



2018 Altius Conference at Oxford

Educating for the Future

*Empowering the Human Mind and Redefining Values and Citizenship
in the Age of Technological Disruption*

28-30 SEPTEMBER 2018

Oxford Union, Debating Chamber
University of Oxford





Educating for the Future Empowering the Human Mind and Redefining Values and Citizenship in the Age of Technological Disruption

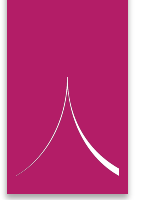
Introduction

The Altius Society was founded in 2012 with the aim of becoming the global forum where senior practitioners, academics, and political leaders, as well as young promising thought leaders gather to discuss the most relevant strategic trends of the 21st century and their impact on the future of our societies and our economies.

The necessity to foster interdisciplinary dialogue between young professionals who have proven excellence in their respective domains (academia, economics and private enterprise, politics and public service, philanthropy, and cultural creativity) lies at the heart of Altius.

The velocity and complexity of social change, the need to encourage a deep reflection and understanding of future global trends, and the awareness that tackling challenges requires not only an interdisciplinary approach that draws from numerous fields of intellectual and social life, but also a broad international perspective, convinced a group of graduate students at Harvard University and the University of Oxford of the benefits of an organization like Altius.

As a catalyzer of this multidisciplinary debate, every year Altius selects a major *Theme* which is discussed from five diverse perspectives –Scientific, Social, Cultural, Economic and Political,– brought by Altius Members as well as prominent leaders in the field.



Building upon our two previous Altius Themes ('*The Brain of the Future: Artificial Intelligence, Robotics and Automation, and Politics in the Age of Thinking Machines,*' and '*The Future of Communication: An Opportunity for Humankind and a Challenge to Democratic Societies*'), our debates in September 2018 at Oxford will explore the *Why* and the *How-to* unleash the human potential, and *augment* (rather than *replace*) human intelligence leveraging technology, as a means to ensure the stability of democratic societies and major economies in the 21st century.

The rising strength of **populist movements** across Europe and the United States might be the early manifestation of a broader and more structural long-term transformation taking place within western democracies. The rapid expansion of **decentralized communication platforms**, such as *Facebook*, *WhatsApp*, *YouTube* and *WeChat*, combined with the development and widespread adoption of **artificial intelligence technologies**, will drive a major transformation of the model of economic growth, labour markets and wealth creation, while posing significant pressure in the democratic political process. These trends highlight the importance of **empowering citizens**, both in terms of skills training as well as their overall critical thinking for democratic participation, as the single most relevant factor to ensure **viable economic growth** while preserving **social and political stability**.

Beyond a traditional analysis of 'Education', we will explore topics such as the need for developing **critical thinking and understanding** in our contemporary societies; the **future of educational institutions** amid the rapid economic and social transformation enabled by technological disruption, and its impact for **the future of work**; training and instruction to prepare for increasingly complex economies and societies; the need to redefine human values and citizenship and the requirement of a new paradigm of national and global governance; and chiefly, **the empowerment of the human mind**, to build on the benefits of *the Age of Artificial Cognitive Machines*, while overcoming the challenges of large scale automation and the disruption of communication technologies: the '*machine*' as a means to augment rather than substitute human potential.

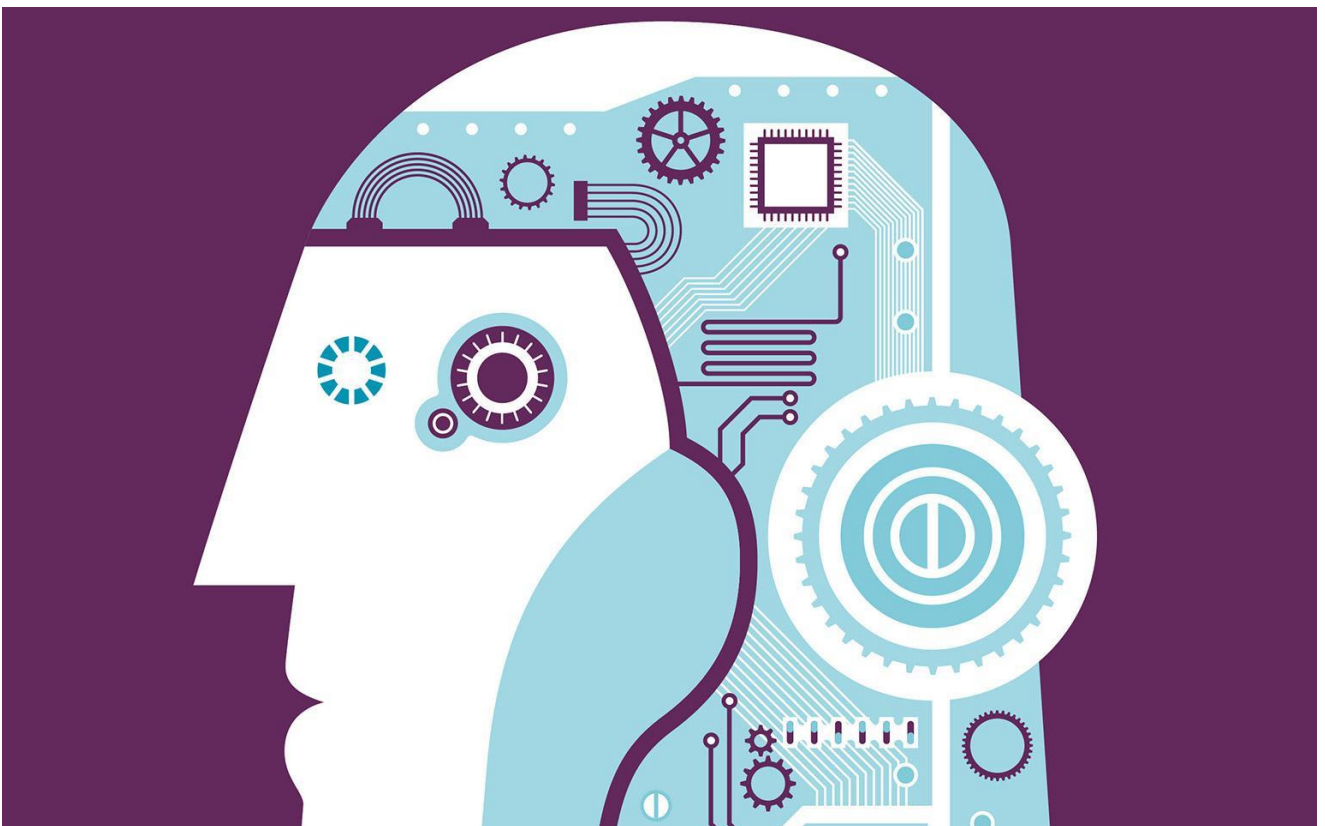
Major questions arise in light of this transformation. What kind of 'minds' must we build to cope with the challenges of this interconnected world, in which abundance of information does not necessarily lead to an adequate development of human capacities? Can we enable a true '**Renaissance of human thinking,**' or will the increasing presence of technology in virtually all domains of human existence negatively affect human knowledge and the fruitful exchange of ideas? This Theme will allow us to explore one of the most significant vectors of change of our time: *The Rise of the Human-Machine Collective Mind*, understanding '*machine*' as a concept beyond its physical connotations.

The Conference will take place at the Oxford Union Debating Chamber, one of the world's most prestigious debating venues, and it will be structured in five major lines of discussion:

1. **The State-of-the-Art Research** and applications of future AI and education technologies
2. **The Short-Term Disruption:** The challenge to democratic societies by unsupervised communication platforms, and the role of critical analytical thinking



3. **The Medium-Term Implications:** Economic challenges and opportunities posed by the underlying economic transformation, the future of labor markets, the economics of education and education-driven inequality (& vice-versa)
4. **The Long-Term View:** Philosophical and ethical debates on *Truth, Human Intelligence, Human Identity, and the Role of the Human Species*
5. **The Global Perspective:** the impact on the *Global Geopolitical Architecture* and the future role of *Multilateralism and International Organizations*





Friday, September 28th

15:00-15:30 Registration, Oxford Union, Debating Chamber

15:30-15:45 Welcome Remarks, by Alexandre Pérez Casares, President of Altius

15:45-16:30 Opening Address

"The Role of Science and Education for the Future of Democratic Societies in the 21st Century"

A Keynote by Peter Agre, 2003 Nobel laureate in Chemistry, Bloomberg Distinguished Professor at the Johns Hopkins Bloomberg School of Public Health and Johns Hopkins School of Medicine, and director of the Johns Hopkins Malaria Research Institute.

Introduced by Carlos Blanco

16:30-17:15 Keynote

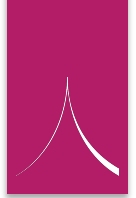
"Sustainable Development by Design: Technology, Policy, Politics and Ethics"

A Keynote by Jeffrey Sachs (AV), Director of the Center for Sustainable Development and University Professor at Columbia University, Special Advisor to the UN Secretary-General António Guterres. Author of 'The End of Poverty: Economic Possibilities of Our Time' (2005) and 'The Price of Civilization' (2012).

Introduced by Maxime Parmentier

17:15-19:15 Section 1: Educating in a World Driven by Artificial Intelligence (AI).
State-of-the-art Research and Applications of AI and Education Technologies. What to Expect in the Coming Two Decades

Format: Expert presentations and discussion of the state-of-the-art research and technologies.



Sub topics:

1. The Role of AI as catalyzer of enhancements in human intelligence and empowerment
2. Human-AI Interaction: the future of coexistence between humanity and artificial systems
3. State-of-the-art research and applications of future AI and education technologies: How could 'learning' be transformed by AI in education (AIEd)?
4. The design and evaluation of education technologies leveraging machine learning

Speakers:

- **Rose Luckin**, Professor of Education at University College London (UCL). Author of *'Intelligence Unleashed, an Argument for Artificial Intelligence (AI) in Education'* (2016), and *'Enhancing Learning and Teaching with Technology: What the Research Says'* (2018). Director of EDUCATE, the London hub for education startups.
- **Manuela Veloso**, Head of Artificial Intelligence (AI) Research at J.P. Morgan, Head of the Machine Learning Department at Carnegie Mellon University, widely considered the preeminent institution in the field. Past president of the Association for the Advancement of Artificial Intelligence (AAAI) and co-founder and Past President of the RoboCup Federation.
- **David Berry**, Professor of Digital Humanities and Co-Director of the Sussex Humanities Lab, author of *'Digital Humanities'* (2017) and *'The Philosophy of Software'* (2011). Forthcoming: *'Reassembling the University: The Idea of a University in a Digital Age'* and *'Philosophy After Computation'*.

Chair: *Jacobo Roa Vicens, University College of London - Doctoral Training Centre for Financial Computing & Analytics, and Department of Statistical Science.*



19:30-21:00 Dinner & Dialogue at Pembroke College Dining Hall

"Empowering Women in the 21st Century – A Case Study"

Keynote by Lady Barbara Judge, CBE

Chairman of the Astana Financial Services Authority, UK Business Ambassador (by Prime Ministerial appointment), Chairman of Cifas, Chairman of The Cambridge Code. Former Chairman of the UK Atomic Energy Authority, Chairman of the UK Pension Protection Fund, and the youngest-ever Commissioner of the US Securities and Exchange Commission.

Introduced by Pamina Smith



Saturday, September 29th

09:00-11:15 Section 2. The Long-Term & Philosophical Perspective:

Empowering the Human Mind in the Age of Artificial Cognitive Machines, the Future of 'Truth' and Rationality, and the Role of Humanities and Creativity

Format: Keynote presentations followed by a discussion.

Opening Keynote

"The Synthesizing Mind"

A Keynote by Howard Gardner, John H. and Elisabeth A. Hobbs Professor of Cognition and Education at the Harvard Graduate School of Education at Harvard University, co-founder of "The Good Project" at Harvard University, and Senior Director of Harvard Project Zero. Author of 'Five Minds for the Future' (2005), and 'Frames of Mind: The Theory of Multiple Intelligence' (1983).

◆ 'On Truth': A Philosophical Look at Biased Reasoning

Keynote by Simon Blackburn, Fellow of Trinity College, Cambridge, and former Bertrand Russell Professor of Philosophy at the University of Cambridge, Fellow of Pembroke College and president of the Aristotelian Society. More recently, he has gained a large general audience from his efforts to popularize philosophy. Author of the highly acclaimed *Truth: A Guide for the Perplexed* (2005), and *On Truth* (2018).

◆ Mathematics and Science Education for Imagined Futures

Anne Watson, Emeritus Professor, Oxford University Department of Education, Fellow of the Institute for Mathematics and its Applications. She has published numerous books for teachers and teacher educators on every continent, including *Key Ideas in Teaching Mathematics*.

Discussion sub-topics:

1. New ways of learning and thinking for a time of change
2. The renaissance of human thinking: the role of the humanities and creativity



3. The future of human identity and the coexistence between the human mind and artificial cognitive machines. Towards a 'Meta Brain'
4. The myth of freedom in the age of disintermediation of information and big data
5. Critical thinking, inquiry and understanding: An imperative to ensure the viability of a liberal society?

Chair: Carlos Blanco, Associate Professor of Philosophy at Universidad Pontificia de Comillas

11:30-12:00 Group Photo

12:00-12:45 Keynote and Dialogue

"Reinventing Education: École 42, A Digital Transformation in Education"

By Olivier Crouzet

Dean of Studies at École 42 Paris, a revolutionary school of computer science, and former Dean of Epitech, Paris Graduate School of Digital Innovation.

Introduced by Yves-Alexandre de Montjoye

12:45-13:45 Lunch Break at the Oxford Union Goodman Library

13:45-16:15 Section 3. The Political Economy of the Future:

Framing the Foundations of a New Economic Paradigm for the 21st Century.

Format: Keynote presentations, followed by discussion

Part I. Was Milton Friedman Partially Wrong? Economic Prosperity, Welfare and the Role of the Private/Public Sectors. A Leap Forward in Governance.

Opening Keynote by Oliver Hart

"Does Serving Shareholders Mean Putting Profit Above All Else?"

2016 Nobel laureate in Economics, Andrew E. Furer Professor of Economics at Harvard University. Past president of the American Law and Economics Association and a vice president of the American Economic Association.

Keynote supported by WilmotML



◆ **'Beyond Economic Development. The Role of Civil Society and the Private Sector in delivering Economic Advancement'**

Remarks by Sean Hinton, CEO of the Soros Economic Development Fund and Director of the Economic Advancement Program, Open Society Foundations.

Part II. Evolving Economic Research and Education, and its Impact in other Fields

Keynote by Joshua Angrist

"Undergraduate Econometrics Instruction: Through Our Classes, Darkly"

Ford Professor of Economics and Director of MIT's School Effectiveness and Inequality Initiative. Research Associate at the National Bureau of Economic Research. Professor Angrist is one of the most-cited economists, according to the Federal Reserve Bank of St. Louis, particularly in the field of the economics of education and school reform.

Part III. The Role of Public Investment for Innovation

◆ **Remarks by Mikołaj Dowgielewicz**, Director General at the European Investment Bank (EIB), the world's largest multilateral borrower and lender, and Permanent Representative of the EIB to the European Union institutions. Former Polish Minister for European Affairs (2007-2012).

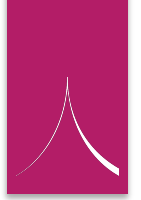
Discussion sub-topics:

1. The Post-Industrial Corporation. The Boundaries of the Firm, Labor and the Need for a New Economic Paradigm
2. The Future of Social Programs and the Labor Market in a World of Increasing Presence of Artificial Cognitive Machines
3. Could 'Income Inequality' Cloud 'Education' as the Great Equalizer?
4. Does Knowledge Trump All? The Role of Wisdom, Know-how and Skills in the Economy of the Future
5. Promise and Peril of Globalization and the Digitization of the Market Economy
6. Economic Policy, Governance and Public Institutions in the Age of Technological Disruption

Chair: Alexandre Pérez Casares, President of The Altius Society



16:15-17:00 Coffee Break at the Oxford Union



17:00-19:15 Section 4. The Global Perspective:

Global Politics, Leadership and Governance in the Age of Disintermediated Information. Towards a New Balance of Power

Format: Keynote Presentations followed by panel discussion

Sub topics:

1. Nationalism vs. Globalism: The New Political Divide
2. The Evolution of Soft-Power in the Post-Truth Era
3. Prosperity and Security in a Networked World
4. Global Existential Risks in a World of Increased Complexity in light of the New Challenges to Intellectual Authority
5. The Viability of Representative Democracies in Increasingly Connected Societies

◆ ***Towards a New Paradigm of Multilateralism for a Viable 'New World Order'***

Keynote Presentation by Miguel Angel Moratinos, former Minister of Foreign Affairs of Spain (2004-2010), European Union Special Representative for the Middle East (1996-2003), and Chairman-in-Office of the Organization for Security and Co-operation in Europe (OSCE, 2007).

◆ ***Political Leadership in the 21st Century***

Keynote Presentation by Archie Brown, Emeritus Professor of Politics at Oxford University and an Emeritus Fellow of St Antony's. Twice recipient of the W.J.M. Mackenzie Prize of the Political Studies Association of the UK for the best political science book of the year, and author of *The Myth of the Strong Leader: Political Leadership in the Modern Age*, selected by Bill Gates as one of the best five books in 2016.

Additional panel speakers/discussants:

- "The Age of Responsibility", by Altius member **Marcin Kilanowski**, Associate Professor Department of Law at Nicolaus Copernicus University
- Remarks by H.E. **Maciej Heydel**, Ambassador of the Order of Malta to Germany, former Deputy Treasury Minister of Poland
- "Democracy is Complexity. Rethinking Education to Inhabit the Future." Remarks by **Piero Dominici**, Piero Dominici, Scientific Director of the Complexity Education Program, Professor of Sociology and Communication, University of Perugia

Chair: **Mona Caroline Chammas**, Attorney and Integrity Director at Govern&Law



19:30-21:30 Drinks Reception & Dinner at Balliol College

*"The Future of Advocacy: When Science and Research are Not Enough.
The Case of GMOs"*

Keynote By Sir Richard Roberts, 1993 Nobel laureate in Medicine for the discovery of the mechanism of gene-splicing, Fellow of the Royal Society, Chairman of The Laureate Science Alliance

Discussant: Vanessa Neumann, President & Founder of Asymmetrica, Washington DC

Chair: Thomas Dermine, Head of Delivery Unit, CATCH Charleroi, Belgium



Sunday, September 30th

9:15-10:15 **Keynote and Discussion**

"Assessing the Quality of our Education"

A Keynote by Andreas Schleicher (AV), Director for the Directorate of Education and Skills at the OECD, and Special Advisor on Education Policy to the Secretary-General. The work of the Directorate includes the Programme for International Student Assessment (PISA)

Introduced by Tania Esparza

10:15-10:45 **Coffee Break** at the Oxford Union Goodman Library

10:45-11:30 **"A Learning Revolution"**

A Keynote by Alex Beard, former English teacher in a London comprehensive, currently a senior director at Teach For All, a global network of organizations working to ensure that the learning systems of tomorrow ensure all children fulfil their potential. Author of *"Natural Born Leaders: Our Incredible Capacity to Learn and How We Can Harness It"* (2018)

Introduced by Thomas Upchurch

11:30-12:20 **Keynote and Dialogue**

"Staying Rational"

A Keynote by Peter Atkins, Emeritus Professor of Chemistry at the University of Oxford, Fellow of the Royal Society of Chemistry, and author of a number of popular science books, including *'Atkins' Molecules*, *Galileo's Finger: The Ten Great Ideas of Science* and *'On Being'*.

Introduced by Oscar Jonsson



12:20-13:00 Closing Address

"Education, Disruption and Existential Threat"

By Sheldon Glashow, 1979 Nobel laureate in Physics, key contributor to the Standard Model of Physics, Higgins Professor of Physics Emeritus, Harvard University, Arthur Metcalf Professor of Science and Mathematics, Boston University

Introduced by Alberto Coca



13:00-13:45 Closing Remarks and Final Discussion

Format: Open debate and contribution to the summary of key action themes. The session will start with a *summary of key arguments* emerging from each of the major sections, after which the full group will engage in a timed open discussion that will conclude with the prioritization of the '*3 major themes of action*'. These themes will be further developed after the conference.

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Macro Advisory · Machine Learning · Investments

