



EJTN AD/2020/10 On-line Classroom

10th December 2020

The use of IT and Artificial Intelligence in the decision-making process of the Public administration: Fostering technological developments vs protecting fundamental rights.

Epameinondas Troulinos, Presiding judge at the
Administrative Court of First Instance at Veria, Greece

Outline

- The digitization of society.
- A brief introduction on AI.
- AI in the Public Sector.
- Related AI case law (France, Italy, The Netherlands).
- Concluding remarks.

What is happening to the world?

(from a technological perspective)

- People are connected (networks)
- A lot of data are available (big data)
- New AI techniques (Machine Learning)
- After Covid-19, the 'great reset'

Digital Transformation of Government

Source: moodle.gov30.eu (The Gov3.0 Project)

Changes in the way digital public services are provided:

- ❖ E-Government 1.0 (connected government)
- ❖ E-Government 2.0 (collaborative government)
- ❖ E-Government 3.0 (smart government)

Tallin Declaration of 6th October 2017 (Ministerial Declaration on eGovernment) (<https://ec.europa.eu/digital-single-market/en/news/ministerial-declaration-egovernment-tallinn-declaration>)



Most
People's
View on
AI

‘Cool things
that my
smartphone
cannot do’.
Anonymous

WHEN COMPUTERS WERE HUMAN

In the
beginning
there
were...



David Alan Grier

The Church – Turing Hypothesis (1936)

“A function on the natural numbers can be calculated by an effective method if and only if it is computable by a Turing machine”.



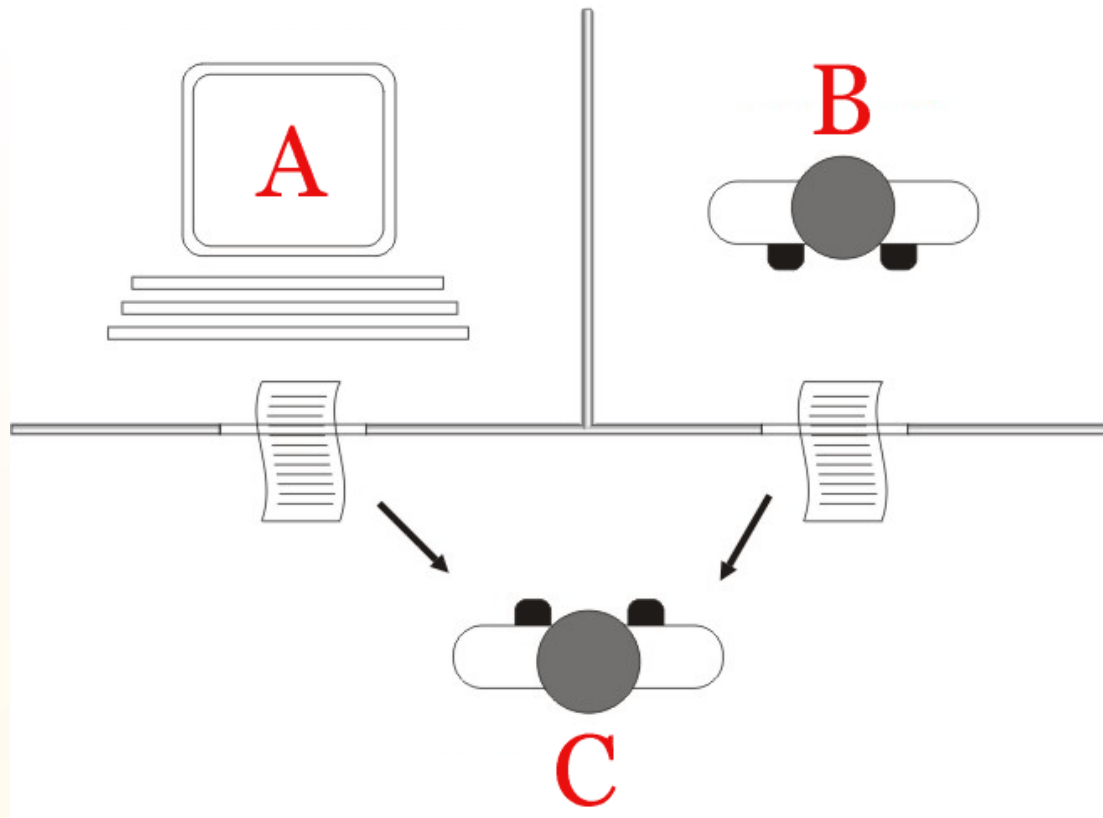
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If you'd like to know more, you can search online later for this error:

Imitation Game (Turing Test)

Alan Turing, Computer Machinery and Intelligence, 1950

Source of Image: https://en.wikipedia.org/w/index.php?title=Turing_test&oldid=986039138



Imitation Game (Turing Test)

If a computer can trick a human and pass the Turing Test, can it think like a human?

- A: Yes
- B: No
- C: Maybe

Searle's Chinese Room Argument

John Searle "Minds, Brains, and Programs", in Behavioral and Brain Sciences, 1980

A human can follow instructions that tell him how to respond to a given input without ever understanding the nature of the inputs or outputs. That is what computers do!

Dartmouth College Project (1956)

“The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so **precisely described** that a machine can be made to **simulate** it. An attempt will be made to find how to make machines use language, form abstractions and concepts, solve kinds of problems now reserved for humans, and improve themselves.”

Phases of AI Development

Before the Internet:

- Integrate in algorithms our knowledge about the world (experience + science)

→ rule based expert systems (deterministic AI)

After the Internet:

- Create an algorithm with the aim that it will design an 'intelligent' system and train it with data that are available through the internet.

→ Data Driven AI (probabilistic AI)

Today's most common data driven AI techniques

- Machine Learning

The system receives input (data) + the answers expected so as to produce the rules. These rules can then be applied to new data to produce original answers.

- Deep Learning

Subset of ML: Using artificial neural networks to learn from vast amount of data.

(based on the way human brain works)

How to train your algorithm

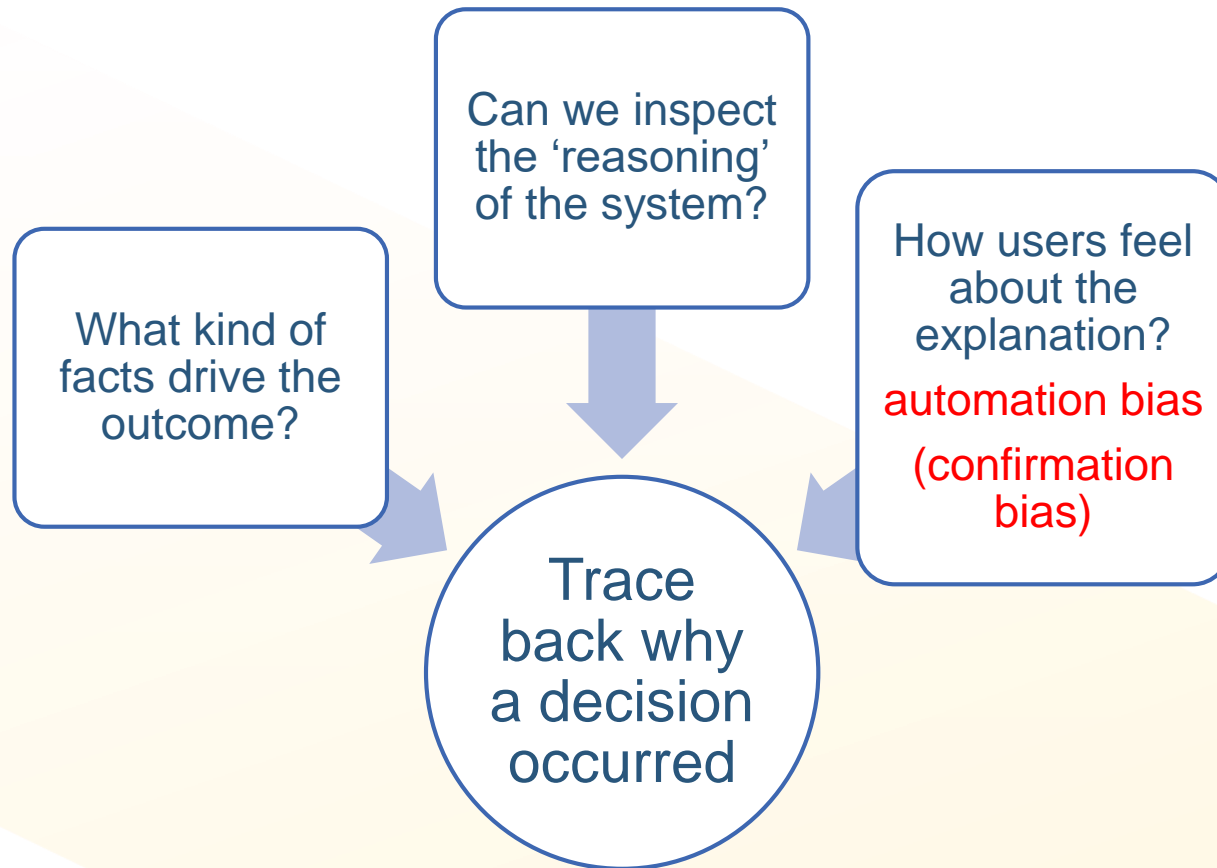
AI needs a lot of training data but:

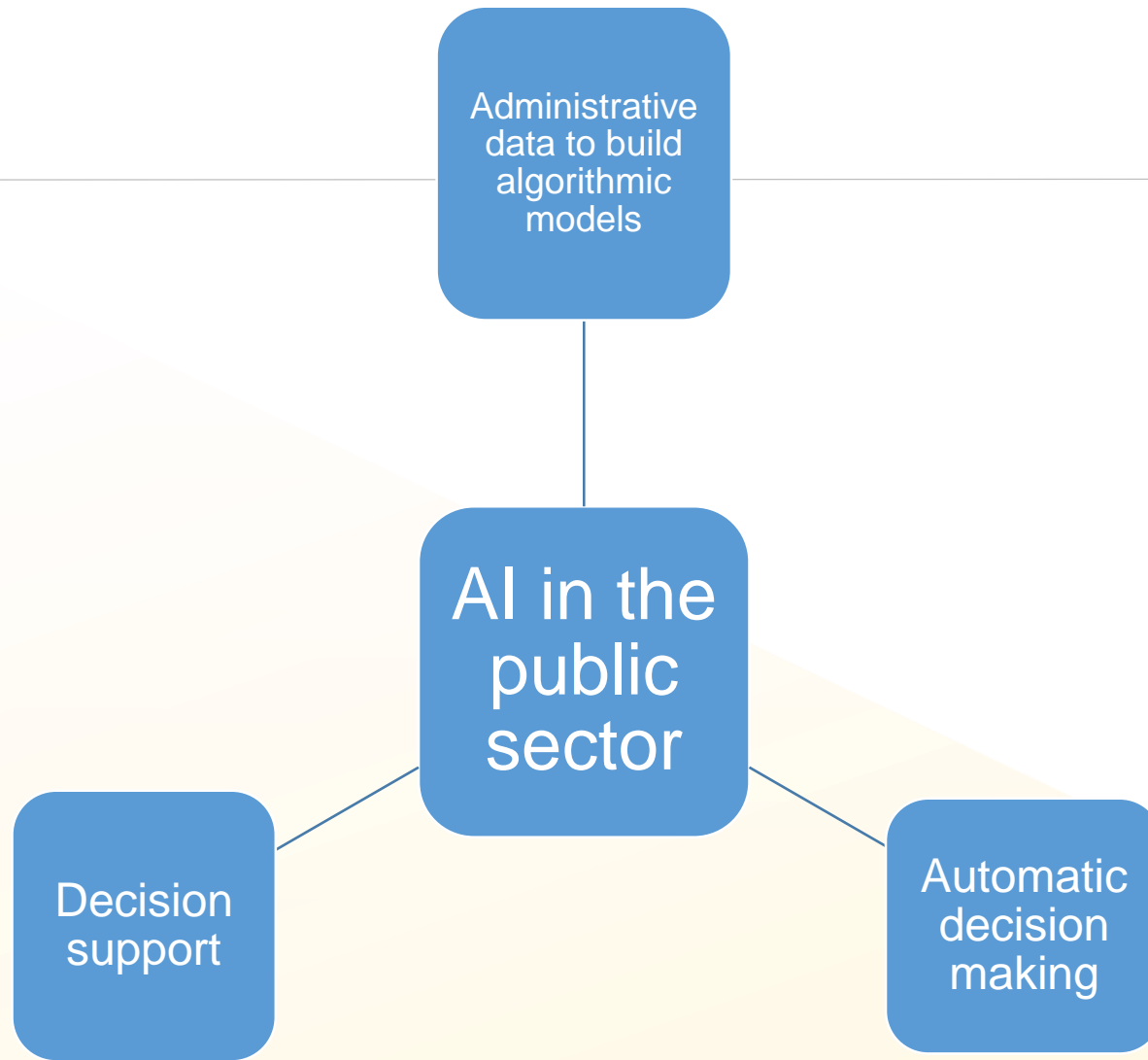
- Data Shift
- Underspecification
(<https://arxiv.org/pdf/2011.03395.pdf>)

Black Box Problem of ML

- How did AI find applicable rule?
- Can we ask AI?
- Explanation – Argumentation
 - Trustworthy AI

Interpretable or Explainable AI (algorithmic transparency)





Are the decisions made using AI in the Public Sector fair?

The use of AI **should not** provide an excuse for lesser standards.

- ❖ Delegation of administrative power.
- ❖ Procedural fairness.
- ❖ A duty to give adequate reasoning.
- ❖ Right to be heard.

AI in the Public Sector (**Beware!**)

- Training data are from the past + probabilistic nature of data driven AI.
- Human decision-maker (or individual) should be able to include factors that are not represented by data in AI system (lost elements).
- Framing of AI decision (human – algorithmic interface) to avoid automation bias.

GDPR is coming...

- Right to be forgotten (article 17, right to erasure – Is it feasible?).
- A right to an explanation (recital 71 – Is it binding?).
- A human in the loop (article 22, Automated individual decision-making, including profiling – Most promising).
- Free, prior and informed consent (article 7, conditions of consent – an illusory right).

EU approach to Data and AI



Brussels, 19.2.2020
COM(2020) 65 final

WHITE PAPER

On Artificial Intelligence - A European approach to excellence and trust

EU Justice @EU_Justice · 19 Φεβ

European Data Strategy aims to create a single market for data, where:

- ✓ personal & non-personal data are secure
- ✓ businesses & public sector have easy access to high quality data to create & innovate
- ✓ data-driven products fully respect EU rules & values

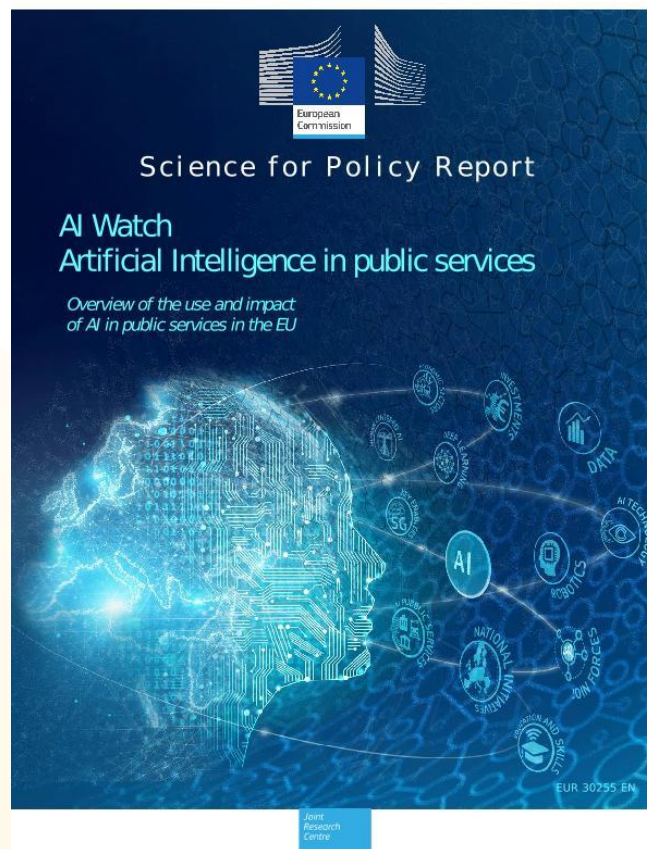
#DigitalEU 1/2

3 26 33

AI in Public Services in EU

Source: https://ec.europa.eu/knowledge4policy/ai-watch/artificial-intelligence-public-services_en

- The report presents the results of the first exploratory mapping of the use of AI in public services in the EU.
- A growing interest in the use of AI to support the re-design of internal processes of public administrations and policy-making mechanisms, to improve the quality of public services and engagement with citizens.
- The report outlines a proposal for developing a methodological framework for an impact assessment.



AI in Public Services in the EU

Source (Table 3, p. 23): https://ec.europa.eu/knowledge4policy/ai-watch/artificial-intelligence-public-services_en

Country	General Public Services	Social Protection	Defence	Public Order & Safety	Economic Affairs	Environment Protection	Housing & Community...	Health	Recreation	Education	Total
Austria	2	1									3
Belgium	5		1		2	2		2			12
Bulgaria	1								2		3
Croatia								1			1
Cyprus							1				1
Czechia	1	1					1				3
Denmark	4	1			2		4	5			16
Estonia	6	1		2	3			2			14
Finland	3				1			3			7
France	3	1		3	3		1			1	12
Germany	2			2	1						5
Greece					1						1
Hungary	1										1
Ireland	2							1			3
Italy	3	1			1			2	1	1	9
Latvia	3		1	2	5			1			12
Lithuania	1			1	1			1			4
Luxembourg	1										1
Malta	2				2		2	1		1	8
Netherlands	3	4		8	3		1				19
Norway	5		1		3			1		1	11
Poland	2	1	1	1	2		1	1		1	10
Portugal	2	1			4	1		8		2	18
Romania	1			2							3
Slovakia	6							1			7
Slovenia	1				1						2
Spain	3			1	2		1	4	1		12
Sweden	3	2		1			2	4			12
Switzerland	9			2	1						12
UK	1			2	2			3			8
Total	76	14	4	27	40	3	14	41	4	7	230

AI in Public Services in the EU

Source (Figure 5, p. 27): https://ec.europa.eu/knowledge4policy/ai-watch/artificial-intelligence-public-services_en

AI PURPOSE IN PUBLIC SERVICES

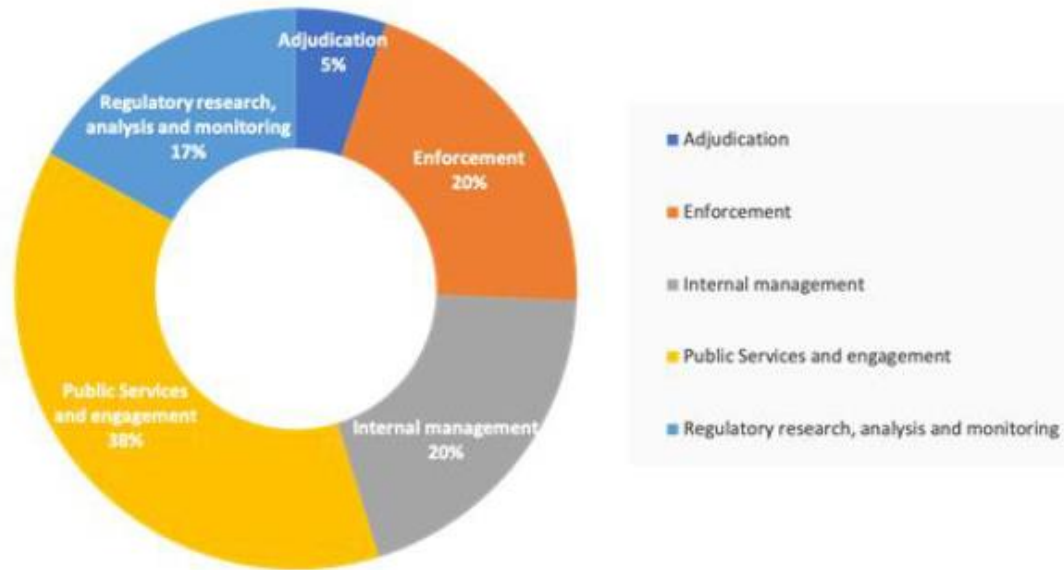


FIGURE 5 PURPOSE OF AI IN PUBLIC SERVICES

AI in Public Services in the EU

Source (Table 11, p. 42): https://ec.europa.eu/knowledge4policy/ai-watch/artificial-intelligence-public-services_en

#	Initiative	AI Typology	Country	Administrative level	Purpose(*)	Policy sector (COFOG)	Key enablers	Expected impact
1	SATIKAS	Computer Vision and Identity Recognition	Estonia	Central	Enforcement	Economic Affairs	Satellite data, resource/data sharing, funding, trust	Improved administration and resource use, improved subsidy compliance
2	Predictive system	Predictive Analytics, Simulation and Data Visualisation	Belgium	Central	Enforcement	Health	Sharing of data/resources, high data quality, convincing staff of value	Improved inspection capabilities, improved welfare of children
3	Automated public services	Cognitive Robotics, Process Automation and Connected and Automated Vehicles	Sweden	Local	Adjudication	Social Protection	Developed online services, political leadership	Reduced waiting time, increased efficiency, improved citizens' experience
4	Chatbot UNA	Chatbots, Intelligent Digital Assistants, Virtual Agents and Recommendation Systems	Latvia	Central	Public services and engagement	Economic Affairs	Data on FAQ, external consultancy providing expertise	Reduced administrative burden and workload, improved public service, improved citizens' experience
5	Tengai	Predictive Analytics, Simulation and Data Visualisation	Sweden	Local	Internal Management	General Public Services	Consultancy assistance, Existing recruitment practices, culture for innovation	Unbiased recruitment services, higher quality personnel, lower recruitment costs and length
6	SyRi (Systeem Risico Indicatie)	Predictive Analytics, Simulation and Data Visualisation	Netherlands	Central/Local	Enforcement	Social Welfare	Sharing of data/resources, high data quality, political leadership	Improved inspection capabilities, improved social welfare, reduced misuse of public funds
7	Unemployed profiling	Expert and Rule-based Systems, Algorithmic Decision Making	Poland	Central / Municipal	Adjudication	Economic Affairs	Political leadership, Available data on unemployment, drive for modernization	Personalized public services, reduced unemployment, improved efficiency
8	VeriPol	Natural Language Processing, Text Mining and Speech Analytics	Spain	Central	Enforcement	Public Order and Safety	Collaboration with university, corpus of digital reports, integration into existing information system	Higher detection of false reports, higher productivity, reduced submission of fraudulent reports

(*) See in Figure 5 § 2.2.2.

Constitutional Council (France)

Decision 2018-765 DC of 12.06.2018 [the case]

- **Law implementing GDPR:**

- Automated decision making in 3 categories
- In public administration fully or partially automated decisions permitted if no sensitive data / respects administrative procedures / explicit notification / explanation of rules / data controller commands the process
- In public administration fully automated decisions are prohibited in administrative appeal

Constitutional Council (France)

Decision 2018-765 DC of 12.06.2018 [the ruling]

Algorithmic accountability and transparency:

- ✓ Access to code
- ✓ Access to data processing
- ✓ Human control a fundamental safeguard

Council of State (Italy)

Decision no 2270 of 08.04.2019 [the case]

- Use of AI in a part of the hiring procedure of teachers in Italy.
- Management of the placement of teachers within the national territory.
- Post Assignment according to: teacher preferences / subject / school level / merit ranking.

What could go wrong?

Council of State (Italy)

Decision no 2270 of 08.04.2019 [the ruling]

Results were illogical and irrational (post assignment should respect teacher's preferences + ranking order)

- Use of algorithms should be encouraged
- Human involvement in the design not execution of system
- The system must comply with principles that regulate administrative activity:
 - ✓ Explainable decision
 - ✓ Constant checks
 - ✓ Algorithmic rule under judge's review

The Hague District Court (The Netherlands)

Decision: C/09/550982 / HA ZA 18-388 of 05.02.2020 [the case]

- Risk indication system (Systeem Risico Indicatie [SyRI]) to predict likelihood of benefit fraud.
- Gathers government data from many agencies.
- Analyses data using an algorithm to identify which individuals might be at higher risk of committing benefit fraud.
- Deployed on low-income neighborhoods.
- Broad coalition of stakeholders against it.

The Hague District Court (The Netherlands)

Decision: C/09/550982 / HA ZA 18-388 of 05.02.2020 [the ruling]

- Legitimate purpose but:
 - ❖ Inadequate safeguards for privacy protection
 - ❖ Lack of transparency about the way it works
 - ❖ Lack of fair balance between (article 8§2 of ECHR):
 - prevention and combat of fraud (interest of the community as a whole)
 - the right of the individuals affected by the legislation to respect for their private life

Concluding Remarks

- We need system verification AND check decision validity (procedural fairness – legitimacy).
- ‘under human control’ (governance model).
- BUT beware of humans behaving like machines!

Edward O. Wilson,
American sociobiologist,
Oxford essential
quotations (4th ed. 2016)
published online at
<https://www.oxfordreference.com/view/10.1093/acref/9780191826719.001.0001/q-oro-ed4-00016553>

“The real problem of
humanity is the
following: we have
paleolithic emotions,
medieval
institutions, and
god-like technology.”

debate at the Harvard Museum of
Natural History, Cambridge, Mass., 9
September 2009



Thank you for your attention!

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