
STOA workshop

Should we fear the future?

Is it rational to be optimistic about artificial intelligence?

Participants' booklet



WORKSHOP
STOA | SCIENCE AND TECHNOLOGY OPTIONS ASSESSMENT

Thursday 19.10.2017 – **10:00-12:30**
EUROPEAN PARLIAMENT, BRUSSELS,
PAUL-HENRI SPAAK BUILDING – ROOM **5B001**

STEVEN PINKER

WELCOMED BY **MEP Eva KAILI**

CHAIRD BY **MEP TERESA GIMENEZ BARBAT**

INTRODUCED BY **Luis GARICANO**

SHOULD WE FEAR THE FUTURE?
Is it rational to be optimistic about artificial intelligence?

PANEL DEBATE

THOMAS METZINGER
PETER J. BENTLEY
OLLE HÄGGSTRÖM
MILES BRUNDAGE

Registration by 12.10.2017 on
www.europarl.europa.eu/stoa

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19 October 2017, 10:00-12:30
Paul-Henri Spaak 5B001
European Parliament, Brussels



Prepared by Philip Boucher, Scientific Foresight Unit (STOA)

Available at: <http://www.europarl.europa.eu/stoa/cms/home/workshops/AI>

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1. Programme

10.00 - 10.15	Opening Session María Teresa GIMÉNEZ BARBAT, MEP Eva KAILI, MEP and STOA Chair
10.15 - 11.00	Keynote Lecture: Should we fear the future Steven PINKER, Harvard University
11.00 - 12.25	Debate: Is it rational to be optimistic about artificial intelligence? Introduced and moderated by Steven PINKER Peter J BENTLEY, University College London Miles BRUNDAGE, University of Oxford Olle HÄGGSTRÖM, Chalmers University Thomas METZINGER, Johannes Gutenberg University of Mainz
12.25 - 12.30	Closing Remarks María Teresa GIMÉNEZ BARBAT

2. Introduction

Humans are, on the whole, living longer and healthier lives than ever before. For many, these basic measures are enough to conclude that the world is becoming a better place. However, when we look at the headlines, it is clear that there remains a great deal of human suffering. Indeed, if we consider the growing threats of climate change, rising sea levels and mass extinction, as well as nuclear threats and political instability, some would find few reasons to be cheerful. Depending upon which variables we prioritise (equality, biodiversity, violence, poverty, CO₂ levels, conflict, ozone layer depletion), and how we measure them, we can make rational arguments for optimistic or pessimistic views on the future of humanity.

The picture is equally mixed when we consider new technologies, such as artificial intelligence (AI), which are predicted to have a huge impact on the future of humanity, for better or worse. For example, AI could bring substantial benefits to several aspects of our lives, from weather predictions to cancer diagnostics. At the same time, concerns have been raised that it could threaten many jobs and take over important decision-making processes without transparency.

Well-known figures have joined both sides of the debate. For example, Elon Musk shared concerns that AI posed an existential threat to the human race, while Bill Gates countered that the technology will make us more productive and creative. Beyond the headlines, however, both Gates and Musk recognise the opportunities and challenges of AI and call for reflection on how we can manage its development in a way that maximises its benefits without exposing us to danger.

Today's workshop, chaired by Lead STOA Panel Member María Teresa GIMÉNEZ BARBAT (ALDE, Spain), presents an opportunity to learn more about these questions and participate in a debate with key experts in the subject.

The workshop will open with a keynote lecture from Steven PINKER (Harvard University), author of *The Better Angels of Our Nature* (2011, Viking Books) which argued that violence in the world is declining in the short- and long-term, and explored how this trend can be maintained into the future. He will introduce the subject of rational optimism and answer the question: 'Should we fear the future?'

This will be followed by a panel of four speakers who will explore AI technologies within this context, responding to the broad question of whether it is rational to be optimistic about AI. The panel will include presentations from Peter J. BENTLEY (University College London), Miles BRUNDAGE (University of Oxford), Olle HÄGGSTRÖM (Chalmers University) and Thomas METZINGER (Johannes Gutenberg University of Mainz). The panel will conclude with a Q&A session and a debate with all participants.

3. Speakers' Biographies

3.1. Eva KAILI, MEP & STOA Chair



Eva Kaili is Member of the European Parliament (2014-2019), head of the Greek S&D Delegation (PASOK/Elia) in the European Parliament, STOA Chair and ITRE representative on the STOA Panel.

Eva Kaili was elected twice to the Greek national parliament (2007-2012) with the Panhellenic Socialist Movement (PASOK). She holds a bachelor degree in Architecture and Civil Engineering, and has done postgraduate studies in European Politics. Currently, she is conducting her PhD in International Political Economy. In the European elections of 2014, Ms Kaili was elected, ranked-first, with the political scheme of 'Elia', and she is a Member of the European Socialists and Democrats (S&D).

In her capacity as the Chair of STOA she has been working intensively on promoting innovation as a driving force of the establishment of the European Digital Single Market. She has been particularly active in the fields of blockchain technology, m/eHealth, big data, fintech and cybersecurity and has been the rapporteur of the ITRE opinion on EFSI 2 file.

Eva Kaili chairs the Delegation for relations with the NATO Parliamentary Assembly (DNAT), and is a member of the Committee Industry, Research and Energy (ITRE). She is also a substitute member of the Committee on Economic and Monetary Affairs (ECON) and of the Committee on Employment and Social Affairs (EMPL), and a member of the Subcommittee on Security and Defence (SEDE).

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3.2. **María Teresa GIMÉNEZ BARBAT, MEP and Lead STOA Panel member**



Teresa Giménez Barbat studied anthropology at the University of Barcelona. She has written numerous books and articles. In 2008, she founded the association *Third Culture* in Spain to analyse social problems using scientific methods. In 2009, she promoted the *Secular Humanism Forum* for the promotion of ethical values independent of any religion. Since 2015, she is a Member of the European Parliament (MEP) having joined the Alliance of Liberals and Democrats for Europe political group (ALDE). She founded a platform entitled Euromind in the European Parliament to bring together scientists and politicians.

3.3. Steven PINKER, Harvard University



Steven Pinker is an experimental psychologist who conducts research in visual cognition, psycholinguistics, and social relations. He grew up in Montreal and earned his BA from McGill and his PhD from Harvard. Currently Johnstone Professor of Psychology at Harvard, he has also taught at Stanford and MIT. He has won numerous prizes for his research, his teaching, and his nine books, including *The Language Instinct*, *How the Mind Works*, *The Blank Slate*, *The Better Angels of Our Nature*, and *The Sense of Style*. He is an elected member of the National Academy of Sciences, a two-time Pulitzer Prize finalist, a Humanist of the Year, and one of *Foreign Policy*'s "World's Top 100 Public Intellectuals" and *Time*'s "100 Most Influential People in the World Today." He is Chair of the Usage Panel of the *American Heritage Dictionary*, and writes frequently for *The New York Times*, *The Guardian*, and other publications. His next book, to be published in February 2018, is called *Enlightenment Now: The Case for Reason, Science, Humanism, and Progress*.

3.4. Miles BRUNDAGE, University of Oxford



Miles Brundage is a Research Fellow at the University of Oxford's Future for Humanity Institute and a PhD candidate at Arizona State University in Human and Social Dimensions of Science and Technology. His research is focused on policy challenges related to artificial intelligence. Some of his recent publications have explored the economic implications of artificial intelligence and methods for measuring the development of artificial intelligence. He is also affiliated with the Consortium for Science, Policy and Outcomes (CSPO), the Virtual Institute of Responsible Innovation (VIRI), and the Journal of Responsible Innovation (JRI).

3.5. Peter J. BENTLEY, University College London



Peter J. Bentley Ph.D. B.Sc. (Hons) is an Honorary Professor and Teaching Fellow at the Department of Computer Science, University College London (UCL), Collaborating Professor at the Korean Advanced Institute for Science and Technology (KAIST), Chief Technology Officer at AI company [Braintree Ltd](#), co-founder of [Kazoova Ltd](#), a consultant and a freelance writer. Previously he was also a Visting Fellow at SIMTech, A*STAR, Singapore, Visiting Research Fellow at Goldsmiths College, London, Visiting Research Fellow at the University of Kent, Canterbury, and a contributing editor for WIRED UK.

Peter obtained a B.Sc. (Hon's) degree in Computer Science (Artificial Intelligence) in 1993 and a Ph.D. in evolutionary computation applied to design in 1996, at the age of 24. Peter runs the [Digital Biology Interest Group](#) at UCL. His research investigates evolutionary algorithms, computational development, artificial immune systems, swarming systems and other complex systems, applied to diverse applications including design, control, novel robotics, nanotechnology, fraud detection, mobile wireless devices, security, art and music composition. He is also author of the number one bestselling iPhone app *iStethoscope Pro*. Peter was nominated for the \$100,000 *Edge of Computation Prize* in 2005, and was a finalist for the *AAAS 2010 Science Books & Films Prize*.

Through his research and his books Peter often gives public lectures, takes part in debates, and appears on radio and television; he was the host of the monthly Royal Institution's Cafe Scientifique, and a Science Media Expert for the RI Science Media Centre. He is a regular science and technology writer for BBC Focus magazine. He regularly gives plenary speeches at international scientific conferences and is a consultant, convenor, chair and reviewer for workshops, conferences, journals and books in the field of evolutionary computation and complex systems. He has published over 250 scientific papers and is editor of the books *Evolutionary Design by Computers*, *Creative Evolutionary Systems* and *On Growth, Form and Computers*, and author of *The PhD Application Handbook* and the popular science books *Digital Biology*, *The Book of Numbers*, *The Undercover Scientist* and "Digitized".

3.6. Olle HÄGGSTRÖM, Chalmers University of Technology



Olle Häggström earned his Ph.D. in mathematical statistics in 1994, and has served as a professor of the same subject at Chalmers University of Technology since 2002. He is a member of the Nobel Prize-awarding Royal Swedish Academy of Sciences. His most noted research achievements are in probability theory and statistical mechanics, but his cross-disciplinary research interests are wide-ranging and include climate science, artificial intelligence and several branches of philosophy. He is the author of four books, most recently *Here Be Dragons: Science, Technology and the Future of Humanity* (Oxford University Press, 2016). He has more than 80 publications in scientific journals.

3.7. Thomas METZINGER, Johannes Gutenberg University of Mainz



Thomas Metzinger is currently Professor of Theoretical Philosophy at the Johannes Gutenberg-Universität Mainz and an Adjunct Fellow at the Frankfurt Institute for Advanced Study (FIAS). He is also Director of the Neuroethics Research Unit in Mainz and Director of the MIND Group at the FIAS.

Metzinger is past president of the German Cognitive Science Society (2005-2007) and of the Association for the Scientific Study of Consciousness (2009-2011). His focus of research lies in analytical philosophy of mind and cognitive science, as well as in connections between ethics, philosophy of mind and anthropology; he received several awards and Fellowships (see below), the last one being a 5-year GRC Fellowship by the Gutenberg Research College (2014-2019).

In the English language, Metzinger has edited two collections on consciousness *Conscious Experience*, Paderborn: mentis & Thorverton, UK: Imprint Academic, 1995; *Neural Correlates of Consciousness*, Cambridge, MA: MIT Press, 2000 and published one major scientific monograph developing a comprehensive, interdisciplinary theory about consciousness, the phenomenal self, and the first-person perspective *Being No One – The Self-Model Theory of Subjectivity*, Cambridge, MA: MIT Press, 2003. In 2009, he published a popular book, which addresses a wider audience and discusses the ethical, cultural and social consequences of consciousness research (*The Ego Tunnel – The Science of the Mind and the Myth of the Self*).

4. About STOA

4.1. Mission

The Science and Technology Options Assessment (STOA) Panel forms an integral part of the structure of the European Parliament. Launched in 1987, STOA is tasked with identifying and independently assessing the impact of new and emerging science and technologies.

The goal of its work is to assist, with independent information, the Members of the European Parliament (MEPs) in developing options for long-term, strategic policy-making.

The STOA Panel

The STOA Panel consists of 25 MEPs nominated from the nine permanent parliamentary committees: AGRI (Agriculture & Rural Development), CULT (Culture & Education), EMPL (Employment & Social Affairs), ENVI (Environment, Public Health & Food Safety), IMCO (Internal Market & Consumer Protection), ITRE (Industry, Research & Energy), JURI (Legal Affairs), LIBE (Civil Liberties, Justice and Home Affairs) and TRAN (Transport & Tourism).

Mr Ramón Luis VALCÁRCEL SISO MEP is the European Parliament Vice-President responsible for STOA for the second half of the 8th legislature. The STOA Chair for the second half of the 8th legislature is Eva Kaili with Paul Rübig and Evžen Tošenovský elected as 1st and 2nd Vice-Chairs respectively.

The STOA Approach

STOA fulfils its mission primarily by carrying out science-based projects. Whilst undertaking these projects, STOA assesses the widest possible range of options to support evidence-based policy decisions. A typical project investigates the impacts of both existing and emerging technology options and presents these in the form of studies and options briefs. These are publicly available for download via the STOA website: www.europarl.europa.eu/stoa/. Some of STOA's projects explore the long-term impacts of future techno-scientific trends, with the aim to support MEPs in anticipating the consequences of developments in science. Alongside its production of 'hard information', STOA communicates its findings to the European Parliament by organising public events throughout the year. STOA also runs the MEP-Scientist Pairing Scheme aimed at promoting mutual understanding and facilitating the establishment of lasting links between the scientific and policy-making communities.

Focus areas

STOA activities and products are varied and are designed to cover as wide a range of scientific and technological topics as possible, such as nano-safety, e-Democracy, bio-engineering, assistive technologies for people with disabilities, waste management, cybersecurity, smart energy grids, responsible research & innovation, sustainable agriculture and health.

They are grouped in five broad focus areas: eco-efficient transport and modern energy solutions; sustainable management of natural resources; potential and challenges of the Internet; health and life sciences; science policy, communication and global networking.

4.2. STOA Bureau



Ramón Luis VALCÁRCEL SISO
(EPP, ES)
EP Vice-President responsible for STOA

Eva KAILI (S&D, EL)
Chair of STOA

Committee on Industry, Research and Energy
(ITRE)



Paul RÜBIG (EPP, AT)
First Vice-Chair of STOA

Committee on Industry, Research and Energy
(ITRE)



Evžen TOŠENOVSKÝ (ECR, CZ)
Second Vice-Chair of STOA

Committee on Industry, Research and Energy
(ITRE)



4.3. STOA Panel members

	Panel Member	Committee		Panel Member	Committee
	Ramón Luis VALCÁRCEL SISO (EPP, ES) EP Vice-President STOA Bureau member			Carlos COELHO (PPE, PT)	IMCO
	Eva KAILI (S&D, EL) STOA Chair STOA Bureau member	ITRE		Mady DELVAUX (S&D, LU)	JURI
	Paul RÜBIG (EPP, AT) 1st STOA Vice-Chair - STOA Bureau member	ITRE		Christian EHLER (EPP, DE)	ITRE
	Evžen TOŠENOVSKÝ (ECR, CZ) 2nd STOA Vice-Chair - STOA Bureau member	ITRE		Maria Teresa GIMÉNEZ BARBAT (ALDE, ES)	CULT
	Jan Philipp ALBRECHT (Greens/EFA, DE)	LIBE		Andrzej GRZYB (EPP, PL)	ENVI
	Tiziana BEGHIN (EFDD, IT)	EMPL		Danuta JAZŁOWIECKA (EPP, PL)	EMPL
	Renata BRIANO (S&D, IT)	ENVI		Bogusław LIBERADZKI (S&D, PL)	TRAN

	Panel Member	Committee		Panel Member	Committee
	Anthea McINTYRE (ECR, UK)	AGRI		Virginie ROZIERE (S&D, FR)	IMCO
	Momchil NEKOV (S&D, BG)	AGRI		Claudia SCHMIDT (EPP, AT)	TRAN
	Marijana PETIR (EPP, HR)	AGRI		Kay SWINBURNE (ECR, UK)	ENVI
	Georgi PIRINSKI (S&D, BG)	EMPL		Neoklis SYLIKIOTIS (GUE/NGL, CY)	ITRE
	Michèle RIVASI (Greens/EFA, FR)	ITRE		Kosma ZŁOTOWSKI (ECR, PL)	TRAN
AGRI: Agriculture and Rural Development CULT: Culture and Education EMPL: Employment and Social Affairs ENVI: Environment, Public Health and Food Safety IMCO: Internal Market and Consumer Protection ITRE: Industry, Research and Energy JURI: Legal Affairs LIBE: Civil Liberties, Justice and Home Affairs TRAN: Transport and Tourism					

4.4. STOA administration

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