



European Research Council
Executive Agency

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STOA-ERC event

'Investing in Young Researchers, Shaping Europe's Future'

31 May 2018

European Parliament, Strasbourg

EVENT REPORT

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Introduction

On 31 May 2018, researchers from the European Research Council (ERC) were invited to the European Parliament (EP) in Strasbourg as part of an event aiming at bringing together the worlds of policy-making and academia. The event was co-organised by STOA, the Science and Technology Assessment Panel of the EP, and the ERC, with the goal to showcase Europe's research and innovation efforts through programmes such as Horizon2020 and one of its most successful initiatives, the ERC.

The event also aimed at stimulating exchanges on the role of fundamental research in the future of Europe and the new EU research framework programme, Horizon Europe. The timing was ideal as the European Commission (EC) was still discussing the programme's specifications before announcing their proposal on 7 June 2018.

By organising a face-to-face encounter between some of the best scientists in the world and Members of the European Parliament (MEPs), the meeting hoped to encourage an open, honest debate about some pressing themes for our future. How will technological development impact our everyday lives? What role will science have in the reality of tomorrow? How can research and policy work together to shape the world we live in?

Participants

The EP was represented at this event by 14 MEPs, including STOA Chair Eva Kaili and First Vice-Chair Paul Rübig. The ERC was present with more than twenty of its young grantees, from every part of Europe and beyond, as well as with its President, Professor Jean-Pierre Bourguignon, and representatives of its governing body, the Scientific Council. The ERC grantees and MEPs met with EC representatives, Nobel Prize winners and other interested attendees to discuss some of Europe's most debated scientific issues. On the eve of the workshop, a networking event and a science-policy debate, moderated by Sir Philip Campbell, Editor in Chief of Nature magazine, took place with the participation of EP President Antonio Tajani and other MEPs, EC Vice-President Andrus Ansip, Commissioner for Research, Science and Innovation Carlos Moedas, and Bulgarian Education and Science Minister Krassimir Valchev.

About STOA

The STOA Panel is an integral part of the EP launched in 1987. STOA's task is to explore the impact of future techno-scientific trends, and identify and independently assess the impact of new and emerging technologies, in order to assist, with independent information, the MEPs in anticipating the consequences of developments in science and technology, and developing options for long-term, strategic policy-making. The Panel consists of the EP Vice-President responsible for STOA and twenty-four other MEPs nominated from the nine permanent parliamentary committees.

About the ERC

The ERC, established by the EC in 2007, is the first European funding organisation for excellent frontier research. Every year, the ERC selects and funds the very best, creative researchers of any nationality, to pursue ground-breaking, high-risk/high-gain research in Europe. Scientific excellence is the sole criterion of selection, without any policy priority. This 'bottom-up' approach has ensured that the ERC funding is channelled into new and promising areas of research with a greater degree of flexibility, recognising the evolution of scientific research.

Workshop

Scientists and politicians have a unique perspective when it comes to innovations and technology. What they don't often have is a platform to exchange their views and learn from each other. STOA and ERC are uniquely placed to offer this environment for debate. During the course of the event, six exchange sessions provided a forum for ERC grantees, MEPs and other participants to discuss burning techno-scientific issues of political relevance.

Modern energy solutions

Despite promising discoveries, today's energy consumption is still reliant on fossil-fuel burning. This session brought together experts who are trying to tackle this problem from various angles, from biomass and solar options, to fusion energy and increased-efficiency materials exploiting nanotechnologies. Researchers emphasised that, at the core of new technology, is a solid research basis that provides an understanding of the incredible potential of alternatives, such as microalgal biomass or solar-like nuclear fusion. Investing in new materials and infrastructures, such as different alternatives for fusion (tokamaks and stellarators), or long-lasting and energy efficient batteries is key. Support, both financial and regulatory, from public and also private institutions is necessary. This was recognised by ITRE President Jerzy Buzek and Commissioner Carlos Moedas. Both underlined that this is an important part of Horizon 2020, and will continue to feature in Horizon Europe.

Eco-efficient transport

From this session emerged a clear need to rethink the role of the car, symbol of our modern society. According to the ERC grantees present, experts in transport technologies and movement modelling, we do not only need new innovations, such as driverless and electric cars, but also a better pattern understanding. Using readily available data, it would be possible to focus on different solutions to optimise transport modes and systems, centred on improved public transport and better 'last mile solutions', particularly through shared mobility. Here they identified the crucial role of politicians in encouraging a shift in practices and putting in place the appropriate regulation, for example for data sharing to assist transport planning. MEP Henna Verkunnen, in her closing remarks, highlighted the trends of digitalisation and decarbonisation, stating that in Europe there is a good pool of ideas, but that we are lagging behind in implementation, calling for researchers, car manufacturers and policy-makers to come together.

Sustainable management of natural resources

The sustainable management of natural resources underpins several different topics that are on today's political agendas. In this session, ERC grantees investigating climate change and its effects on ecosystems, highlighted how widespread problems with resource management are. From shifts in weather patterns to food security, deforestation, pollution and demographic pressure, it would appear that almost every aspect of our lives has consequences for the natural environment. The role of researchers is important in understanding the systems, tipping points and feedback mechanisms. Policy-makers have a more complicated role, as their decisions will affect the behaviour of people. This calls for sound policies on agriculture and emissions on an interdisciplinary and trans-border level – something where Europe, as stressed by MEPs Eva Kaili and Paul Rübzig, can be a pivotal actor.

Digital revolution – potential and challenges of the Information Society

In our modern society, machines and algorithms are progressively taking over data management, data analysis and decision-making. To what extent is this shaping the world we live in? What potential, and pitfalls, do we need to look out for in today's digital revolution? To answer these questions, MEPs and ERC grantees came together to discuss topics such as artificial intelligence, big data, algorithms, machine learning and robotics. The developments that these tools made possible have opened the door to several challenges that policy-makers and scientists will have to tackle together. For example, what is going to happen to jobs replaced by machines, how will we handle transparency and legality issues, how will the use of data be regulated? MEPs Algirdas Saudargas and Claire Moody advocated proactive but cautious legislation, to take advantage of a process that isn't going to slow down.

Health and life sciences

This session underlined the crucial role of frontier science to provide the basis for new approaches, such as personalised medicine, gene therapy, CRISPR-Cas technology, medical nanotech and artificial organs to treat diseases. In order to ensure an efficient and smooth translation of such new advances into clinical implementation, better support is needed to secure uptake by industry and address regulatory hurdles, as well as to better manage the public health sector. As also pointed out by Commissioner Moedas, better communication by scientists is needed in order to manage not only expectations of fast delivery of results that media tend to impose on this sector, but also to address fundamental societal and ethical issues emerging from the application of new treatment approaches. Institutions need to actively help protect the privacy of citizens, for example through regulations such as the EU's GDPR and beyond, and they also need to put the necessary structures in place for the patient and citizen data to be accessed fairly by both the public and the private sector.

Science policy, communication and global networking

In an era of 'fake-news' and 'post-truth', is science still able to appeal to the society at large? How should science engage citizens? This session brought together ERC grantees, MEPs Anthea McIntyre and Isabelle Thomas, the Director General of the EC's DG RTD and the Chair of the EC Group of Chief Scientific Advisors, as well as representatives of some national parliaments and the Council of Europe. The discussion focused on where the research world can provide concrete examples of successful interaction between science and society. ERC grantees either employ new tools to communicate with the public, or study how citizens themselves interact with political events; examples include citizen science games, photovoice methodologies, citizens' assemblies, and involvement of caregivers or other relevant groups in research with children or patients. These efforts are to be nurtured by politicians to tackle the distrust in scientific evidence.

Conclusions

This joint ERC-STOA event was a useful occasion for stakeholders from the scientific and political worlds to interface and to exchange. It showed a receptiveness of both sides to each other's needs and to sharing expertise. At the same time, platforms like this event are needed to discover the extent of the knowledge available in the research world, the cutting-edge solutions that are being developed, and the challenges ahead. Scientists pass the torch to politicians and policy-makers when the consequences of their discoveries have social and ethical implications (for example in the areas of data protection, job security and behavioural changes). Policy-makers can benefit from being accompanied and briefed by researchers in the difficult task of protecting society against a potential negative use of these technological changes, but also of harnessing their great power.

Annex

Programme

	<i>Plenary part</i>	<i>Louise Weiss building (LOW), room N1.4</i>
08h30 – 08h40	Welcome by Eva KAILI, STOA Chair	
08h40 – 08h50	Welcome by Jean-Pierre BOURGUIGNON, ERC President	
08h50 – 09h10	Opening: Jerzy BUZEK, ITRE Chair Carlos MOEDAS, Commissioner for Research, Science and Innovation Jean-Marie LEHN, Nobel laureate	
09h10 – 09h15	Invitation to the exchange sessions by Eva KAILI, STOA Chair	

9h30-10h30	<i>Exchange sessions</i>
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(1) Modern energy solutions

Room LOW N3.3

Energy consumption in today's technological society is still heavily based on fossil fuel burning. A wide spectrum of renewable sources and energy efficiency measures could already today change the situation significantly. New energy sources appear set to become a practical reality within a couple of decades. Looking into the future, what will the energy landscape be like? How disruptive would be the appearance of a mostly clean and nearly inexhaustible source of electric energy? What are the legal, social and market challenges that clean technologies face?

(2) Eco-efficient transport

Room LOW N3.4

Transport has a large impact on our lives and on energy consumption, through daily commuting and through movement of goods all over the world. Decisions are needed at many levels in order to improve the efficiency of these activities, such as urban planning, strategic transnational networks and technology implementation. As in other areas, important social and ethical dimensions arise, linked to new technological capabilities. What technologies will change transport in the coming decades? What will be the role of technology in planning and decision-making? How can we ensure that social and ethical dimensions at local, regional and national levels are integrated in a democratic way in the decision-making process?

(3) Sustainable management of natural resources

Room LOW N3.5

The current production model is leading to exhaustion of the world's resources and accelerating global change. Natural resources are facing increasing pressures due to climate change, pollution, biological invasions and the search for rare mineral resources among others. Forward-looking policy-making and social transformations are needed to break the unsustainable cycle leading to the collapse of resources. What are the driving forces behind global change? What are the limits to ecosystems and species'

capacity to withstand change and recover from it? What policies and social transformations are needed to change the current production model?

(4) Digital revolution - Potential and challenges of the Information Society

Room LOW N1.4

Artificial intelligence, big data, algorithms, machine learning, robotics: everywhere efficient, powerful and ultrafast programmes take over data management, data analysis and decision-making. The scale of this shift is overwhelming: machines can already learn and build faster and better than ourselves; they can know our health and behavioural profiles and prompt us to act or consume accordingly. Strictly human aspects of society (communication and personal relations), as well as work, politics and diplomacy are being dramatically transformed by digital tools and cyber social media. Will there be work for everyone, and, if not, how will that affect our society, economic growth and workers' rights? Can we still drive this process for the benefit of the most (or for human benefit at all)? Who is in control? How long will democracy still have meaning in this context? For how long will society be (just) human?

(5) Health and life sciences

Room LOW N4.3

Frontier science is leading to exciting new discoveries that are changing at an unprecedented pace the way we can diagnose, treat or prevent diseases. These advances range from personalised medicine, gene therapy and CRISPR-Cas technology to nanotechnology and artificial organs. While the tremendous potential these advances offer is widely embraced, the inherent societal and ethical dimensions need to also be considered when establishing the regulatory framework. Is translational medicine a hope or a hype? How do we ensure advancements in new therapies lead to better treatments? What are the emerging ethical, legal and social implications these discoveries bring along?

(6) Science policy, communication and global networking

Room LOW N2.1

Science is no longer credible for many individuals at all levels of society; evidence is no longer enough to be credible beyond the scientific community. Social media and new communication platforms are driving those attitudes, despite the fact that a scientific and technological revolution is changing profoundly our lives. At the same time, a new trend is emerging: ordinary citizens, regardless of literacy or education, are actively engaging in scientific work, in numbers and at a scale that is only possible thanks those same digital communication platforms. How should science engage with society? What should be the role of society in order to reap the benefits from scientific advances and to drive them to where they want? Must all new technologies be adopted? What is the potential and function of 'citizen science'?

Plenary part

Room LOW N1.4

10h45 – 10h50	Introduction by Jean-Pierre BOURGUIGNON, ERC President
10h50 – 11h20	Feedback from exchange sessions
11h20 - 11h25	Conclusions by Martin KARPLUS, Nobel laureate
11h25 – 11h30	Closing by Eva KAILI, STOA Chair
