

Pearls for the Chancellor

Scientists present innovative projects to politicians



The presentation event with scientists from the Max Planck Society and the Fraunhofer-Gesellschaft was a first in two regards. On the one hand, the audience in the Max Planck Society's Harnack House in Berlin included prominent guests

Interactive presentation: Martin Wikelski from the Max Planck Institute for Ornithology shows State Secretary for Economic Affairs Rainer Sontowski, German Chancellor Angela Merkel and Federal Minister of Research Johanna Wanka (left to right) the minute size of the transmitters with which he follows the wanderings of animals.

including German Chancellor Angela Merkel, Federal Minister of Research Johanna Wanka and State Secretary for Economic Affairs Rainer Sontowski. On the other hand, the researchers' presentations took on an unusual format: interacting directly with their guests, the scientists presented their work at a desk with a touchscreen. Under the motto "Pearls of Research for Practical Applications" they had to summarize their work in just a few minutes – succinctly and in an easily comprehensible manner. The gamut of topics ranged from virtual reality and forecasting earthquakes using animal sensors to the early detection of reading and writing problems and combating antibiotic-resistant germs. The concept proved a winning formula. The Chancellor praised the vivid, comprehensible presentation of the projects. In conclusion, she promised to continue to advocate for reliable financial framework conditions for research in Germany.

Threefold Leibniz Prize

Ralph Hertwig, Frank Jülicher and Joachim P. Spatz to receive Germany's highest scientific honor

When the German research community bestows the Gottfried Wilhelm Leibniz Prizes, each endowed with 2.5 million euros, there will also be three scientists from the Max Planck Society in attendance at the ceremony in Berlin in March. Ralph Hertwig, Director at the Max Planck Institute for Human Development, is receiving the prize for his pioneering research on the psychology of human judgments and decision-making. "This body of work is expanding our understanding of the capabilities and limits of human rationality," writes the jury. One of the world's leading scientists in the field of biophysics, Frank Jülicher, Director at the Max Planck Institute for the Physics of Complex Systems, will also be awarded the prize. As the jurors emphasize, he understands how to "elucidate the

universal physical principles from the complex world of living matter." In addition, Joachim Spatz, Director at the Max Planck Institute for Medical Research, will be honored for his outstanding work at the inter-

face between materials science and cell biophysics. Spatz studies cell adhesion, which deals with questions relating to how cells bind together and how they attach to surfaces.

Prizewinning trio: Joachim P. Spatz, Ralph Hertwig and Frank Jülicher (left to right)



“Brexit will be more complicated than some imagine”

Jürgen Basedow explains why the British are facing arduous negotiations and why little will change initially

In June 2016, a majority of British citizens voted for the United Kingdom to leave the European Union. Upon taking office, the country's new Prime Minister, Theresa May, announced that she would quickly put the decision into practice. And she promised that "the power of EU laws in this country will end forever." Jürgen Basedow, Director at the Max Planck Institute for Comparative and International Private Law, believes that European laws will continue to apply in the UK for a long time to come.

Mr. Basedow, why can't the British – as a Tory MP put it – simply "offer to retain free trade, write a letter and leave?"

Jürgen Basedow: The United Kingdom has been a member of the European Union for 44 years. In that time, far-reaching contracts have been concluded and hundreds of regulations and directives enacted covering a wide variety of different areas. For example, there are extensive rules governing consumer protection in product liability, or the ban on misleading advertising, to name two cases. There are clear specifications in labor laws covering how workers' health must be protected, or the rights of works councils. There are common regulations on social security, environmental protection, insolvency proceedings, the certification of medicines, etc. If the British leave the EU, they will have to define what will replace all these standards.

Theresa May announced that she will introduce a "Great Repeal Bill" in the next session of the British parliament starting in May 2017.

What does this entail?

First, it's a question of repealing the Act with which the country accepted the rules of the EU upon its entry in 1972. This has to be done at the time of the UK's departure. At the same time, the "Great Repeal Bill" is intended to convert European standards – that is, mainly EU regulations – into national law. This conversion is necessitated by the lack of time available: according to Article 50 of the Lisbon Treaty, countries have only two years to negotiate an exit. The clock begins ticking as soon as the

British submit their official application to leave. If the negotiations haven't been concluded after 24 months and the deadline is not extended, all EU contracts and rules will cease to have legal force in England without it being clear what regulations will then apply. Theresa May wants to provide for this contingency.

If EU provisions are converted into British law anyway, what will change for the British?

Initially, this arrangement will give companies and citizens in the UK legal certainty. Later, parliament will decide whether all the standards will really be retained or what is to be changed. However, the difficulties for the British arise not in their own country, but in the remaining EU states. If the United Kingdom is no longer a member of the EU, British companies and service providers will lose many advantages on the continent. Lawyers, financial advisors, architects and many others will no longer be readily able to work in Germany, France or Sweden, for instance. The disadvantages will be most clearly revealed in the area of judicial rulings. The decisions of British courts will no longer be automatically recognized in EU countries. This will affect even such simple cases as a car accident and the question of which insurance company has to pay.

The British want to settle such matters during the exit negotiations ...

That depends on how long they wish to negotiate. If you look at the enormous volume of EU regulations, it certainly can't be done in two years. I would estimate that the negotiations will take eight or ten years – unless you take a ready-made model, namely the contracts with Norway, Iceland and Liechtenstein. However, all freedoms of movement apply in those countries – free movement of people, goods and capital and freedom of services. And the free movement of people also covers the right of establishment and the free movement of labor.

But that is precisely what the British don't want; they want less immigration.



Jürgen Basedow

That's why the subject of free movement will certainly be the most difficult point. Theresa May announced that "Norway is not a model." On the other hand, the EU won't budge from its freedoms of movement – of that I'm certain. So the Norwegian model might still come after all, at least as an interim solution if time is pressing. I can hardly imagine that the UK will talk about every single act of law – especially as the negotiations with the EU won't be the only ones.

What else is there?

The EU has concluded many international treaties with non-member countries that won't automatically continue to apply to the United Kingdom if the country leaves the EU. These include, for instance, agreements on liability in the areas of aviation, copyright and environmental protection, as well as many trade agreements. China announced that it is interested in concluding a free trade agreement with the United Kingdom and said at the same time that Britain should provide 500 people to work out the details. Not only does this show that Brexit will be much more complex than some imagine, it also underscores that the EU is more than a union of member states: it is a player on the world stage. That won't be so easy to replace.

Interview: Mechthild Zimmermann

Welcome to Cyber Valley

Science and business forge research alliances in the area of artificial intelligence



At the launch in Stuttgart: Theresia Bauer, Minister for Science, Winfried Kretschmann, Minister President, Volkmar Denner, Managing Director of Bosch, and Martin Stratmann, President of the Max Planck Society (left to right)

gart-Tübingen area. This ambitious project was kicked off in December by Winfried Kretschmann, Minister President of Baden-Württemberg, Martin Stratmann, President of the Max Planck Society and the other project participants. The Max Planck Institute for Intelligent Systems, the Federal State of Baden-Württemberg, the Universities of Stuttgart and Tübingen, and the companies, Bosch, Daimler, Porsche, BMW, ZF Friedrichshafen and Facebook want to strengthen research and development in the area of artificial intelligence in Cyber Valley. Together they are creating one of the largest research alliances in this field in Europe. Baden-Württemberg alone will invest more than 50 million euros in the project in the coming years.

Intelligent systems will shape our future: in the form of self-driving vehicles, household assistants or tiny robots in medical technology. In order to

expedite this development, partners from science and business followed the initiative of the Max Planck Society and created Cyber Valley in the Stutt-

Commitment to Scholars at Risk

Max Planck Society joins international network defending the human rights of scholars worldwide

The MPG is now a member of the "Scholars at Risk" (SAR) network, along with other prestigious international scientific facilities. The aim of the initiative is to support scientists around the world who are under threat from, for instance, war or violence. The network brings people and guest facilities together, but it also supports its 400 members with counselling and takes on the research work when evidence of the risk has to be provided for scholarship applications. The same is true of the Philipp Schwartz initiative by the Alexander von Humboldt Foundation (AvH), in which universities or even MPIs have until April 21 to submit applications for full 24-month scholarships for researchers at risk. Information and the application form are available on the AvH website. The point of contact at Administrative Headquarters for SAR is Barbara Spielmann, Coordinator for International Relationships.

The Scholars at Risk initiative condemns the implementation of U.S. President Trump's executive order on immigration.



Photos: State Ministry of Baden-Württemberg (top), Margaret Coons / Scholars at Risk (bottom)

Declaration of Principle on Animal Research

White paper emphasizes indispensability of animal research, as well as special ethical responsibility

The Senate of the Max Planck Society has adopted a white paper on animal research. It underscores that animal studies are indispensable in basic research, but it also acknowledges the special responsibility of every scientist, and subscribes to a culture of welfare. A further important concern is the transparent presentation of research to the public. The paper is the result of the extensive deliberations of a committee boasting an international line-up of well-respected researchers from the life sciences, as well as behavioral researchers, ethicists, specialists in communication and personalities from the field of research policy. In the future, the Max Planck Society aims to dedicate itself to the best possible implementation of the principles of the 3Rs. This stands for Replacement, Reduction, Refinement – the replacement and reduction of animal research and the minimization of stress for the animals. A fourth R for Responsibility completes the principles. For example, the sentience, consciousness and intelligence of different species of animals are to be investigated and animal research continually reassessed on this basis.



Protection from a single source: In the future, the Max Planck Society aims to promote a culture of welfare in animal research.

On the Net



Award-Winning Video

An international jury has awarded the Max Planck film *Biomaterials – Patent Answers from Nature*, which portrays the research conducted by Peter Fratzl at the Max Planck Institute of Colloids and Interfaces, the 2016 Technology Prize. The prize is awarded by the Goethe Institute from a selection of films shown at the annual Science Film Festival, which brings science to the screen: entertaining, creative, stimulating – and always instructive. Aiming to make insights from the natural sciences accessible to a broad public, it attracts considerable attention, above all in Southeast Asia, North Africa and the Middle East.

www.youtube.com/maxplancksociety

Female pioneers of science

On International Women's Days, three women Max Planck scientists celebrated the scientific accomplishments of three early female researchers – also highlighting the often daunting social obstacles these women had to overcome to persevere in their fields: Caroline Herschel, Ada Lovelace, and Sofia Kovalevskaya. Astronomer Caroline Herschel was the first woman to be honoured with the golden medal of the Royal Astronomical Society. Ada Lovelace is considered to have written instructions for the first computer program in 1848. Russian Sofia Kovalevskaya was to become the world's first female professor of mathematics. Read more on: www.mpg.de/female-pioneers-of-science

Why We Research with Animals

The animal research portal of the Max Planck Society has been updated. Numerous articles, background information, statistics and multi-media content explain why animal research is indispensable for basic research today and doubtless in the future, which animals are used for research and how researchers live up to their responsibilities. The white paper on animal research and a flyer for the public relations work of the Max Planck Institutes are available for download there. www.mpg.de/animal-studies-in-basic-research