

## Governing Artificial Intelligence: A Critical Global Assessment and Future Outlook

A Critical Global Assessment and Future Outlook  
governing artificial intelligence:

**Rostam J. NEUWIRTH**

Distinguished Professor of Law  
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Faculty of Law / University of Macau

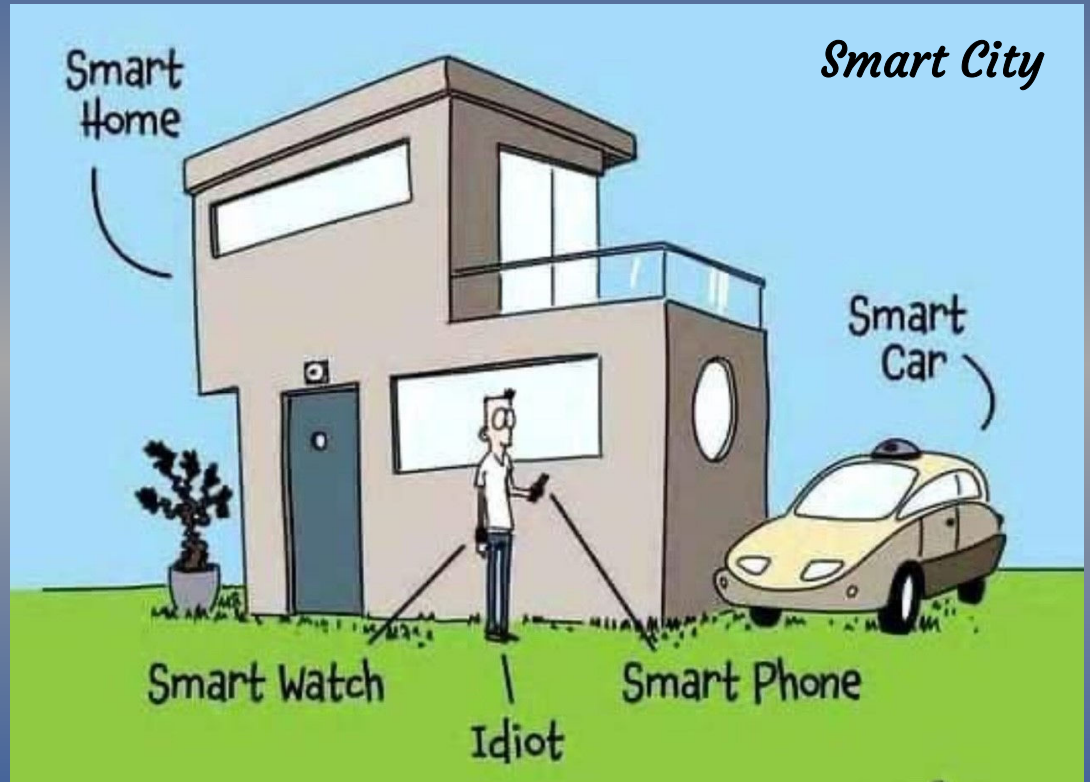


# Global AI Governance

Global AI Governance

- AI – A Misnomer?
- The ‘AI Race’ Narrative – Misconceptions?
- AI Regulation – Lessons to be Learned?
- Institutional Aspects of AI Governance – Creative Destruction?
- Concluding Outlook

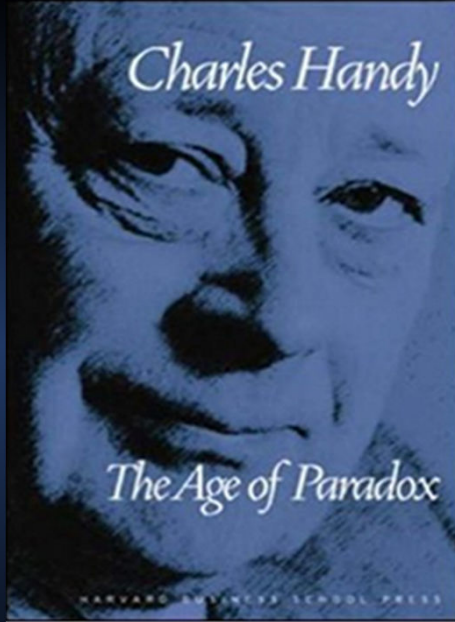
# AI as a 'Misnomer'



*“For some, **digital humanism** seems a contradiction in terms, i.e. an **oxymoron** that puts the two opposites of the human and the non-human in one phrase to reveal a paradox.”*

Erich Prem, “Principles of digital humanism: A critical post-humanist view” (2024) *Journal of Responsible Technology* 17: 100075

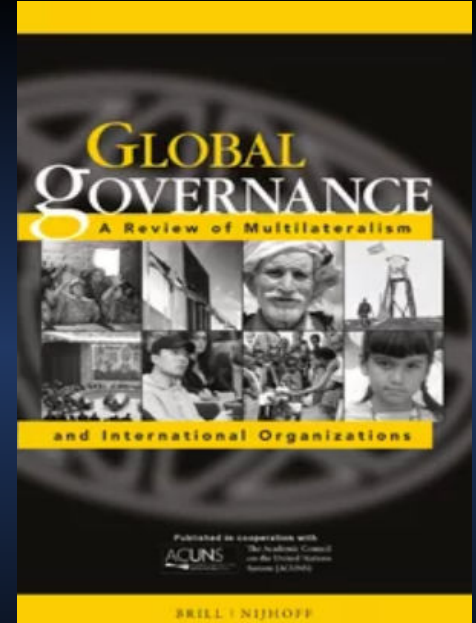
# Present

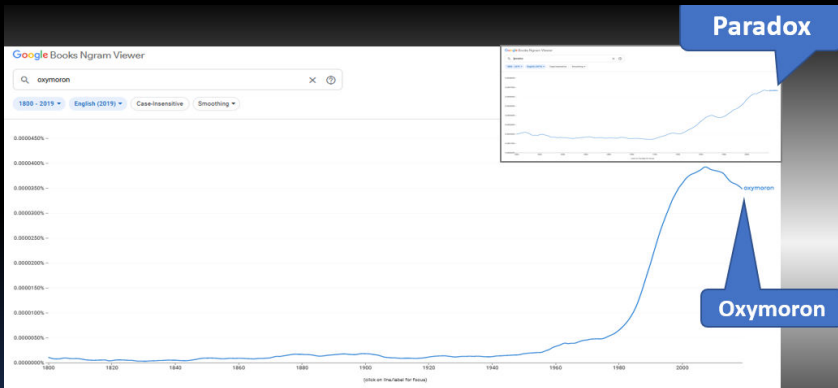


## The AGE OF PARADOXES/OXYMORA

"To anticipate the prospects for global governance in the decades ahead is to discern *powerful tensions, profound contradictions, and perplexing paradoxes.*"

Rosenau, James N. (1995). "Governance in the 21st Century", *Global Governance* 1(1): 1-13 at 1.





ally concretized as the result  
ained over the past two dec-  
every new research question  
clusion that a strongly dual-  
inary logic and in language  
isms or dualistic pairs – poses

a serious obstacle to successfully tackling the problems caused by the increasingly complex and rapidly changing world in which we live. In this world, the complexity and the accelerated pace of change equally threaten – like a new pandemic global disease – to undermine law, especially the rule of law as an instrument providing legal certainty and predictability. These factors seem to contribute to the failure of law to meet expectations and to solve the great problems faced by the global governance debate today.

## Law in the Time of Oxymora

A Synaesthesia of Language,  
Logic and Law

Rostam J. Neuwirth



Law in the Time of Oxymora concludes that 'essentially oxymoronic concepts may inaugurate *a new era of cognition, involving the ways the senses interact and how we reason, think and make decisions in law and in life*.

# AI is an Oxymoron

AI & SOCIETY (2023) 38:363–372

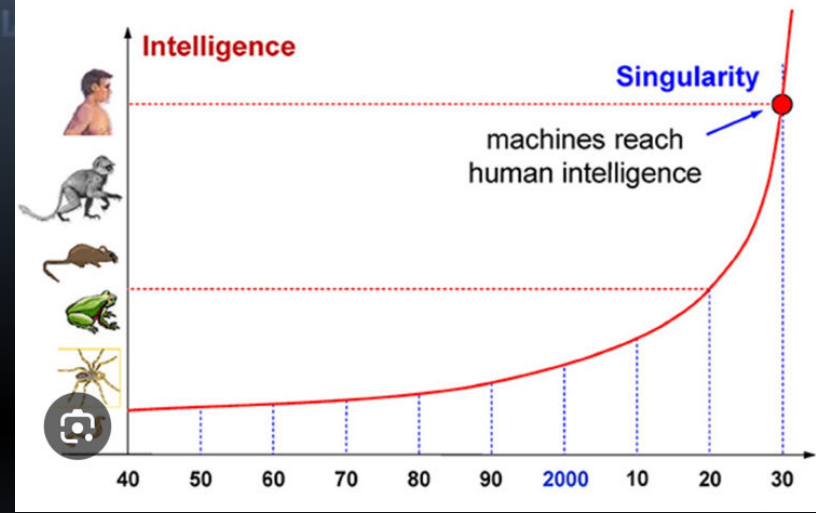
<https://doi.org/10.1007/s00146-021-01311-z>

OPEN FORUM

## Artificial intelligence is an oxymoron

The importance of an organic body when facing unknown situations as they unfold in the present moment

Jakob Svensson<sup>1</sup> 



“The question then becomes whether AI is an oxymoron. Will computers ever learn to handle the messiness of the present? Will inorganic machines be able to conquer intellectus, and if so, can this be done through data? I am skeptical. Intelligence is a complicated matter, has no single dimension, and seems to include a time-bound organic body acting in a present moment and in a changing environment.”



# 'Brussel's or 'Silicon Valley' Effect

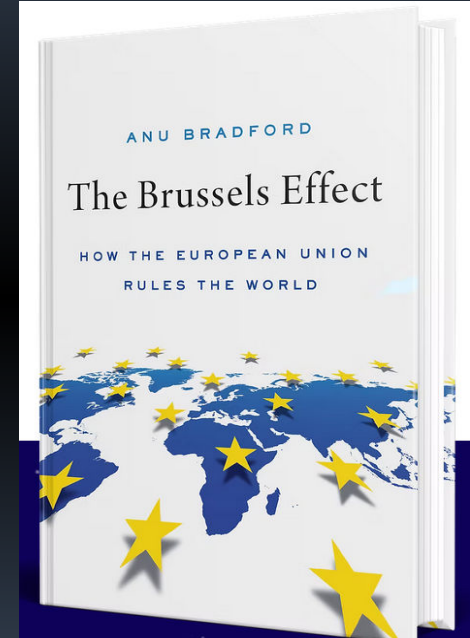
'Brussel's or 'Silicon Valley' Effect

## THE SILICON VALLEY EFFECT

*Forthcoming in the Stanford Journal of International Law (2025)*

*Chinmayi Arun\**

The most influential Artificial Intelligence (“AI”) companies are shaping AI’s legal order and regulatory discourse to protect their business interests and shift focus away from how their practices harm human beings. I call Big Tech’s influence on AI’s legal order the Silicon Valley Effect and argue that it is understudied and underestimated.





# The Narrative of Global AI Regulation



# The dominant Narrative: From a Race of the Development to the Regulation of AI

## AI arms race: This global index ranks which nations dominate AI development

In the wake of last year's generative AI surge, China still trails the US, while Singapore is coming up fast.

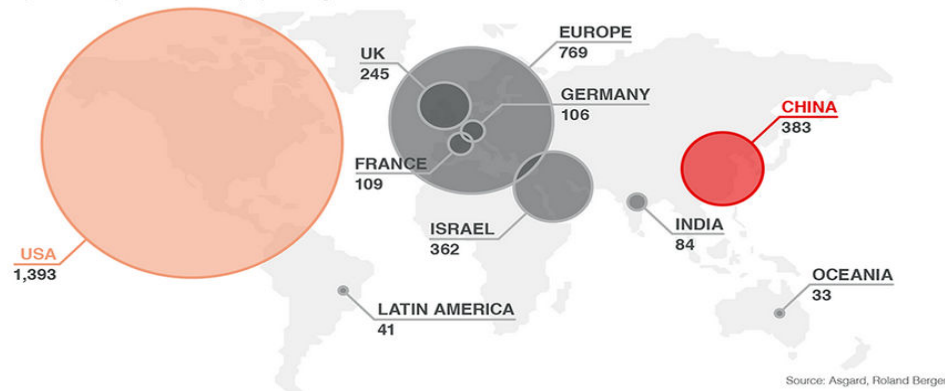


Written by **Sabrina Ortiz**, Editor

June 28, 2023 at 9:44 a.m. PT

### Global distribution of AI startups

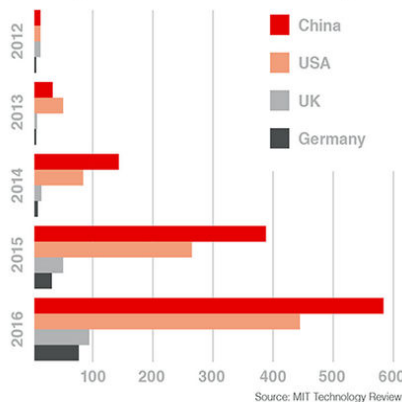
Top countries by number of startups producing AI solutions



@rethink/ Vodafone Institute

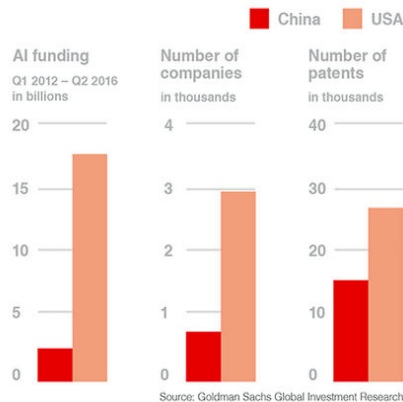
### Research Papers on AI & Deep Learning

Since 2014, China has taken over the US and is leading efforts



### AI Ecosystems: China vs USA

The US are still leading, but China is catching up fast



# The dominant Narrative: From a Race of the Development to the Regulation of AI

	Overall	Talent Infrastructure Operating Environment			Research Development		Government Strategy Commercial		Scale	Intensi...
<b>United States</b>	1	1	1	28	1	1	8	1	1	5
<b>China</b>	2	20	2	3	2	2	3	2	2	21
<b>Singapore</b>	3	4	3	22	3	5	16	4	10	1
<b>United Kingd...</b>	4	5	24	40	5	8	10	5	4	10
<b>Canada</b>	5	6	23	8	7	11	5	7	7	7
<b>South Korea</b>	6	12	7	11	12	3	6	18	8	6
<b>Israel</b>	7	7	28	23	11	7	47	3	17	2
<b>Germany</b>	8	3	12	13	8	9	2	11	3	15
<b>Switzerland</b>	9	9	13	30	4	4	56	9	16	3
<b>Finland</b>	10	13	8	4	9	14	15	12	13	4

## AI Governance Laws and Frameworks

### Laws & Regulations



### Frameworks & Principles



### Technical Standards



Created by **Oliver Patel**



## The dominant Narrative: From a Race of the Development to the Regulation of AI

# From a 'race to AI' to a 'race to AI regulation': regulatory competition for artificial intelligence

Nathalie A. Smuha 

Pages 57-84 | Received 03 Dec 2019, Accepted 09 Feb 2020, Published online: 23 Mar 2021

 Cite this article  <https://doi.org/10.1080/17579961.2021.1898300>



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## THE NATIONAL CIO REVIEW®

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### The Global Race for AI Regulation

Winners, Losers, and Consequences



Cambron Kelly  
Contributing writer



Save



The New York Times

## How Nations Are Losing a Global Race to Tackle A.I.'s Harms

Alarmed by the power of artificial intelligence, Europe, the United States and others are trying to respond — but the technology is evolving more rapidly than their policies.

## DIGITAL EMPIRES



THE GLOBAL BATTLE  
TO REGULATE TECHNOLOGY

ANU  
BRADFORD

## Digital Empires

### The Global Battle to Regulate Technology

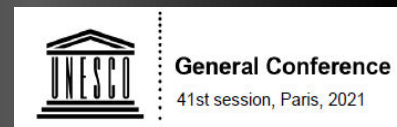
Anu Bradford

- Offers a comprehensive overview of the competing digital governance models in the US, China, and the EU
- Discusses central issues facing regulators, including antitrust, data privacy, content moderation, digital tax, and artificial intelligence
- Analyzes regulatory conflicts, tech wars, and other key battles that will define the future of the digital economy



# The Race of the Global Regulation of Artificial Intelligence (AI): TIMELINE

- 2021-04-21 [01/08/2024 in force] EU Commission publishes “Proposal for a Regulation Laying Down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act)”.
- 2021-09-25 CHINA “Ethical Norms for the New Generation Artificial Intelligence”
- 2023-01-23 China Provisions on the Administration of Deep Synthesis Internet-based Information Service
- 2023-08-15 China Interim Measures for the Administration of Generative Artificial Intelligence Services
- 2021-11-22 UNESCO adopts Recommendation on the Ethics of Artificial Intelligence.
- 2021-12-02 Council of Europe’s (Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law – 05-09-2024)”.
- 2023-09-30 ~~POTUS – Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence~~
- 2024-03-11 UN GA Resolution safe, secure and trustworthy artificial intelligence systems for sustainable development





*'Global Race'* towards the Regulation of AI

VS

Race towards the *'Global Regulation of AI'*

## Racing to the precipice: a model of artificial intelligence development

Stuart Armstrong<sup>1</sup> · Nick Bostrom<sup>1</sup> · Carl Shulman<sup>1</sup>

AI & Soc (2016) 31:201–206  
DOI 10.1007/s00146-015-0590-y

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Having extra development teams and **extra enmity** between teams can **increase the danger of an AI disaster**, especially if risk-taking is more important than skill in developing the AI.

## Against the new space race: global AI competition and cooperation for people

Inga Ulricane<sup>1</sup> 

AI & SOCIETY (2023) 38:681–683  
<https://doi.org/10.1007/s00146-022-01423-0>

OPEN FORUM

This Open Forum contribution critically interrogates the use of **space race rhetoric** in current discussions about artificial intelligence (AI). According to this rhetoric, similar to the space race of the twentieth century, AI development is portrayed **as a rivalry** among superpowers where one country will win and reap major benefits, while others will be left behind. **Using this rhetoric to frame AI development tends to prioritize narrow and short-term economic interests over broader and longer-term societal needs.**





OECD/LEGAL/0449

Adopted on:  
22/05/2019

### Recommendation of the Council on Artificial Intelligence

In force Recommendation Science and Technology

HAVING REGARD to the **Sustainable Development Goals** set out in the 2030 Agenda for Sustainable Development adopted by the United Nations General Assembly (A/RES/70/1) as well as the 1948 Universal Declaration of Human Rights;

HAVING REGARD to the important work being carried out on artificial intelligence (hereafter, "AI") in other international governmental and non-governmental fora;

RECOGNISING that **AI has pervasive, far-reaching and global implications** that are **transforming societies, economic sectors and the world of work, and are likely to increasingly do so in the future;**



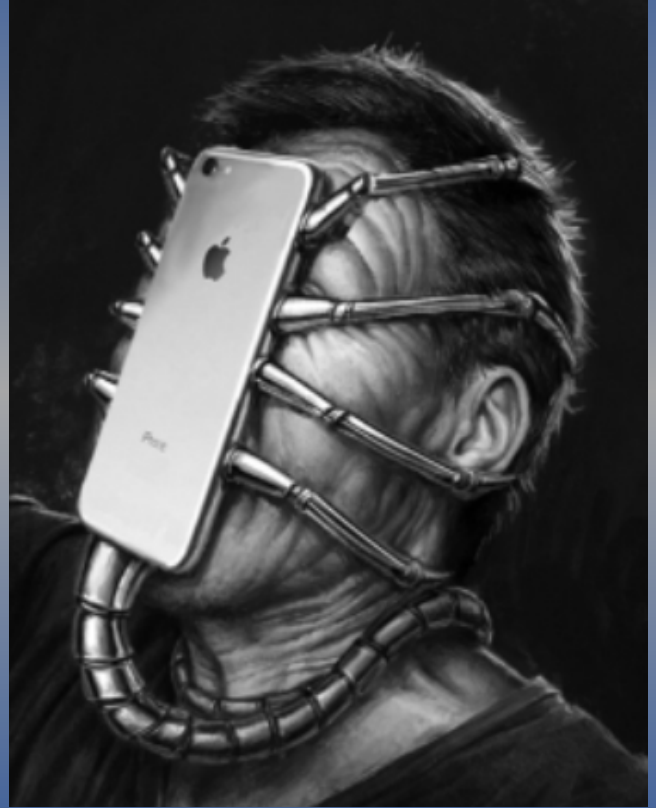
### Recommendation on **the Ethics of Artificial Intelligence**

Adopted on 23 November 2021

Adopted on **23 November 2021** by UNESCO at meeting in Paris from 9 to 24 November 2021, at its 41st session.

# AI REGULATION

## Lessons to be Learned?

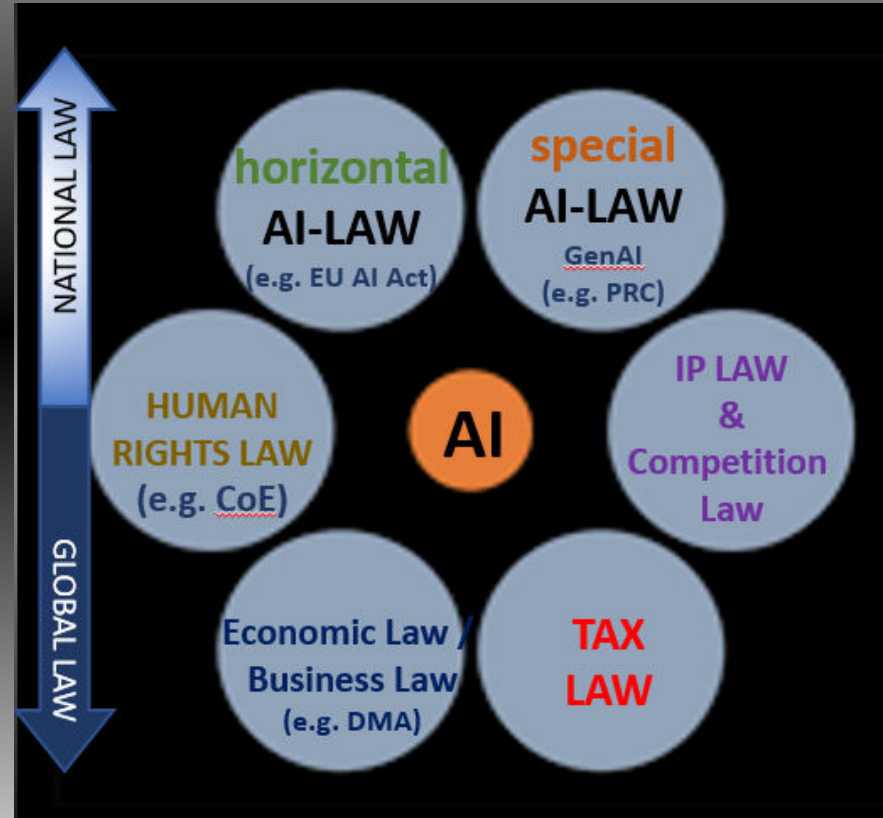


# WHAT REGULATORY APPROACH?

**US:** "market-driven" regulatory model;

**PRC:** "state-driven" regulatory model;

**EU** "a rights-driven" regulatory model.





**Council of Europe**  
**Framework Convention on Artificial Intelligence**  
**and**  
**human rights, democracy and the rule of law**

**ZERO DRAFT [FRAMEWORK] CONVENTION  
ON ARTIFICIAL INTELLIGENCE, HUMAN RIGHTS,  
DEMOCRACY AND THE RULE OF LAW**

COMMITTEE ON ARTIFICIAL INTELLIGENCE  
(CAI)

Strasbourg, 30 June 2022

COUNCIL OF EUROPE



CONSEIL DE L'EUROPE

CAI(2022)07

RESTRICTED

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# **Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law**

Vilnius, 5.IX.2024



## **Chapter I – General provisions**

Article 1 – Object and purpose

Article 2 – Definition of artificial intelligence system

Article 3 – Scope

## **Chapter II – General obligations**

Article 4 – Protection of human rights

Article 5 – Integrity of democratic processes and respect for the rule of law

## **Chapter III – Principles related to activities within the lifecycle of artificial intelligence systems**

Article 6 – General approach

Article 7 – Human dignity and individual autonomy

Article 8 – Transparency and oversight

Article 9 – Accountability and responsibility

Article 10 – Equality and non-discrimination

Article 10 – Equality and non-discrimination

Article 11 – Privacy and personal data protection

Article 12 – Reliability

Article 13 – Safe innovation

## **Chapter IV – Remedies**

Article 14 – Remedies

Article 15 – Procedural safeguards

## **Chapter V – Assessment and mitigation of risks and adverse impacts**

Article 14 – Remedies

Article 15 – Procedural safeguards

**Article 16 – Risk and impact management framework**





# THE EUROPEAN UNION

REGULATION (EU) 2024/1689 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL  
of 13 June 2024

laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 **(Artificial Intelligence Act)**



Official Journal  
of the European Union

EN  
L series

2024/1689

12.7.2024



# Draft AI ACT

## TITLE II - PROHIBITED ARTIFICIAL INTELLIGENCE PRACTICES

### Article 5 AIA

#### 1. The following artificial intelligence practices shall be prohibited:

(a) the placing on the market, putting into service or use of an AI system that deploys subliminal techniques beyond a person's consciousness in order to materially distort a person's behaviour in a manner that causes or is likely to cause that person or another person physical or psychological harm;

(b) the placing on the market, putting into service or use of an AI system that exploits any of the vulnerabilities of a specific group of persons due to their age, physical or mental disability, in order to materially distort the behaviour of a person pertaining to that group in a manner that causes or is likely to cause that person or another person physical or psychological harm;

(c) the placing on the market, putting into service or use of AI systems by public authorities or on their behalf for the evaluation or classification of the trustworthiness of natural persons over a certain period of time based on their social behaviour or known or predicted personal or personality characteristics, with the social score leading to either or both of the following:

- (i) detrimental or unfavourable treatment of certain natural persons or whole groups thereof in social contexts which are unrelated to the contexts in which the data was originally generated or collected;
- (ii) detrimental or unfavourable treatment of certain natural persons or whole groups thereof that is unjustified or disproportionate to their social behaviour or its gravity;

(d) the use of 'real-time' remote biometric identification systems in publicly accessible spaces for the purpose of law enforcement, unless and in as far as such use is strictly necessary for one of the following objectives:

# REGULATORY CHALLENGES

## Legal

- ☐ Definition of AI
- ☐ Relation to other Acts/Regulations/Norms
- ☐ Causality (Cumulative)
- ☐ Harm
- ☐ Fundamental Rights
- ☐ Enforcement (detection)

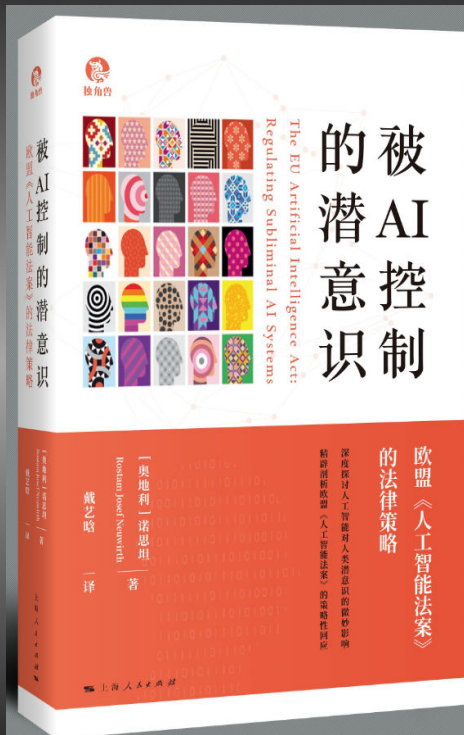
## Psychological

- ☐ What is Subliminal Perception?
- ☐ Which Senses are Implicated?
- ☐ Single Sensory or Multisensory Approach?
- ☐ What is the 'Threshold of awareness'?

## Technical

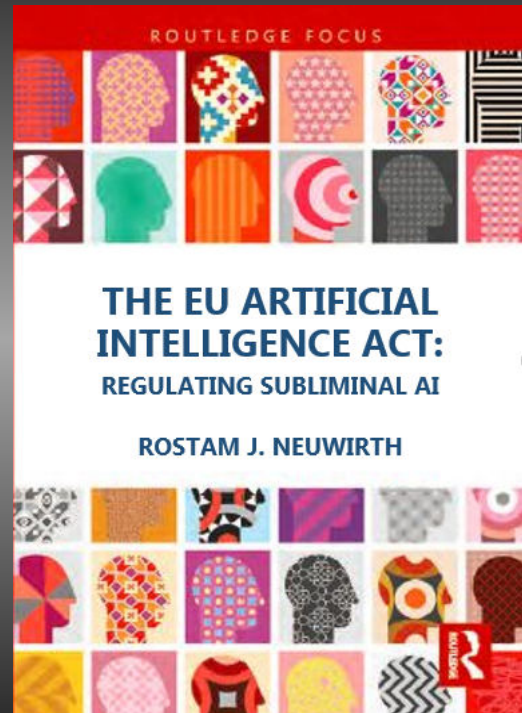
- ☐ Definition of AI
- ☐ Which technology deploys subliminal techniques?
- ☐ Combination of Technologies
- ☐ Liability?
- ☐ Existing or Future Techs?

# SUBLIMINAL AI SYSTEMS



## Introduction

'A popular saying goes that "*if you don't control your mind, the mind will control you!*" Additionally, it could be added that if we do not control our mind, it is likely that *someone else will control your mind for you.*'



# A.I. Is Getting Better at Mind-Reading

In a recent experiment, researchers used large language models to translate brain activity into words.



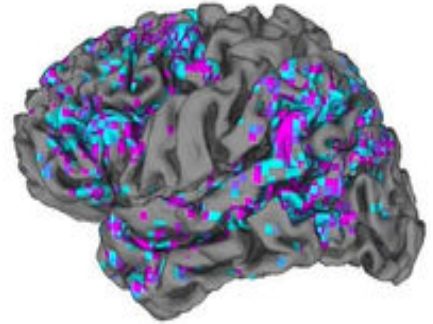
By Oliver Whang

May 1, 2023

The New York Times



<https://www.nytimes.com/2023/05/01/science/ai-speech-language.html>



UNESCO

## Recommendation on the Ethics of Artificial Intelligence

Recognizing the profound and dynamic **positive and negative impacts** of artificial intelligence (AI) on societies, environment, ecosystems and human lives, including the human mind, in part because of the new ways in which its use influences human thinking, interaction and decision-making and affects education, human, social and natural sciences, culture, and communication and information.



General Conference  
41st session, Paris, 2021

Article 5				<p>Article 5</p> <p><u>Prohibited Artificial Intelligence Practices</u></p> <p>Text Origin: Commission Proposal</p>
Article 5(1)				
179	Article 5	Article 5	Article 5	Article 5
180	<p>1. The following artificial intelligence practices shall be prohibited:</p>	<p>1. The following artificial intelligence practices shall be prohibited:</p>	<p>1. The following artificial intelligence practices shall be prohibited:</p>	<p>1. The following artificial intelligence practices shall be prohibited:</p> <p>Text Origin: Commission Proposal</p>
Article 5(1), point (-a)(a)				
181	<p>(a) the placing on the market, putting into service or use of an AI system that deploys <u>subliminal</u> techniques beyond a person's consciousness in order to materially distort a person's behaviour in a manner that causes or is likely to cause that person or another person physical or psychological harm;</p>	<p>(a) the placing on the market, putting into service or use of an AI system that deploys <u>subliminal</u> techniques beyond a person's consciousness <u>in-order-to-or purposefully manipulative or deceptive techniques, with the objective to or the effect of</u> materially <del>distort</del>distorting a person's <u>or a group of persons'</u> behaviour <u>by appreciably impairing the person's ability to make an informed decision, thereby causing</u></p>	<p>(a) the placing on the market, putting into service or use of an AI system that deploys <u>subliminal</u> techniques beyond a person's consciousness <u>in-order-to-with the objective to or the effect of</u> materially <del>distort</del>distorting a person's behaviour in a manner that causes or is <u>reasonably</u> likely to cause that person or another person physical or psychological harm;</p>	<p>(a) the placing on the market, putting into service or use of an AI system that deploys <u>subliminal</u> techniques beyond a person's consciousness <u>in-order-to-or purposefully manipulative or deceptive techniques, with the objective to or the effect of</u> materially <del>distort</del>distorting a person's <u>or a group of persons'</u> behaviour <u>by appreciably impairing the person's ability to make an informed decision, thereby causing</u></p>



## Article 5 Prohibited AI practices

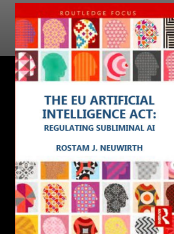
1. The following AI practices shall be prohibited:

- (a) the placing on the market, the putting into service or the use of an AI system that deploys subliminal techniques beyond a person's consciousness or purposefully manipulative or deceptive techniques, with the objective, or the effect of materially distorting the behaviour of a person or a group of persons by appreciably impairing their ability to make an informed decision, thereby causing them to take a decision that they would not have otherwise taken in a manner that causes or is reasonably likely to cause that person, another person or group of persons significant harm;

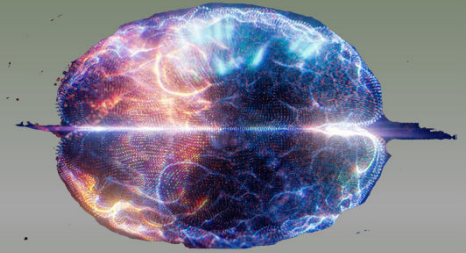
### a) *Subliminal techniques*

- (64) While the AI Act does not define 'subliminal techniques', Article 5(1)(a) AI Act specifies that subliminal techniques operate beyond (below or above) the threshold of conscious awareness. Because subliminal techniques and the way they operate are inherently covert, such techniques bypass a person's rational defences against manipulation and are capable of influencing decisions without the conscious awareness of the person, raising significant ethical concerns and impairing individual autonomy, agency and free choice<sup>53</sup>.

Another more suitable term could be "transliminal perception", which is used to refer to stimuli crossing (*trans*) thresholds (*limines*) "into or out of consciousness", both below and above our ordinary level of consciousness.<sup>75</sup> This would also reflect the reality that both subliminal and supraliminal cognition influences our behaviour, including ethical decision-making.<sup>76</sup> An approach using transliminal in its terminology



# Subliminal Perception



Overall, the trend in nudging and artificial intelligence has been said to show a move from "*programming computers to programming people*".

Dirk Helbing et al., "Will Democracy Survive Big Data and Artificial Intelligence?" in Dirk Helbing (ed.), Towards Digital Enlightenment: Essays on the Dark and Light Sides of the Digital Revolution (Cham: Springer, 2019)





Fig. 7a

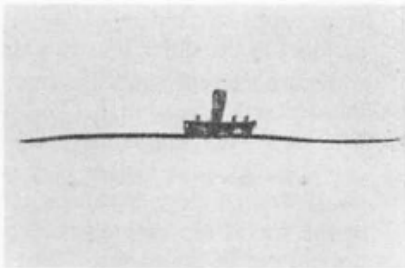


Fig. 7b

# 5 %

latest scientific findings and a new understanding of the unconscious, only 5% of our entire cognitive functions are conscious, while the remaining 95% are beyond our awareness but still exert an important influence on our lives.

Leonard Mlodinov, *Subliminal: How Your Unconscious Mind Rules Your Behaviour* (New York: Vintage Books, 2012) 34.

Consumer psychologists no longer simply demonstrate, for example, that priming a consumer can change their behavior. Instead, we seek to understand how that prime operates, or use the basic notion of nonconscious exposure to better understand substantive phenomenon in the lives of consumers.

Tanya L. Chartrand and Gavan J. Fitzsimons, "Nonconscious Consumer Psychology" (2011) 21 *Journal of Consumer Psychology* 1-3, 3.

In particular, the combination of the collection of big data, profiling, targeted advertisements and other "immersive" and neuromarketing-based applications can be expected to enhance the overall efficiency of subliminal stimuli.

Wolfgang Reitberger et al., "Ambient Persuasion in the Shopping Context" in Jörg Müller, Florian Alt and Daniel Michelis (eds.), *Pervasive Advertising* (London: Springer 2011) 309-323, 310 and 322

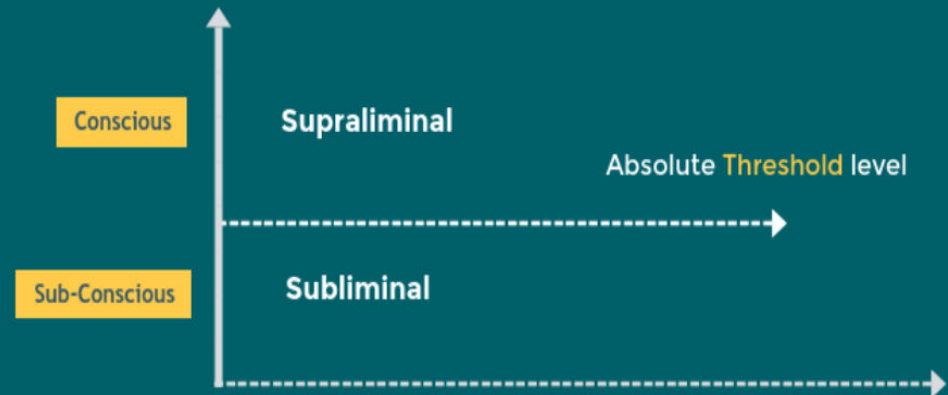
## Psychophysics -- Threshold of Subliminal Perception?

Unfortunately, even after stimulus characteristics are taken into account, there is no absolute threshold that can be universally recommended: thresholds for a given stimulus vary both intra- and interpersonally. One method of handling such variability is to set thresholds *uniquely for each individual*.

Pamela K. Smith, and Kathleen McCulloch, "Subliminal Perception" in V.S. Ramachandran (ed.), Encyclopedia of Human Behavior, Vol 1, 2nd ed. (London: Academic Press, 2012) 551-557.

### SUPRALIMINAL vs. SUBLIMINAL

Subliminal stimuli cannot be perceived with us being aware, even if we look for them. In contrast, supraliminal stimuli can be perceived by the conscious mind, although we often fail to notice them.



Graph Made With Visme

# Institutional Aspects of AI Governance: Creative Destruction?

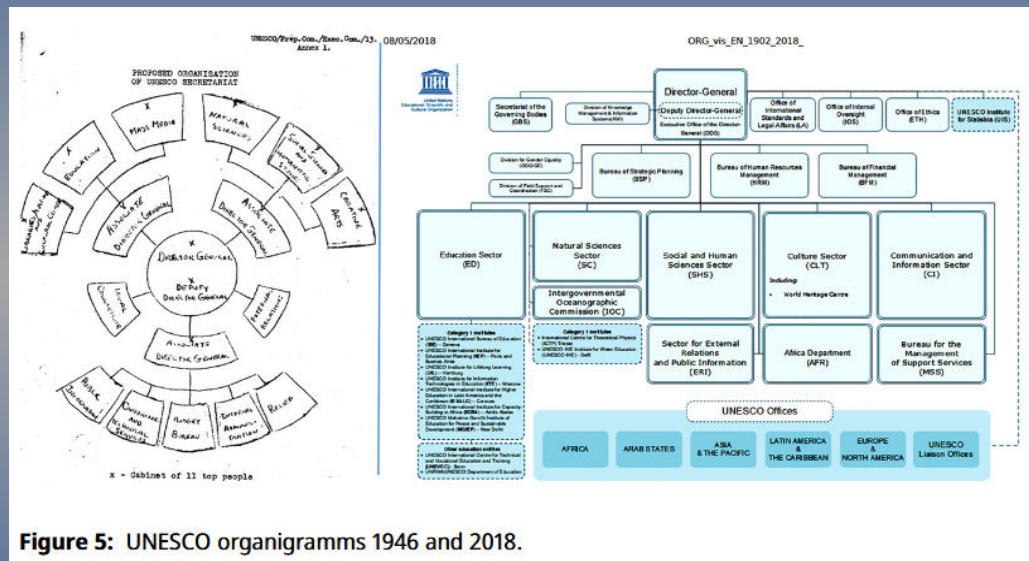


Figure 5: UNESCO organigramms 1946 and 2018.

“Conventional wisdom has it that only a World War III might provide enough shock, awe, and vision to equip the UN for the future.”

Antonio Donini, “Crashing Waves and Rising Tides: The Case for UN 2.0” (2020) 62 Global Governance 262–275 at 267.



Open Access Published by De Gruyter March 8, 2024

### The Global Institutional Governance of AI: A Four-Dimensional Perspective

Rostam J. Neuwirth  

From the journal *International Journal of Digital Law and Governance*

<https://doi.org/10.1515/ijdlg-2024-0004>

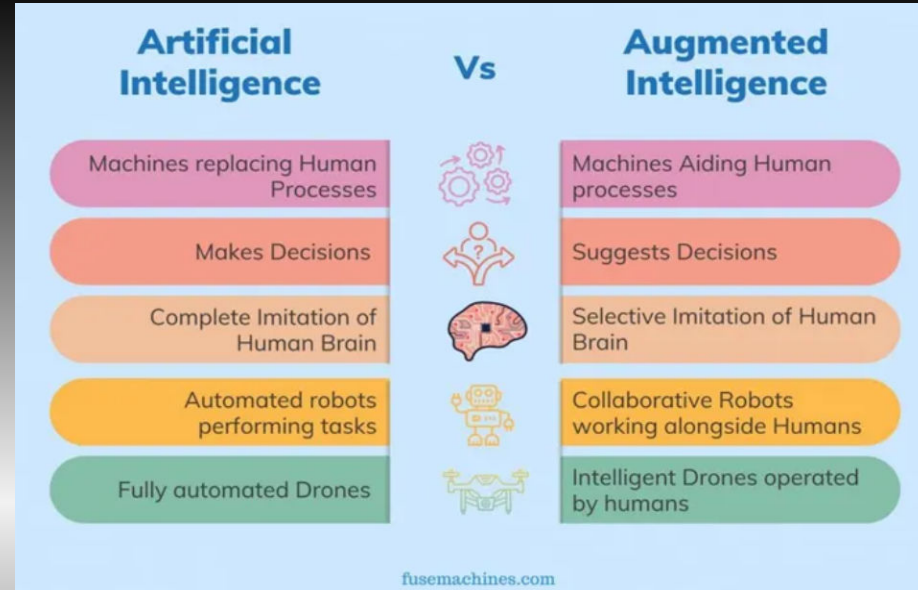
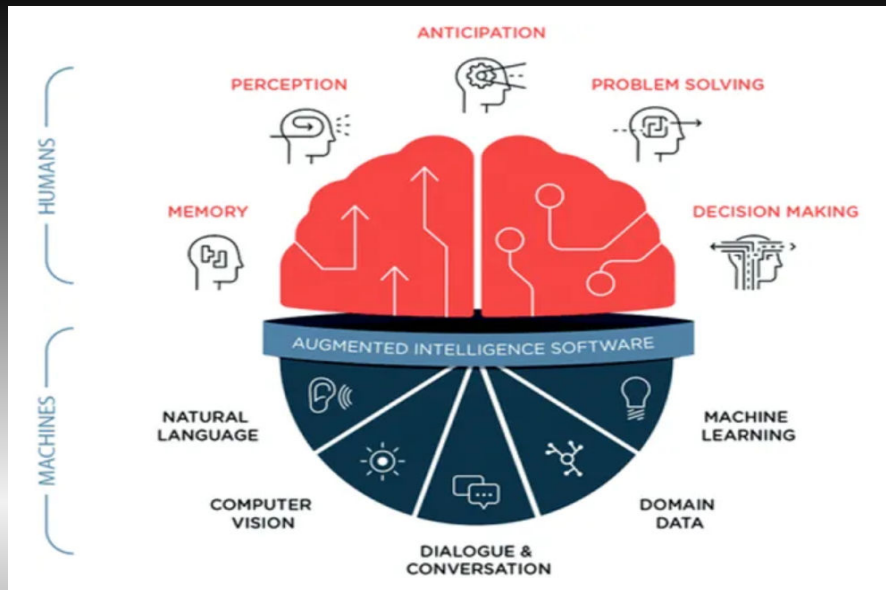


“Transformational change in the institutions and politics of international trade, it seems, goes hand in hand with *cognitive* change.”

Andrew T.F. Lang, “Reflecting on ‘Linkage’: Cognitive and Institutional Change in the International Trading System” (2007) 70(4) Modern Law Review 529–549 at 529.

# Conclusions

conclusions



However, another school of thought suggests that **instead of being a replacement for the human mind**, AI can be used for **intelligence augmentation (IA)**. Accordingly, our research seeks to address these different views, their implications, and potential risks in an age of increased artificial awareness. We show **that the ultimate goal of humankind is to achieve IA through the exploitation of AI**.

Hossein Hassani et al., 'Artificial Intelligence (AI) or Intelligence Augmentation (IA): What Is the Future?' (2022) 1(2) AI 143–155,  
<https://doi.org/10.3390/ai1020008>.

# Many Thanks!



## The End

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## Background Reading Materials

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