ihnen sicher bekannt ist, wurde mit der Wahl von Jean-Claude Juncker zum Europäischen Kommissionspräsidenten eine Neuordnung der wissenschaftlichen Beratung für die Europäische Kommission initiiert. Die Position des Chief Scientific Advisors, die bis dato Anne Glover innehatte, wurde zu Gunsten einer breiter aufgestellten High Level Group of Scientific Advisors – HLG – aufgegeben. Damit bewegte man sich ein Stückweit weg vom anglo-amerikanischen Modell, und gleichzeitig hin zu einem eher kontinentaleuropäischen.

Von dieser erweiterten Gruppe erhofft sich die Kommission, die Diversität europäischer Staaten und auch der wissenschaftlichen Disziplinen besser abzubilden. Die HLG wird dabei in ihrer Arbeit unterstützt von einem Referat, der sogenannten SAM Unit, angesiedelt im Forschungskommissariat der Europäischen Kommission. Diese Komponenten zusammen mit dem SAPEA Projekt bilden den Kern des Scientific Advice Mechanism, eben jenes SAM, der sich nun hauptsächlich mit den wissenschaftlichen Problemstellungen der Kommission beschäftigt.

Natürlich, und auch zu Recht, kann man nun sagen, dass auch sieben Weise nicht vollständig in der Lage sind, die Diversität und Komplexität europäischer Wissenschaft in Gänze abzubilden. Überhaupt dann, wenn sich abzeichnet, das nunmehr bereits das dritte Mitglied der High Level Group ersetzt werden könnte. Also hier ist die Kontinuität eine zentrale Frage.

Dies war auch der Kommission bewusst, die sich daher aktiv an die Akademien wandte, um der HLG, mittels des SAPEA Projekts, mit Rat und Tat zur Seite zu stehen, um eine wahrlich interdisziplinäre und multinationale Beratung zu gewährleisten. Und letztlich auch – wie wir jetzt gelernt haben – um Kontinuität zu schaffen. Für die Akademien ist dies wahrlich eine willkommene Entwicklung, da wir bisher nicht aktiv von der Europäischen Kommission ersucht wurden, unser Wissen bereit zu stellen. Zweifelsohne hat die Kommission bei dieser Entscheidung auch der exzellenten Arbeit der Akademien Rechnung getragen.

Meine Damen und Herren, es liegt nun vor allem an uns, das uns

entgegengebrachte Vertrauen zu bestätigen, und damit gleichzeitig unseren Teil dazu beizutragen, dass europäische Gesetzgebung auf guter wissenschaftlicher Basis gemacht wird.

Und hier gibt es insbesondere zweierlei zu bedenken. Zum einen profitieren Menschen primär von besseren Gesetzen, auch wenn wir uns natürlich eingestehen müssen, auf viele Fragen vielleicht keine endgültigen Antworten zu haben, sondern nur Optionen aufzeigen zu können. Aber zum anderen gibt es eben manchmal mehr als eine „Wahrheit“, und als Gesetzgeber ist es auch eine der Herausforderungen, die schwierigen Entscheidungen zwischen verschiedenen Optionen zu treffen und insbesondere diese auch schlüssig erklären zu können. Deshalb ist das Ausarbeiten, das Entwickeln von Optionen – in der Form wenn dann – eine für uns wichtige Arbeitsweise. Auf diese Weise erhoffen wir uns, auch mit ein klein wenig Idealismus, dass wir unseren Beitrag dazu leisten, das Vertrauen der Bürger in die Politik ihrer gewählten Abgeordneten zu stärken. Gerade hier in Europa haben wir ja leider in letzter Zeit ein großes Maß an gefühlter Abkopplung zwischen Bürgern und Politik erkennen müssen, nicht zuletzt verdanken populistische Parteien mit einfachen Antworten ihre Existenz dieser Entwicklung. Es ist also mehr als an der Zeit, sich grundlegend mit dem Thema zu beschäftigen.

Um diesen Entwicklungen in geeigneter Weise zu begegnen, ist es uns mit SAPEA auch ein großes Anliegen, über Europa verteilt öffentliche Veranstaltungen zu den von uns bearbeiteten Themen zu organisieren. Mit dieser geographischen Verteilung wollen wir auch erreichen, dass der Fokus des Diskurses über gesellschaftlich relevante Fragestellungen, und letztlich auch des Politikmachens, ein wenig von Brüssel abrückt und die Menschen direkter vor Ort einbindet. In der Schweiz ist Bürgerbeteiligung ja ein integraler Bestandteil der Demokratie. In Europa können wir dort durchaus noch ein wenig lernen und vieles besser machen, auch wenn die Europäische Union zweifelsohne sehr große Herausforderungen in Sachen Komplexität und Diversität darstellt.

Davon lassen wir uns aber nicht entmutigen, im Gegenteil. Allein für dieses Jahr planen wir fünf Veranstaltungen, verteilt über ganz Europa, zum aktuellen SAM-Thema „Food from the Oceans“. Von Lissabon bis Bergen werden wir dort mit Akademien und anderen Partnern versuchen,

in kreativer Weise Menschen dieses Thema näher zu bringen. Nun ist dieses konkrete Thema vielleicht aus Schweizer Sicht geographisch bedingt nicht von allerhöchstem Interesse, obgleich das Schicksal und der Zustand der Weltmeere ein existenzielles Thema ist. Auch in Zukunft werden wir ähnliche Events zu anderen SAPEA Themen veranstalten und in diesen würden wir uns über eine aktive und enge Zusammenarbeit mit den Schweizer Akademien sehr freuen. Ein Projekt wie SAPEA kann eben nur dann funktionieren, wenn alle Partner miteinander zusammen arbeiten. Wenn wir in ein paar Jahren zurückzublicken und feststellen, dass wir unseren kleinen Beitrag zu besserer europäischer Zusammenarbeit und gegenseitigem Verständnis leisten konnten, dann wäre dies bereits sehr erfreulich und ein Erfolg.

Meine sehr geehrten Kollegen, ich denke mit SAPEA eröffnen sich den Akademien bisher ungeahnte Chancen. Vor uns liegt zum ersten Mal die Möglichkeit, uns nachhaltig mit wissenschaftlicher Expertise konzentriert in die politische Entscheidungsfindung einzubringen. Dies ist der Grund, warum ich Sie ermutigen möchte, die Arbeit von SAPEA zu unterstützen, sei es durch Mitwirkung von Experten in SAPEA-Arbeitsgruppen oder durch die Ausrichtung einer öffentlichen Veranstaltung zu einem SAM- bzw. SAPEA-Thema. Besonders in der Schweiz sind ja bereits viele Ihrer Kollegen aktiv in diese Prozesse eingebunden. Es ist mehr als erstrebenswert, ein vergleichbares Maß an Unterstützung auch auf europäischer Ebene zu erreichen.

Lassen Sie mich abschließend noch einmal auf eine oft angeführte vermeintliche Dichotomie zu sprechen kommen, die auch in den vorbereitenden Gesprächen zu SAM und SAPEA wiederholt zum Thema wurde. Vornehmlich wird es bei SAPEA – wie auch bei der Arbeit der HLG – um die Bereitstellung wissenschaftlicher Erkenntnisse zu verschiedenen Themenbereichen für die Politikgestaltung gehen. Diesen Prozess nennen wir gemeinhin Science for Policy. Ich bin jedoch überzeugt, dass es uns – insbesondere in den Akademien – grundsätzlich bei der Politikberatung und bei SAPEA im Speziellen nicht gelingen wird, diese Science-for-Policy-Arbeit zufriedenstellend und erfolgreich auszuführen, wenn nicht gleichzeitig sichergestellt ist, dass die Strukturen und Grundsätze – ja die Werte und Normen – des wissenschaftlichen Arbeitens durch eine

langfristig geplante und klug ausgestaltete Wissenschaftspolitik – was wir Policy for Science nennen – untermauert wird.

Für die Akademien sehe ich daher zukünftig eine noch anspruchsvollere Rolle. Einerseits müssen wir uns weiterhin darum kümmern, dass Wissenschaft und Forschung auf einem vergleichbar hohen Niveau überall in Europa durchgeführt werden kann, und dass Wissenschaftler ungestört von politischen oder sonstigen unlauteren Einflüssen ihrer Arbeit nachgehen können. Dass das heutzutage nicht mehr selbstverständlich ist – auch nicht in Mitgliedsstaaten der Europäischen Union – zeigt das jüngste Beispiel der Central European University in Budapest.

Andererseits dürfen Akademien sich auch in gesellschaftlichen Fragen nicht verstecken und müssen noch stärker Initiative ergreifen in der Gestaltung des Dialogs mit Gesellschaft und Politik, gerade auch über und mittels neuer Formen der digitalen Kommunikation.

Früher wie heute sind die Akademien Orte, die exzellenten Wissenschaftlern aller Disziplinen ermöglichen, interdisziplinär zusammenzuarbeiten und sich gemeinsam den großen Fragen unserer Zeit zu widmen. Ist dies bisher schwerpunktmäßig auf nationaler Ebene, oder vereinzelt auch in punktuellen Kooperationen mit Schwesterakademien geschehen, versuchen wir mit SAPEA nun auch einen gemeinsamen Anfang für dauerhafte und disziplinenübergreifende Wissenschaftszusammenarbeit in Europa zu machen. Wir hoffen, dass wir damit auf dem richtigen Weg sind.

Vielen Dank!

All European Academies Madame de Staël Prize for Cultural Values - opening remarks

Bulgarian Academy of Sciences

Sofia, 16 May 2018

Dear Commissioner Gabriel,

Dear Professor Pető,

Dear Professor Revalski,

Dear Luisa,

Dear Alberto,

Dear delegates of the ALLEA Academies,

Ladies and Gentlemen,

It is my great honour to welcome you to this fifth ALLEA Mme de Staël Prize for Cultural Values award ceremony here tonight in this beautiful venue of the Bulgarian Academy of Sciences. I am very glad to be able to share and celebrate with you the outstanding academic contributions of Professor Andrea Pető in the field of gender studies, though really the impact of her research reaches far beyond her discipline.

ALLEA is proud to be able to award this prize now in its fifth year running to highlight some, though not nearly all, of the excellent work produced by academics across the continent on the topic of European identity, whichever form it may take.

We are also grateful because awarding this prize would not have been possible without the co-sponsorship of the Compagnia di San Paolo, which graciously renewed their support this year for this important

endeavour. My dear Friend and President of the Academy of the Lincei, Alberto Quadrio-Curzio, will address you on behalf of the foundation in just a minute.

I am also thankful to the Bulgarian Academy of Sciences which is hosting us not only tonight, but also earlier today and tomorrow, with great hospitality and care. Dear President Revalski, I can only repeat my thanks from this morning, it is now just as appropriate as it was then.

Likewise, I want to point out that while I stand before you as a member of the prize jury, my fellow jury members have discussed in great detail the merits of all candidates, and all of whom would have deserved today's honour. I am therefore very grateful for all of their work, including Luisa Passerini, our very first Madame de Staël laureate and jury member, who will give a much more knowledgeable laudation on Andrea Pető later on.

Madame Germaine de Staël could not be a better representative to illustrate the importance of Andrea Pető's work on unsilencing women in their historical context. Her story, her life, is one of challenging the status quo using her unwavering will to oppose Napoleon Bonaparte, certainly the most powerful man of his time, and using her outstanding intellect to bring together great thinkers in her famous salons.

When we first set up this prize, our search for a namesake quickly arrived at Madame de Staël, for the values she upheld throughout her life were the same as the ones we would like to see in our laureates. We felt that the prize should be awarded to scholars whose academic work contributed in one way or another towards the creation, maintenance or preservation of a better Europe, guided by humanistic ideals and an understanding of common bonds between the nations on our continent.

Her life's journey from France to Switzerland, her marriage to a Swede and her keen interest in Germany influenced her extensive bibliography encompassing a wide range of publications from novels to political essays and everything in between. Though her probably most famous work was a theory of romanticism, her influence goes far beyond that as her clear vision and understanding of over-arching societal issues place her among the most noteworthy personalities of her time.

Back in 2014, at the first ALLEA prize award ceremony, we were

delighted to have chosen such a prolific scholar as Luisa Passerini. Luisa is not only previous laureate and engaged member of the prize jury, she is first and foremost a ground-breaking historian whose work has taken her all across the globe before she settled at the European University Institute in Florence. Much like Andrea Pető, Luisa is fascinated by the concept of memory and remembrance, particularly with regards to questions of gender and diasporic subjectivities. Clearly, we could not have asked for a more capable person to sing Professor Pető's praise this evening.

As an association with a truly European perspective, our relationship with the European Institutions is naturally of great importance to us in all of our activities. We are therefore pleased and honoured to welcome a representative of the European Commission here tonight, the European Commissioner for Digital Economy and Society, Mariya Gabriel, who came all the way from Brussels to hand over the prize to Andrea Pető.

Mariya Gabriel's initiative on the Digital Single Market, the establishment of a High Level Group on Fake News as well as her campaign "No women no panel" are all closely related to many of ALLEA's recent activities and as the youngest currently serving Commissioner, she brings a wave of fresh air in the way the Commission thinks and acts on those issues. We are looking forward to working with her in the future and even more so to hear her speak today.

Before I pass the baton on to Alberto, I would like to take this moment to personally congratulate Andrea Pető for this prize. Her academic career certainly speaks for itself, and I believe that exploring the relationship between gender and memory, and thereby making the voices of so many women heard who were previously ignored, is in and of itself not just worthy of our praise, but indeed a necessary activity. Similarly necessary and another sign of Andrea Pető's strength of character was her resistance with her peers to the Lex CEU, which was passed in Hungary last year and which almost led to the closure of her university, the Central European University in Budapest, which, for a while, was also my university, when I served on its Board of Trustees. Her work of unsilencing oppressed groups can only flourish when academics are free to pursue their research unimpeded by higher powers, no matter if they are governmental, economical, or indeed societal. Andrea Pető's discipline of gender studies

and her university are both examples of why we need academic freedom and why all of us need to fight to ensure academic freedom.

With that off my chest, I would now like to invite Alberto Quadrio-Curzio on stage to say a few words on behalf of our co-sponsor, the Compagnia di San Paolo.

Thank you very much.

Farewell address

2018 ALLEA General Assembly

Bulgarian Academy of Sciences

Sofia, 17 May 2018

Esteemed colleagues,

Over the past six years, you have seen enough of me, so I am not going to keep you for very long. However, before I take my leave, it is a matter close to my heart to say thank you to a whole range of people. One of the things that touched me most in this work was the enduring and never-ending commitment of so many people involved with ALLEA.

This is, thus, a thanks to all of you here today, and it is a big thanks to my colleagues, current and former, in the Presidency and Board.

Allow me to reminisce and to thank them personally.

I would like to start with Ruth Arnon from Israel, our champion as far as average distance travelled to our meetings is concerned. Thank you, Ruth, for your sharp and intelligent contributions to our discussions, and I am grateful for your academy's support over the years.

Though absent today, I would not like to miss to thank Brigitte Mazohl from Austria, who, for the past two years, has done very valuable work for us and has provided a great link to the Austrian Academy.

From Italy, Carlo D'Adda was a strong personality to rely on, particularly his attention to detail when it came to the finances of ALLEA is very much appreciated. Thank you very much for this and everything else you have done for ALLEA, dear Carlo.

From our host academy today, Nikolay Miloshev deserves our gratitude for inviting us to this meeting and facilitating it, but also for years of trusted cooperation, strengthening the relationship between ALLEA and this year's wonderful host.

Highly instrumental and constructive was the cooperation with our Swiss colleague Jürg Pfister. Thanks to your proactive initiative and vision, we were able to accomplish a good number of events and activities. And I'm very glad that your academy will continue to be prominently represented by the next President.

For all of the just mentioned, their time with ALLEA has now come to an end, so when I say thank you I say it both on behalf of myself, but most importantly on behalf of ALLEA, for all you have done. But I'm also glad to see that some of my esteemed colleagues in the Board will continue to serve ALLEA, and I wish them good fortune, together with the rest of the new Board, whom I want to wholeheartedly congratulate on their election.

Of course, we've already had to say goodbye to outgoing Board members previously, but again, on this occasion, I would like to say thank you to Øivind Andersen from Norway, Peter Kennedy from Ireland, and Menahem Yaari from Israel. All three of them have been vitally important in my first years as President, and I am certain that without their input, the start of my Presidency would have been rockier than it ended up being.

Last but certainly not least, I want to thank two people whose ALLEA journey also ends today, my esteemed Vice-Presidents Daniela Jezova and Ed Noort. I'm sure you would agree it was not always easy to steer the ALLEA boat, but I could always count on your wise counsel and I owe you a great deal of gratitude. Thank you for that.

Dear colleagues, organisations like ALLEA generally have an average age on the slightly higher side of things. To provide a true intergenerational perspective, it is a great pleasure for me that the Secretariat has an average age of just above 30 (we did the math). This harmonious mix of ages is probably one of the secrets of ALLEA, and personally I thank them for sharing their youthfulness and energy with me. And if some of you appreciated receiving letters from us in your native language, this is thanks to the internationality of this team of which I am very proud.

Before I finish, I would like to go back all the way to 2011. The year that in many ways shaped the look of the organisation today. I remember meeting Ed Noort for the first time to convince me to run as President. We quickly established a special relationship and I am proud to call him a friend.

His passion and vision convinced me that I should become involved in ALLEA. Together, we designed an ambitious programme for ALLEA, which we presented in a programmatic speech during the 2012 ALLEA General Assembly in Rome. I believe now is a good time to look back and see if we achieved what we promised to set out to do.

One of our foci was to enhance the role of ALLEA in European science and research policy, in a way, our core competence of policy for science. With our activities in defining the guidelines for good research practise in Horizon2020 via the revised European Code of Conduct for Research Integrity, our continuing and well-received input into the design of Framework Programme 9; and with our valuable work on intellectual property rights issues, to name but a few, we are definitely prominently placed, and relevant stakeholders both in policy and academia look to us for advice and cooperation. Our work on policy-for-science topics is on a good way, but far from being done. Via our dedicated working groups, we continue to promote better inclusion of SSH in European research programmes, and more recently with our working group on Truth, Trust and Expertise, we are working on a topic of global relevance as you might have seen in yesterday's symposium.

In addition, we set out to increase the general visibility of ALLEA and to put emphasis on the less tangible, yet no less important, aspects of Europe – a Europe of shared values, identity, and with an unmatched richness and diversity of intellectual and cultural life. To this effect, we have done numerous things. Only yesterday, we awarded for the fifth time the *ALLEA Madame de Staël Prize for Cultural Values*, this year to Professor Andrea Pető. All our laureates have produced outstanding work on a wide variety of social, cultural, political or legal aspects of European identity. The prize stands next to the ALLEA book series “Discourses on Intellectual Europe”, to which authors from across the continent contributed their writing in the first two volumes of the series, with the third one currently underway.

Another aspect we wanted to promote more strongly was the cooperation with other European Academy organisations. Earlier today, many of you have attended the SAPEA conference on Shaping Science Advice. SAPEA is the result of five networks coming together and combining their expertise from the social sciences to the technical and medical sciences. I believe

just a few years ago, many of us would have had difficulties imagining that such a close and fruitful cooperation between the European Academy Networks could take place to advise European policy-makers, yet here we are. I firmly believe that for ALLEA this is an outstanding opportunity for yet another avenue to provide scientific advice to policy-makers for the benefit of everyone in Europe, while at the same time not neglecting our original tasks of fighting for excellent framework conditions for science in Europe and for safeguarding academic freedom.

Lastly, I want to address the all-important topic of the inner organisation of ALLEA. When we set out in 2012, some of you may remember, there were some obstacles to overcome with regards to financing and the level of engagement of our academies. Now, six years on, I am glad to say that we have managed to implement and consolidate a membership fee system that does not ask too much of the academies, while still enabling the ALLEA Secretariat and other bodies to conduct their work. I am particularly thankful that after years of justified hesitation, the academies are using ALLEA again to reach out to their sister academies in many different ways. Every so often, I hear colleagues use the term ALLEA family, and not only does it warm my heart, but it is also a sign that the academies feel they are in this together. Our family has continuously grown to the point where new members need to prove, even more convincingly, that they can add something to ALLEA. I am also glad to see that more and more academies are trying to take responsibility in ALLEA. This year's numerous Board nominations are good proof of that, but many of you are also supporting ALLEA by hosting events, by taking over the lead in specific initiatives, or by nominating your very best to our working groups. So, thank you also for this, and I hope you will continue to be favourably inclined towards ALLEA.

Dear Antonio, looking back at the time when I took over ALLEA, I started with confidence. Now at the end of my term I looked up what confidence actually means: Confidence is the feeling you have before you understand the situation, or – to say it with Vergil – ‘They can because they think they can’.

And with that said, it is now time for me to pass the sceptre to you. I wish

you the best of luck and I am looking forward to seeing ALLEA grow under your aegis.

About ALLEA

ALLEA (All European Academies) is the European Federation of Academies of Sciences and Humanities. It was founded in 1994 and brings together almost 60 Academies of Sciences and Learned Societies from over 40 countries in the Council of Europe region. ALLEA is financed by annual dues from its Member Academies and remains fully independent from political, religious, commercial or ideological interests.

Member Academies operate as learned societies, think tanks, or research performing organisations. They are self-governing communities of leaders of scholarly enquiry across all fields of the natural sciences, the social sciences and the humanities. ALLEA therefore provides access to an unparalleled human resource of intellectual excellence, experience and expertise. Furthermore, its integrative membership structure comprises Academies from both EU and non-EU member states in Europe.

ALLEA seeks to contribute to improving the framework conditions under which science and scholarship can excel. Jointly with its Member Academies, ALLEA is in a position to address the full range of structural and policy issues facing Europe in science, research and innovation. In doing so, it is guided by a common understanding of Europe, bound together by historical, social and political factors as well as for scientific and economic reasons.

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