

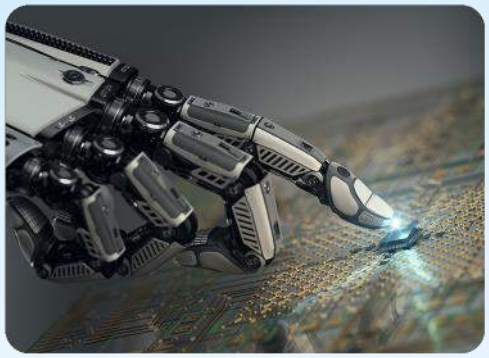

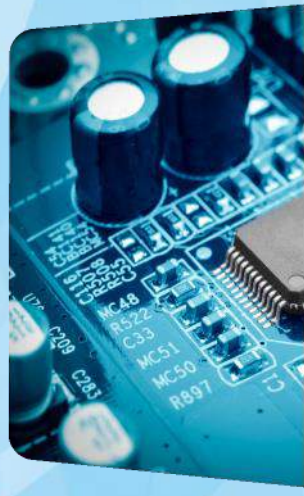

Civil Law Rules on Robotics: Prioritizing Human Well-being in the Age of Artificial Intelligence

K4I Forum Dinner Debate in cooperation with IEEE

knowledge 4 innovation

K4I Forum of the European Parliament

#WB4EAI

IEEE

Welcome

Mady Delvaux

Member of The European Parliament (MEP)

IEEE

Welcome

John C. Havens
Executive Director,
The IEEE Global Initiative for Ethical Considerations
in Artificial Intelligence and Autonomous Systems

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Well-Being for Ethical Artificial Intelligence

Our Hashtag for The Evening

Prioritizing Human Well-Being:
OECD Frameworks as Metrics for AI

Fabrice Murtin
Senior Economist, Household Statistics and Progress Measurement Division, OECD Statistics Directorate

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MEASURING WELL-BEING

Fabrice Murtin
OECD, Statistics Directorate
Households Statistics and Progress Measurement

IEEE Conference
Brussels, 11th April 2017

OCDE
DES POLITIQUES MEILLEURES POUR UNE VIE MEILLEURE

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Why 'Going Beyond GDP'? Rational and Initiatives

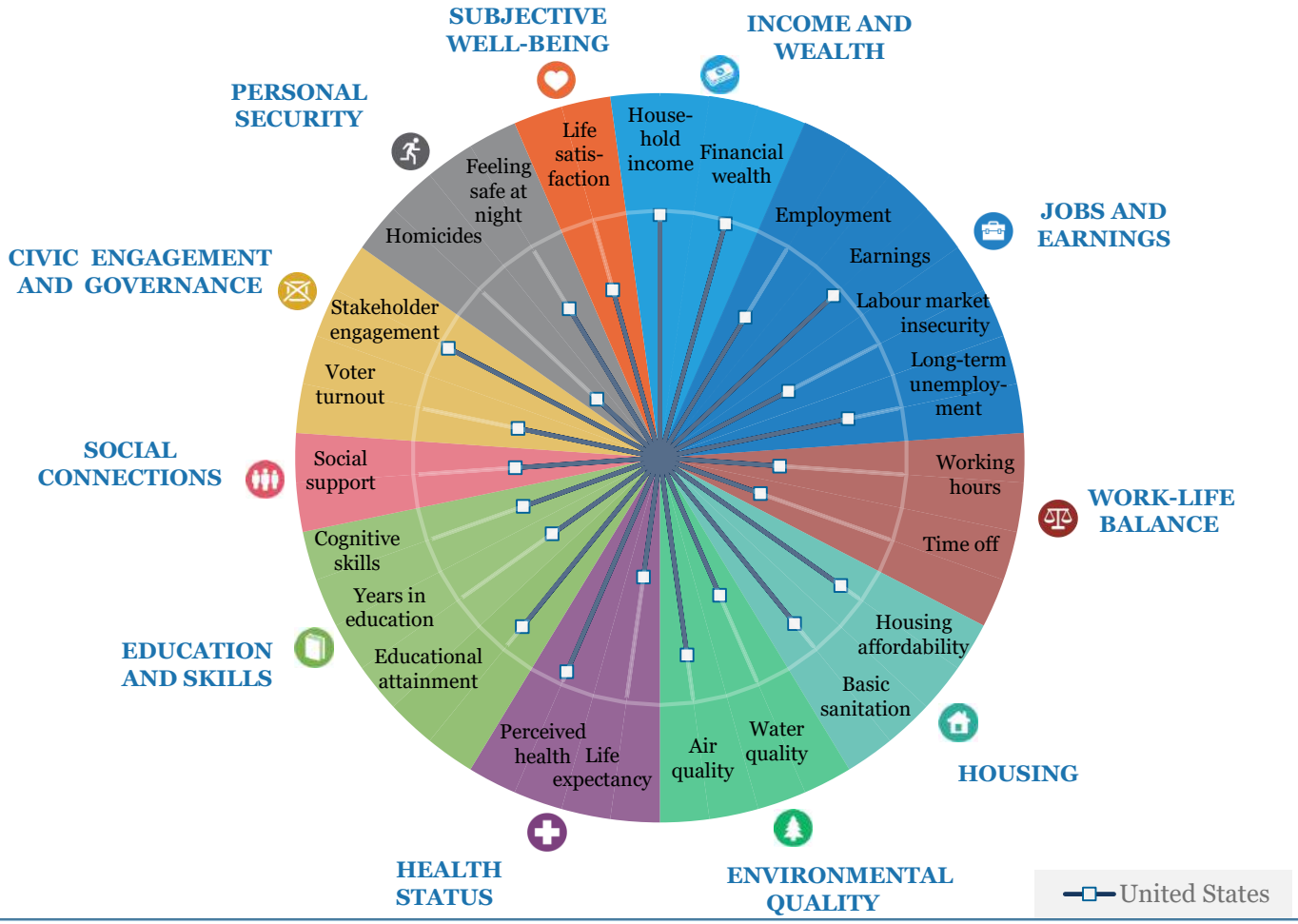
- ✓ GDP is a good and necessary measure of economic activity, but a poor measure of **people's well-being** :
  1. It does not reflect the diversity of households' situation (inequality)
  2. It does not account for the many dimensions of well-being (health, environment, work-life balance etc…)
- ✓ Landmark: Stiglitz-Sen-Fitoussi Commission (2009)
- ✓ The OECD Better Life Index (BLI)
- ✓ EU communication on 'GDP and Beyond' and '2020 Agenda'
- ✓ UN: Sustainable Development Goals (SDGs)
- ✓ Use of well-being indicators for public policy: Bhutan, New-Zealand, Finland, Slovenia, UK, Germany, France

‘Going Beyond GDP’: Measurement

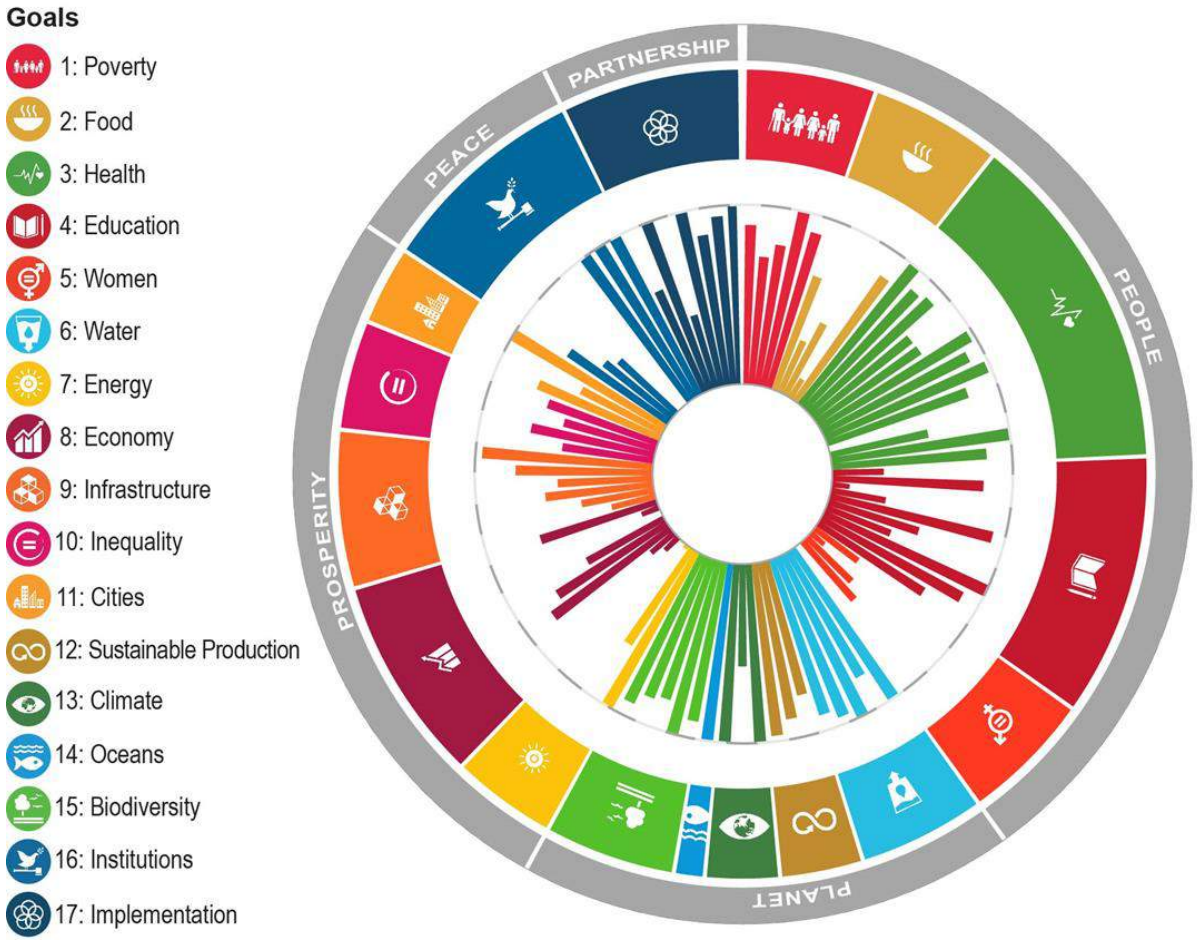
- ✓ **The dashboard approach:**
  1. Select indicators for each dimension of people’s well-being and compare countries dimension by dimension
  2. Document average outcomes but also inequalities in outcomes
  3. OECD BLIs: available for countries/regions/cities
  4. Unlike Human Development Index (HDI), do not aggregate dimensions into a single indicator as weights (‘exchange rates’) between dimensions are unknown

- ✓ **Single-indicator approach:**
  1. Subjective Well-being (survey-based): Life evaluation, Happiness
  2. Human Development Index: issues in changes over time
  3. OECD Multi-dimensional Living Standards Index (MDLS) uses weights that reflect people preferences for income, longevity and unemployment.

The BLI in the US



Measuring Distance to SDG Targets (NLD)



OECD *Going Digital* project: How are digital technologies affecting people's life? (1)

Impacts (positive and negative) on :

- *Material conditions:*
  - Negative job effects through automation, robotics, machine learning, displacements of unskilled and skilled jobs in industry and service sectors.
  - Scalable jobs (at zero marginal costs) strengthens "winner take-all-markets", greater inequalities at the top.
  - Positive effects in terms of choice, consumer surplus, etc.
- *Quality of life:*
  - **Health**: positive effects from digital technologies and healthcare management but possibly higher inequalities in quality of care, mental health problems linked to numerical addiction.
  - **Skills:** more school competencies becoming obsolete, more graduates taking up jobs that do not require college degree, but also more opportunities for remote access to quality learning.
  - **Work-life balance:** higher flexibility for tele-working but also greater intrusion of work into family life.

How are digital technologies affecting people's life? (2)

- **Social connections**: broader access to internet, more contacts through social media but also inequality in use and displacement of face-to-face relations.
- **Personal security:** better personal protection but also privacy issues, cyber crimes.
- ***Environment:*** smarter cities, better monitoring of pollution, access to environmental amenities, land conversions parks.
- **Civic engagement**: opportunities for e-government, easier access to social services but also polarisation of political views as people increasingly interact with like-minded people, lower trust in institutions.

➢ ***Goal: identify a set of indicators to monitor the consequences of digitalisation on people's life (rather that the economy at large), while focusing on all dimensions of well-being***

Thank you!

Fabrice.Murtin@oecd.org

Panel

From Ethics to Economics: Wellbeing and AI

Raja Chatila
Juha Heikkilä
Salla Saastamoinen

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Panel

From Wellbeing to the World: The Law and Liability

Virginia Dignum
Fabrice Murtin
Vincent C. Müller

IEEE

Break

10 Minutes

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Announcements

The IEEE Global Initiative

The IEEE European Public Policy Initiative Working Group on ICT

Raja Chatila
Pétia Georgieva

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Report

Toward a Controlled, Useful and Demystified Artificial Intelligence

Claude de Ganay
Mehdi Benhabri

IEEE

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

Mr Claude de GANAY
Deputy
Member of the OPECST
Rapporteur

Mrs Dominique GILLOT
Senator
Member of the OPECST
Rapporteur

The Parliamentary Office for scientific and technological assessment (OPECST) unanimously adopted a report entitled "**Toward a Controlled, Useful and Demystified Artificial Intelligence**" on 14 March 2017.

The questions raised by AI for our societies are numerous: What are the emerging **opportunities and risks**? Are France and Europe well positioned in the world race that has started? What are the **respective roles for public research and private research**? What kind of cooperation should exist between these two sectors? What are the **priorities for investing** in artificial intelligence research? What **ethical, legal and policy principles** should guide the new technologies? Should regulation take place at national, EU, or international level?

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

The **international surge of artificial intelligence** with significant attention in the mainstream media and among the general public was little over two years ago, in January 2015, when 700 researchers and entrepreneurs signed an open letter *"Research Priorities for Robust and Beneficial Artificial Intelligence"*. Their purpose was to **warn about the potential dangers of AI**.

It is striking that there was **neither scientific basis nor serious argument** to support this first warning about the **alleged risk of AI malicious misuse**.

Though this alert was not backed by justification or proof, it **fueled the fears and irrational anxieties** facing the deployment of artificial intelligence technologies.

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

Following the publication of the letter, initiatives in the area of artificial intelligence have grown at an unprecedented pace throughout the year 2016. While progress is exponential and increasingly backed by private funding with considerable resources, it is **essential to rationally assess and highlight the opportunities as well as the risks** of artificial intelligence, to reassure the public and demystify the biased representations of AI.

These unwarranted representations, which can be totally opposed, are accentuated by the general phase of progress in which we are situated: indeed, the recent period can be seen as the "spring of artificial intelligence". This is a period of polarized opinions, both **excessive anxieties**, as well as **excessive hopes**: the cycles of hopes and disappointments that mark the history of artificial intelligence invite us to be cautious and to demonstrate realistic expectations of these technologies.

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

The concept of artificial intelligence refers to **multiple technologies**, which rely on the **use of algorithms** and were **designed in the second half of the 20th century**.

These technologies, whose combinations are constantly evolving, are already being **implemented in a wide range of sectors** and have led to **unprecedented opportunities to revolutionize our day to day environment and improve our lives** especially in matter of care for people.

Developments are rapid and the current or future sectorial applications are of considerable scope including **education, environment, energy, transport, aeronautics, agriculture, trade, finance, defense, security, communications, recreation, health, dependency, disability** and countless others.

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

The report **"Toward a Controlled, Useful, and Demystified Artificial Intelligence"** provides comprehensive research on what is called "artificial intelligence" and **reviews many recent reports** published on the subject in France and worldwide.

The report also presents the **ethical, legal, economic, social and scientific challenges of these technologies**. Some of the topics discussed include: the dominant role of private research, led by American and potentially Chinese companies; accelerating the transition to a dominated globalized economy by "platforms" (like Google, Facebook or Amazon…); labor market transformations; liability regimes; biases and problems of data and algorithms; the phenomenon of "black boxes" of algorithms and the question of "information bubbles" or "filter bubbles". The report also addresses issues of inquiry related to "singularity", "NBIC convergence" and "transhumanism", as well as the **increasing need to take into account ethical rules**.

French Republic

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Artificial intelligence technologies represents **a major shift that is deeply transforming our societies and economies**. They are first and foremost **beneficial**. Their rise remains a subject to constraints of social acceptability, because of **alarmist visions**. However, it can't be denied that they **also involve risks**. But these risks can and have to be **anticipated, identified, and mitigated**.

The advent of **super-intelligence** is not part of these risks in the short to medium term. In the long run, **the reality of this threat is uncertain**. As for its imminence in the short or medium term, prophesied by several media figures, it is just a **fantasy**.

Artificial intelligence represents an opportunity for our societies and economies; it is **neither a vain quest nor a plan to replace man by machine**. the report is convinced of the **man-machine complementarity**. We are moving toward an **augmented human intelligence** rather than an artificial intelligence competing with man.

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

THE RECOMMENDATIONS OF THE REPORT : I. <u>Controlled artificial intelligence</u>

Proposal n° 1: Avoid excessive legal constraints on artificial intelligence research. If a legal framework regulating AI is adopted, it should be **European, or even international**, rather than national.

Proposal n° 2: Encourage **safe, transparent and fair algorithms and robots**, while providing a **charter of artificial intelligence and robotics**.

Proposal n° 3: **Train students in ethics of artificial intelligence and robotics** within specialized courses in higher education.

Proposal n° 4: The public debate on the ethical principles guiding these technologies should be led by a **national institute for artificial intelligence and robotic ethics**.

Proposal n° 5: Assist labour market transformations resulting from artificial intelligence and robotics by pursuing **ambitious education and lifelong learning policies** aimed at **adapting improvement and requalification of skills**.

French Republic

THE PARLIAMENTARY OFFICE FOR SCIENTIFIC AND TECHNOLOGICAL ASSESSMENT (OPECST)

THE RECOMMENDATIONS OF THE REPORT : II. <u>Useful artificial intelligence, at the service of humans and humanist values</u>

Proposal n° 6: Restore the importance of **basic research** and reassert the place of **public research** in relation to private research, while encouraging their **cooperation**.

Proposal n° 7: Encourage the creation of **European champions** in artificial intelligence and robotics while continuing support for **specialized SMEs, especially start-ups**

Proposal n° 8: Focus investments in artificial intelligence research towards **discoveries bringing social benefits**.

Proposal n° 9: Expand the curriculum of artificial intelligence technologies in higher education and create – in France – at least one **international and interdisciplinary center of excellence** in artificial intelligence and robotics.

Proposal n° 10: **Structure and mobilize the French community** in artificial intelligence by **organizing national level competitions** and awards aimed at promoting AI research, for instance regarding treatment of **labeled national data bases**.

Proposal n° 11: **Promote diversity and women** in field of artificial intelligence research.

THE RECOMMENDATIONS OF THE REPORT

III. <u>Demystify artificial intelligence</u>

Proposal n° 12: Organizing **computer training in primary and secondary education** specifically **highlighting artificial intelligence and robotics**.

Proposal n° 13: **Raise public awareness** of artificial intelligence through "**PR and public service campaigns**", **international exhibitions** promoting artificial intelligence and robotics, and the **broadcasting of educational television programs**.

Proposal n° 14: Increase public awareness of the **practical consequences** of artificial intelligence and robotization.

Proposal n° 15: Be **vigilant about the extravagant and alarmist uses** of the concept of artificial intelligence and robotics.

Impulse Statements

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Wrap Up / Announcement

The Wellbeing for Ethical AI Project

John C. Havens

IEEE

Wrap Up / Special Thanks

Wrap Up / Join Us Afterwards

Place du Luxembourg 11

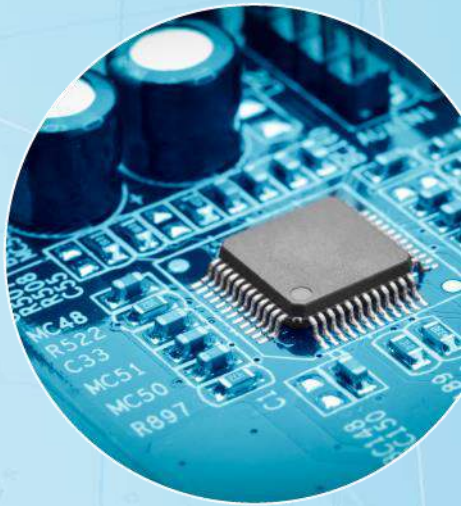
Farewell

Mady Delvaux

Member of The European Parliament (MEP)

IEEE

Thank you!



The IEEE Global Initiative for Ethical Considerations in Artificial Intelligence and Autonomous Systems

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