LAW AND DIGITAL TECHNOLOGIES
*INTERNET PRIVACY AND EU DATA PROTECTION*

# Data Protection and Datafication, Big Data

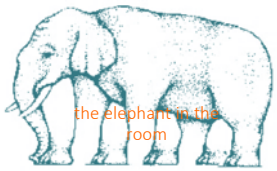
and Internet-of-Things, Artificial Intelligence, Machine Learning (etc.)

Gerrit-Jan Zwenne
Seminar VIII.
November 13th, 2019

eLAW LEIDEN

## roadmap

- Quick recap of DP-law, and something about profiling
- What is IoT, datafication & big data anyhow?
- How IoT & Datafication & Big Data (etc.) challenge DP Law



*A.* *QUICK RECAP OF DP LAW*

personal data & special data

transparancy

consent or other processing ground

dataminimalization

purpose specification and limitation

profiling

etc.

## profiling

automated processing of personal data
consisting of the use of personal data to *evaluate*
certain personal aspects relating to a natural person
in particular to *analyse* or *predict* aspects
concerning that natural person's

- performance at work
- economic situation
- health
- personal preferences
- interests
- reliability
- behaviour
- location or movements

## rules for profiling

a right

- not to be subject to a decision based solely on automated processing, including profiling,
- which produces legal effects concerning him or her
- or similarly significantly affects him or her

exceptions

(a) necessary for entering into, or performance of, a contract between the data subject and a data controller

(b) authorised by Union or Member State law to which the controller is subject and which also lays down suitable measures to safeguard the data subject's rights and freedoms and legitimate interests

(c) based on the data subject's explicit consent.

## Rasterfahndung

*Typically RAF-terrorists use cash and pay their electricity bill in person at the utility (to keep their apartments associated with a false name)*

## credit score

- *a numerical expression based on a level analysis of a person's credit files, to represent the creditworthiness of the person.*
- *primarily based on a credit report information typically sourced from credit bureaus.*
- *to evaluate the potential risk posed by lending money to consumers and to mitigate losses due to bad debt*

## ‘online profiling or behavorial advertizing’

- *advertising based on observation of behavior of individuals over time*
- *seeks to study characteristics of this behaviour through actions*
- *to develop a specific profile and provide these individuals with advertisements tailored to their interests*

## ethnic profiling

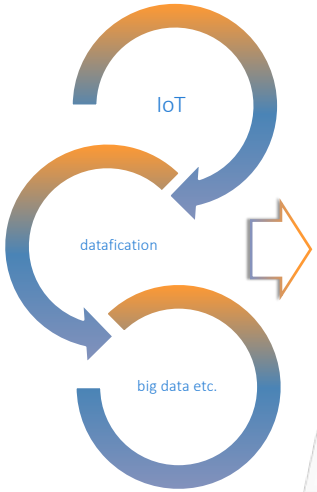
- *stopping or detaining the driver of a vehicle based on the determination that a person of that race, ethnicity, or national origin is unlikely to own or possess that specific make or model of vehicle*
- *stopping or detaining an individual based on the determination that a person of that race, ethnicity, or national origin does not belong in a specific part of town or a specific place*

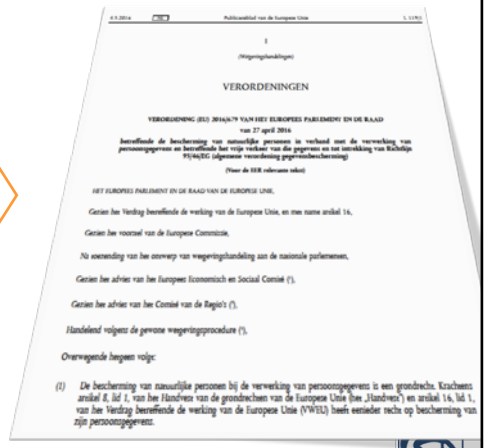
## search results

CJEU 13 May 2014, C-131/12 (Google Spain)

*37. Also, the organisation and aggregation of information published on the internet that are effected by search engines with the aim of facilitating their users' access to that information may, when users carry out their search on the basis of an individual's name, result in them obtaining through the list of results a structured overview of the information relating to that individual that can be found on the internet enabling them to establish a more or less detailed profile of the data subject*

## *B.* WHAT IS 'INTERNET OF THINGS'..? WHAT IS DATAFICATION? AND WHAT IS BIG DATA? (ETC..?)



VERORDENINGEN

VERORDENING (EU) 2016/679 VAN HET EUROPEES PARLEMENT EN DE RAAD
van 27 april 2016
betreffende de bescherming van natuurlijke personen in verband met de verwerking van persoonsgegevens en betreffende het vrije verkeer van die gegevens en tot intrekking van Richtlijn 95/46/EG (algemene verordening gegevensbescherming)

HET EUROPEES PARLEMENT EN DE RAAD VAN DE EUROPESE UNIE,

Gezien het Verdrag betreffende de werking van de Europese Unie, en met name artikel 16,

Gezien het voorstel van de Europese Commissie,

Na toezending van het ontwerp van wetgevingshandeling aan de nationale parlementen,

Gezien het advies van het Europees Economisch en Sociaal Comité (1),

Gezien het advies van het Comité van de Regio's (2),

Handelend volgens de gewone wetgevingsprocedure (3),

Overwegende hetgeen volgt:

(1) De bescherming van natuurlijke personen bij de verwerking van persoonsgegevens is een grondrecht. Krachtens artikel 8, lid 1, van het Handvest van de grondrechten van de Europese Unie (hierna „Handvest") en artikel 16, lid 1, van het Verdrag betreffende de werking van de Europese Unie (VWEU) heeft eenieder recht op bescherming van zijn persoonsgegevens.

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Internet of things

Forget the internet of things - we need an internet of people

From cars to umbrellas, everyday objects are becoming increasingly connected. But the question we need to ask is - should they be?

The internet of things is a vision of ubiquitous connectivity, driven by one basic idea: screens are not the only gateway to the ultimate network of networks.

With sensors, code and infrastructure, any object – from a car, to a cat, to a barcode - can become networked. But the question we need to ask is: should they be? And, if so, how?

[J. Judge & J. Powles 25 May 2015]

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It's hard to see what this [ie IoT] would look like, exactly. But imagining it shouldn't just be delegated to tech companies and opportunists riding the hype cycle.

Artists, designers, philosophers, lawyers, psychologists and social workers must be just as involved as engineers and internet users in shaping our collective digital future

[J. Judge & J. Powles 25 May 2015]

every breath you take
every move you make
every bond you break
every step you take…

datafication [*dey•tuh•fi•key•*shuh*•n*]

a modern technological trend turning many aspects of our life into computerized data and transforming this information into new forms of value [Mayer-Schönberger & Cukier 2013]

Singapore

## 'Smart lamp posts' in Singapore won't shine light into people's lives

An ambitious project is underway to equip lamp posts in Singapore with various capabilities to improve urban planning - serving to be more than just a light source.
For example, environmental sensors could potentially be added to monitor rainfall, humidity and temperature, and noise sensors to detect unusually loud sounds, such as a person screaming or a car crash.

With video sensors, it would be possible to incorporate facial recognition systems. Navigational beacons could also be mounted to direct autonomous vehicles while speed-trap sensors could be used to track speeding bicycles or personal mobility devices.

"The whole point of the sensor platform is to look at improving services, look at how to run the city and operate the city better and how to plan the city better. We have no plans to do moral policing or things like that."

"Admittedly there will be a very tiny sliver of cases, when you're tracking a person of interest, criminal on the run, and you're going to be using all this infrastructure to monitor those and track them. But that's going on already, there's no surprise and there's high public acceptance of that."

Instead, the professor warned that cybersecurity threats such as hacking and data leaks could be bigger dangers.

Amstelveen, 07 February 2017

## Test at Schiphol: boarding quickly and easily using facial recognition

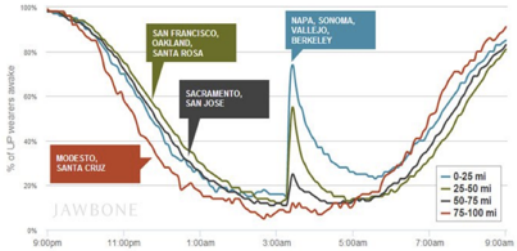
**Summary**

**Schiphol Airport has started a test with KLM involving "biometric boarding" – one-off boarding without showing your boarding pass or passport. Passengers board the aircraft quickly and easily using a special door that recognises passengers by their faces.**

With the help of this test, Schiphol and KLM want to study the technology of facial recognition – the system's speed, reliability, and user-friendliness. They will also examine the boarding process and the passenger experience. The ultimate aim is to make the boarding process as quick and easy as possible for our passengers. The test period will last a minimum of three months.

It will take place at a specially selected gate at the airport. Boarding with facial recognition will require passengers to register first. In the waiting area near the gate, there will be a special registration kiosk. KLM staff will assist the passengers.

Registration involves scanning the passport, the boarding pass, and the passenger's face. In the interest of privacy, the data will be used only for the test. Following boarding, all personal data will be erased. All data storage in the registration kiosk is erased after ten hours.



*Big Data is a generalized, imprecise term that refers to the use of large data sets in data-science and predictive analytics [Mayer-Schönberger & Cukier 2013]*

*Big data can be used to identify more general trends and correlations but it can also be processed in order to directly affect individuals [WP29 2013]*

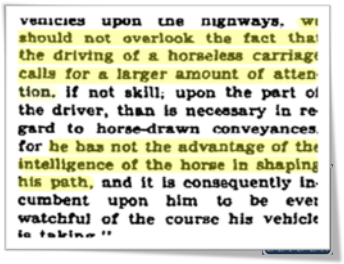
*high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making [www.gartner.com/it-glossary/big-data]*

*unprecedented computational power and sophistication make possible unexpected discoveries, innovations, and advancements in our quality of life [Whitehouse 2014]*

artificial intelligence or AI – the analysis of data to model some aspect of the world. Inferences from these models are then used to predict and anticipate possible future events [UK Government Office for Science 9 November 2016]

giving computers behaviours which would be thought intelligent in human beings [www.aisb.org.uk/public-engagement/what-is-ai]

machine learing – the set of techniques and tools that allow computers to 'think' by creating mathematical algorithms based on accumulated data [https://iq.intel.com/artificial-intelligence-and-machine-learning/]


vehicles upon the highways, w
should not overlook the fact tha
the driving of a horseless carriag
calls for a larger amount of atten
tion, if not skill, upon the part o
the driver, than is necessary in re
gard to horse-drawn conveyances
for he has not the advantage of th
intelligence of the horse in shaping
his path, and it is consequently in
cumbent upon him to be ever
watchful of the course his vehicl

## C. *HOW IOT & DATAFICATION & BIG DATA (ETC.) CHALLENGE DP LAW*

distinctive aspects of big data analytics

- use of algorithms → *profiling and automated decision-making (art. 22 GDPR)*
- opacity of the processing → *transparency (art. 12-14 GDPR)*
- tendency to collect 'all the data' → *data minimization (art. 5.1 GDPR)*
- repurposing of data, and → *purpose limktation (art. 5.1b GDPR)*
- use of new types of data

«function creep»

**(in British)** *noun* the gradual widening of the use of a technology or system beyond the purpose for which it was originally intended, *esp*. when this leads to potential invasion of privacy

for instance CCTV for safety at school & kissing girls…

for instance pizzadelivery & health insurance

for instance test of learrning capabilities and problem families

for instance public transport card & distribution of cost & security

for instance facial recognition & shorten waiting time & surveillance

etcetera…

correlation ≠ causation

in a big-data age most innovative secondary uses [of data] haven't been imagined when the data is first collected. How can companies provide notice for a purpose that has yet to exist? How can individuals give informed consent to an unknown…?

[Mayer-Schönberger & Cukier 2013]

free, specific, informed and unambiguous 'opt-in' consent would almost always be required, otherwise further use cannot be considered compatible

[WP29 2013]

## AI-principles

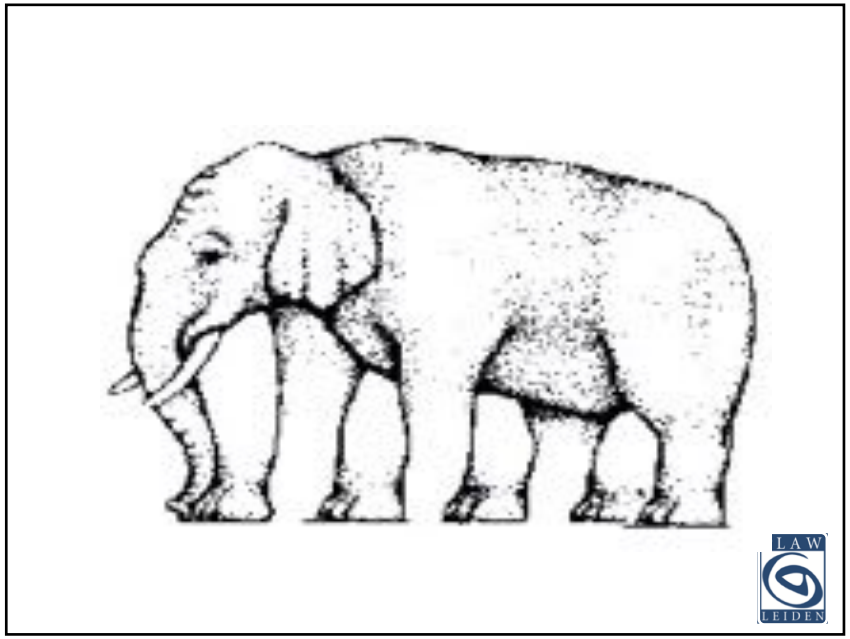
human centric – deploy AI only if there is a clear benefit for people and society | *no unfair bias*

human control – our processes will remain within human control | *no black box*

human accountability – we will remain accountable | *no blaming the algorithm*

human decision making – transparency about decisions and underlying reasoning | *review and appeal*

## AI Principles

- human agency and oversight
- technical robustness and safety
- privacy and data governance
- transparency
- diversity, non-discrimination and fairness
- societal and environmental well-being
- accountability

1984
A Novel by
GEORGE ORWELL
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