



Limits, Opportunities and Ethics of AI in the Courts: the Finnish Perspective

AI in the Service of the Judiciary 27.9.2018
Assistant professor Riikka Koulu

**LEGAL
TECH
LAB** 

CEPEJ/Riikka Koulu



- Growing demand for AI ethics
- Measuring fairness of human/ non-human decision making is not easy
- The Finnish perspective: mapping out regulatory framework for algorithmic decision making
- Fairness-aware AI requires both rights by design and different procedural safeguards

Loomis v. Wisconsin

Petition for certiorari denied on June 26, 2017

Docket No.	Op. Below	Argument	Opinion	Vote	Author	Term
16-6387	Wis.	N/A	N/A	N/A	N/A	OT 2016

Issues: (1) Whether it is a violation of a defendant's constitutional right to due process for a trial court to rely on the risk assessment results provided by a proprietary risk assessment instrument such as the Correctional Offender Management Profiling for Alternative Sanctions at sentencing because the proprietary nature of COMPAS prevents a defendant from challenging the accuracy and scientific validity of the risk assessment; and (2) whether it is a violation of a defendant's constitutional right to due process for a trial court to rely on such risk assessment results at sentencing because COMPAS assessments take gender and race into account in formulating the risk assessment.

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Northpointe COMPAS

COMPAS Core is designed for offenders recently removed from the community or currently in the community.

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Northpointe Specialty Courts

Northpointe Specialty Court is an integrated software solution managing all offender processing and case/court activities.

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Northpointe Pretrial

Use Northpointe Pretrial to assess offender risk to public safety if released to the community.

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Intelligent Machines

Biased Algorithms Are Everywhere, and No One Seems to Care

The big companies developing them show no interest in fixing the problem.

by Will Knight July 12, 2017

Secure | <https://www.mckinsey.com/business-functions/risk/our-insights/controlling-machine-learning-algorithms-and-their-biases>



Secure | <https://www.theatlantic.com/technology/archive/2018/01/equivalent-compas-algorithm/550646/>

TECHNOLOGY

A Popular Algorithm Is No Better at Predicting Crimes Than Random People

The COMPAS tool is widely used to assess a defendant's risk of committing more crimes, but a new study puts its usefulness into perspective.

ED YONG JAN 17, 2018

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Secure | <https://bdtechtalks.com/2018/03/26/racist-sexist-ai-deep-learning-algorithms/>

TechTalks

HOME BLOG TIPS & TRICKS WHAT IS

Home » What is... » What is algorithmic bias?

What is algorithmic bias?

By Ben Dickson - March 26, 2018

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Controlling machine-learning algorithms and their biases

By Tobias Baer and Vishnu Kamalnath

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Myths aside, artificial intelligence is as prone to bias as the human kind. The good news is that the biases in algorithms can also be diagnosed and treated.



Justice

- How do we ensure that the benefits of AI are available to everyone?
- Must we fight against the concentration of power and wealth in the hands of a small number of AI companies?
- What types of discrimination could AI create or exacerbate?
- Should the development of AI be neutral or should it seek to reduce social and economic inequalities?
- What types of legal decisions can we delegate to AI?

Proposed principle:

The development of AI should promote justice and seek to eliminate all types of discrimination those linked to gender, age, mental / physical abilities, sexual orientation, ethnic / social and religious beliefs.



Tallinn Declaration
on eGovernment
the ministerial meeting during
the Presidency of the Council
of the EU on 6 October 2017

European Parliament

Procedure : 2015/2103(INL)

Document selected : A8-0005/2017

Texts tabled : A8-0005/2017	Debates : PV 15/02/2017 - 14 CRE 15/02/2017 - 14	Votes : PV 16/02/2017 - 6.9
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REPORT

27 January 2017

with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL))

Committee on Legal Affairs
Rapporteur: Mady Delvaux
(Initiative – Rule 46 of the Rules of Procedure)
Rapporteurs for the opinions (*):
Georg Mayer, Committee on Transport and Tourism
Michał Boni, Committee on Civil Liberties, Justice and Home Affairs
(*) Associated committees – Rule 54 of the Rules of Procedure

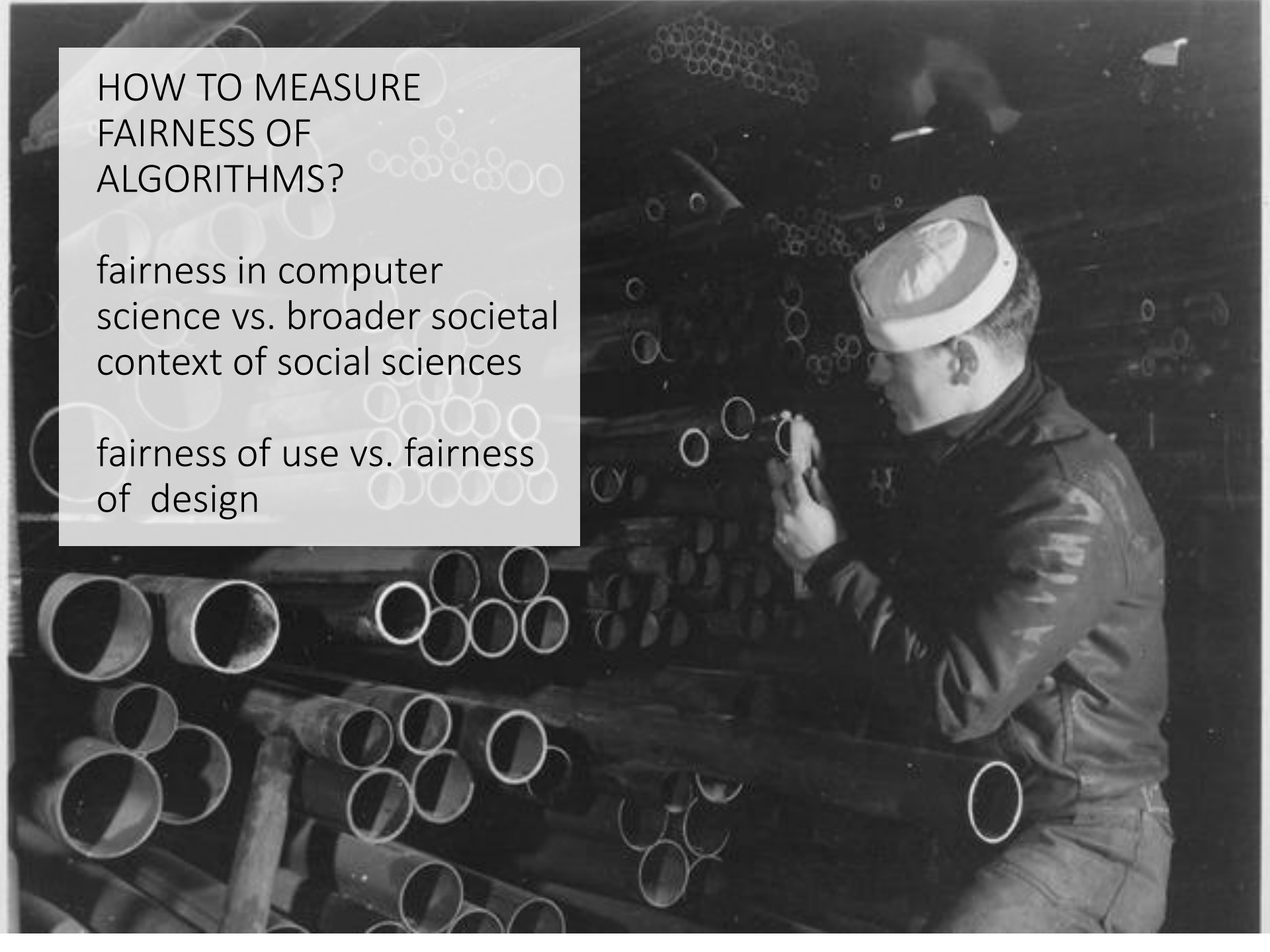


STARTING POINT: USE OF ALGORITHMS IN LEGAL PRACTICE NEEDS TO BE FAIR (!!)

HOW TO MEASURE FAIRNESS OF ALGORITHMS?

fairness in computer
science vs. broader societal
context of social sciences

fairness of use vs. fairness
of design



The ethics of algorithms: Mapping the debate

**Brent Daniel Mittelstadt¹, Patrick Allo¹, Mariarosaria Taddeo^{1,2},
Sandra Wachter² and Luciano Floridi^{1,2}**

Big Data & Society
July–December 2016: 1–21
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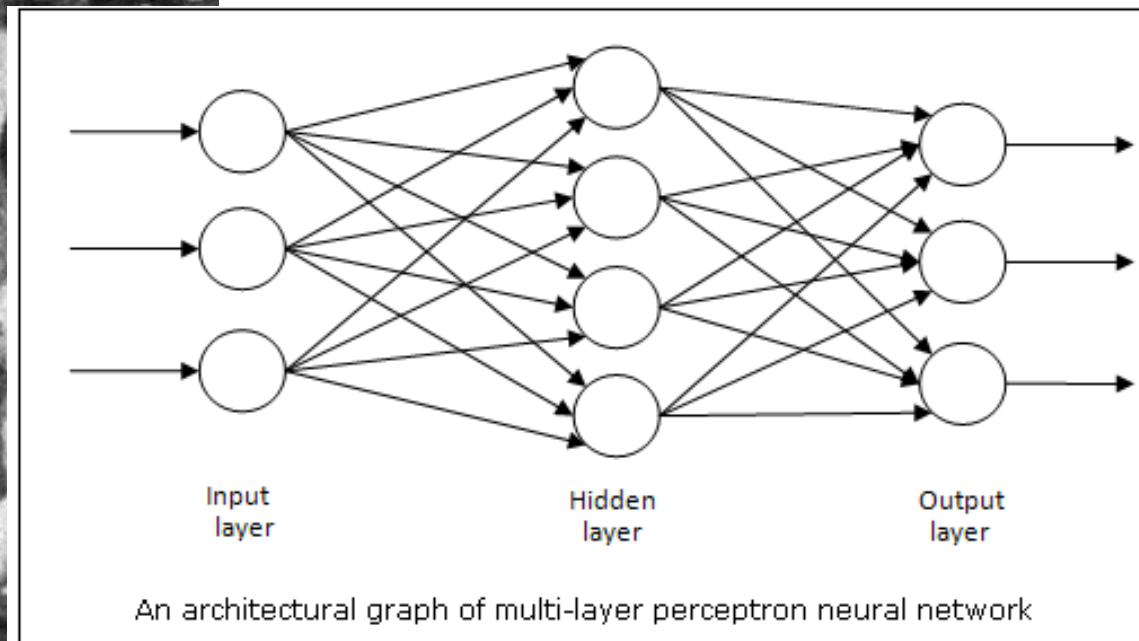
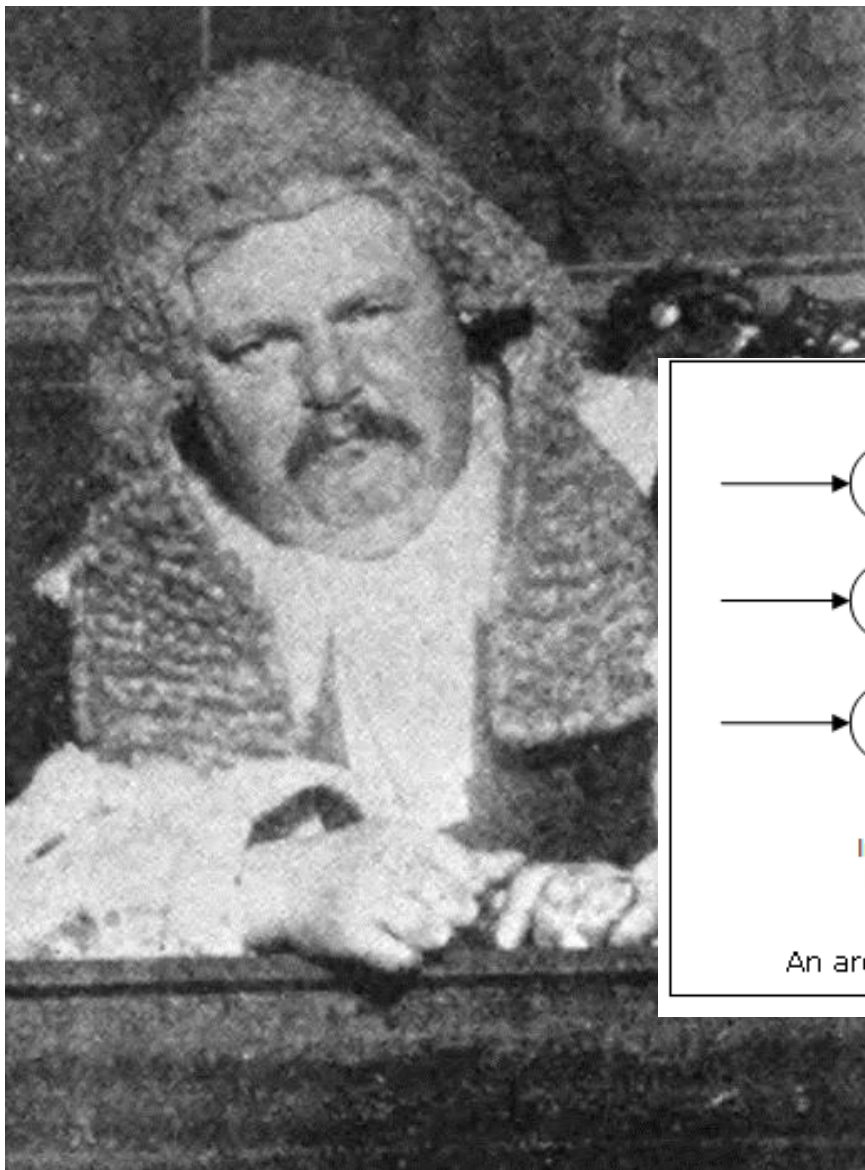
Abstract

In information societies, operations, decisions and choices previously left to humans are increasingly delegated to algorithms, which may advise, if not decide, about how data should be interpreted and what actions should be taken as a result. More and more often, algorithms mediate social processes, business transactions, governmental decisions, and how we perceive, understand, and interact among ourselves and with the environment. Gaps between the design and operation of algorithms and our understanding of their ethical implications can have severe consequences affecting individuals as well as groups and whole societies. This paper makes three contributions to clarify the ethical importance of algorithmic mediation. It provides a prescriptive map to organise the debate. It reviews the current discussion of ethical aspects of algorithms. And it assesses the available literature in order to identify areas requiring further work to develop the ethics of algorithms.

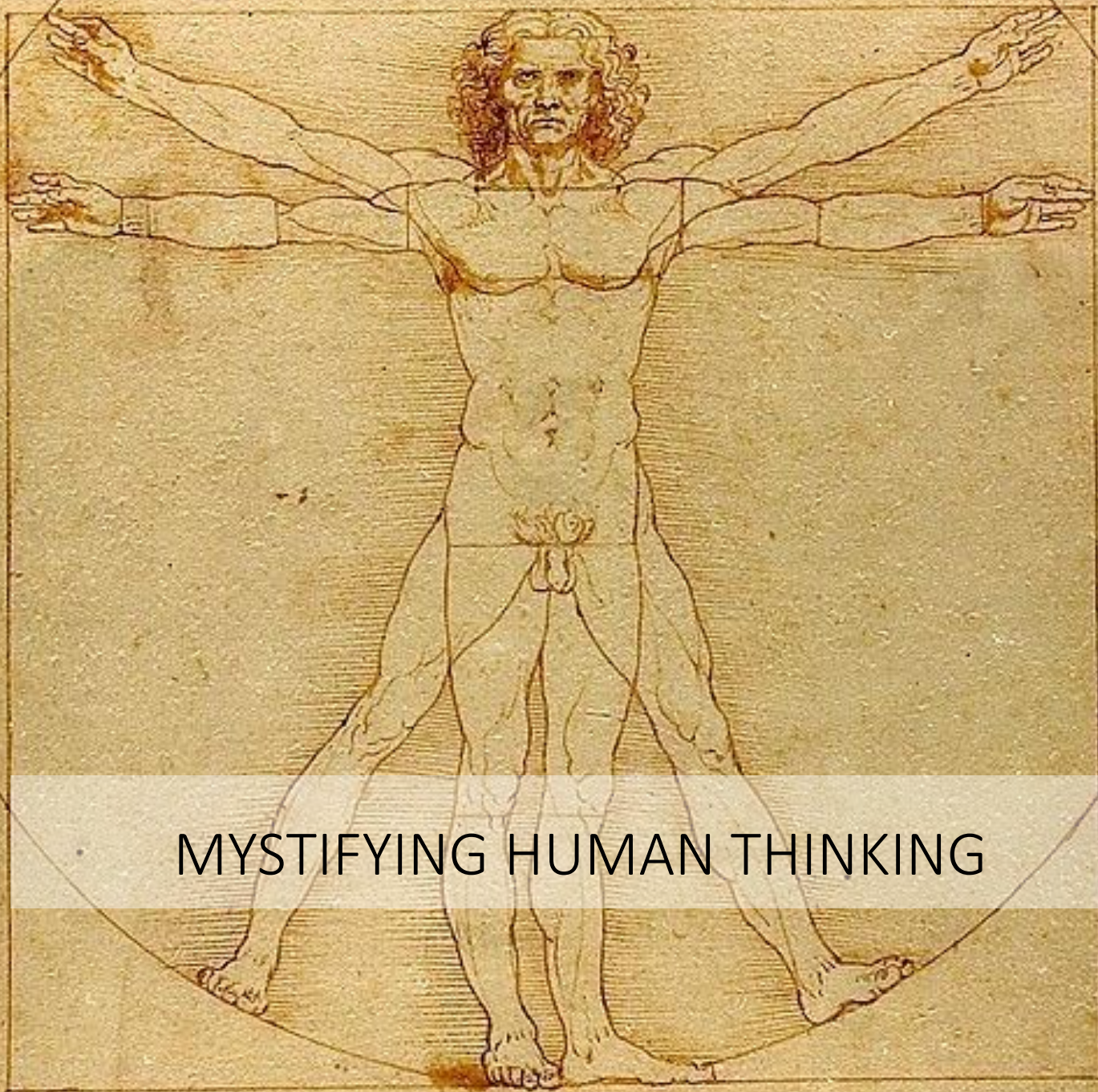
Keywords

Algorithms, automation, Big Data, data analytics, data mining, ethics, machine learning

COMPARISONS BETWEEN BLACK BOXES OF LEGAL REASONING



Alan Fung (2010):
<http://www.ouhk.edu.hk/~sctwww/computing/project/DisplayAlanFung.htm>



MYSTIFYING HUMAN THINKING



OBJECTIVE TECHNOLOGY FALLACY



DESCRIPTION

Publisher and release date	Prime Minister's Office, 31.05.2018		
Authors	Riikka Koulu, Beata Mäihäniemi, Vesa Kyyrönen		
Title of publication	Algoritmi päätöksentekijänä? Tekoälyn hyödyntämisen mahdollisuudet ja haasteet kansallisessa sääntely-ympäristössä		
Name of series and number of publication	Publications of the Government's analysis, assessment and research activities x/2018		
Keywords	Artificial intelligence, robotics, algorithm, digitalization, algorithmic decision-making, administration, administrative procedure, public officer, liability, agency, data		
Release date	May 2018	Pages 38	Language Finnish

Abstract

This interim report is about the legal aspects of public algorithmic decision-making. This report is part of the government's artificial intelligence program 5.2. The report to be published is an independent interim report on subsection 5.2 B "Artificial intelligence in public services and the need for change in the information infrastructure: Part I: The utilization of robotics and artificial intelligence in public services".

In this interim report, the research group has handled the preliminary points, which have risen at the beginning of the research. The research group has especially mapped the legal possibilities and horizons in both national and international materials. The interim report emphasizes the legal-technical definition, international examples and tentative analysis of the legal framework.

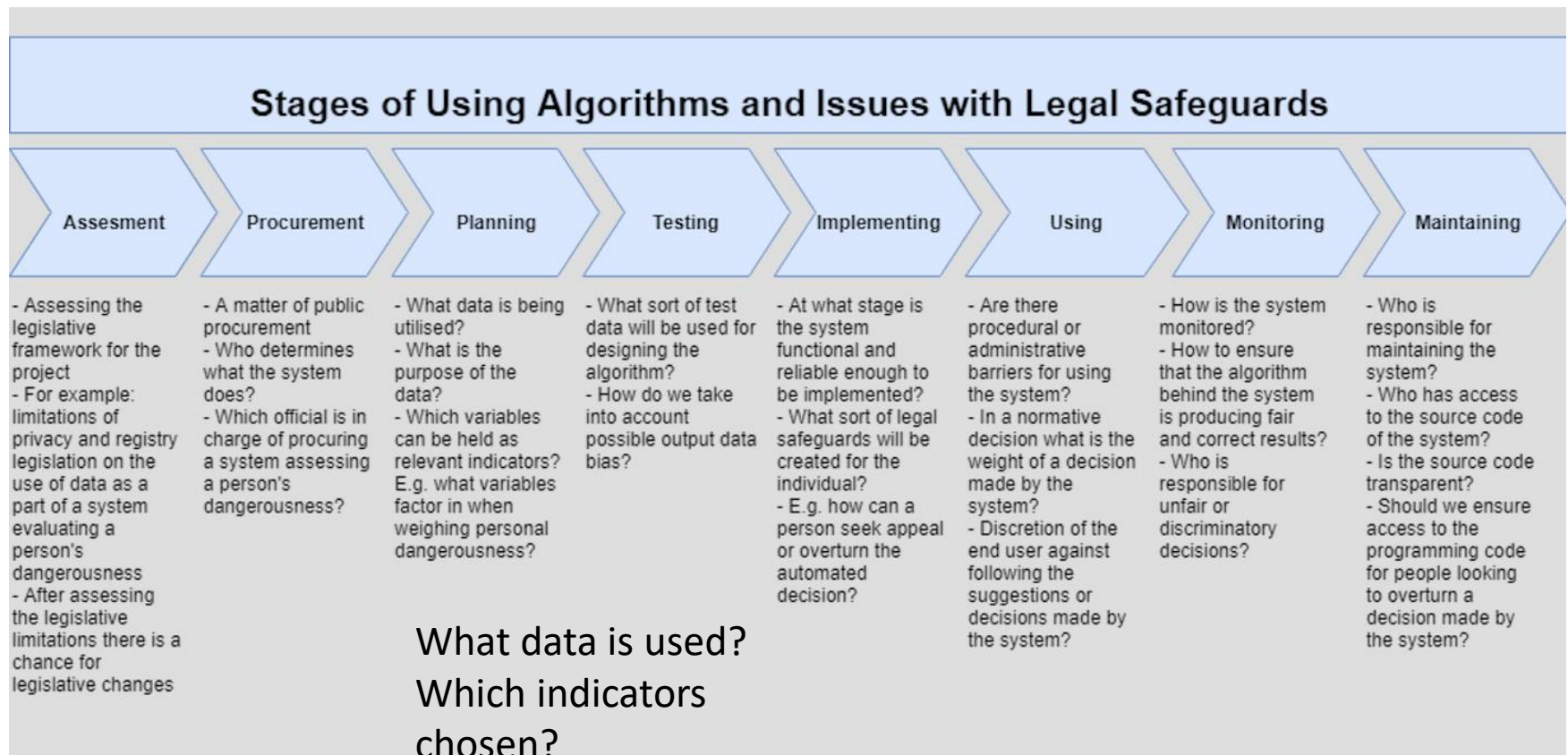
The most important conclusions in the interim report are twofold. Firstly, during research, common perceptions of the legal boundaries of algorithmic decision-making have emerged. These are, for example, the strong contextual connection of the legal analysis of the algorithmic fairness, as well as the division of executive orders based on the limits of their discretion. Contextual coherence is imperative in order for the analysis to adequately take into account the features and operating conditions of software robotics and artificial intelligence applications without overly simplifying them.

RESEARCH PROJECT ON PUBLIC ALGORITHMIC DECISION MAKING

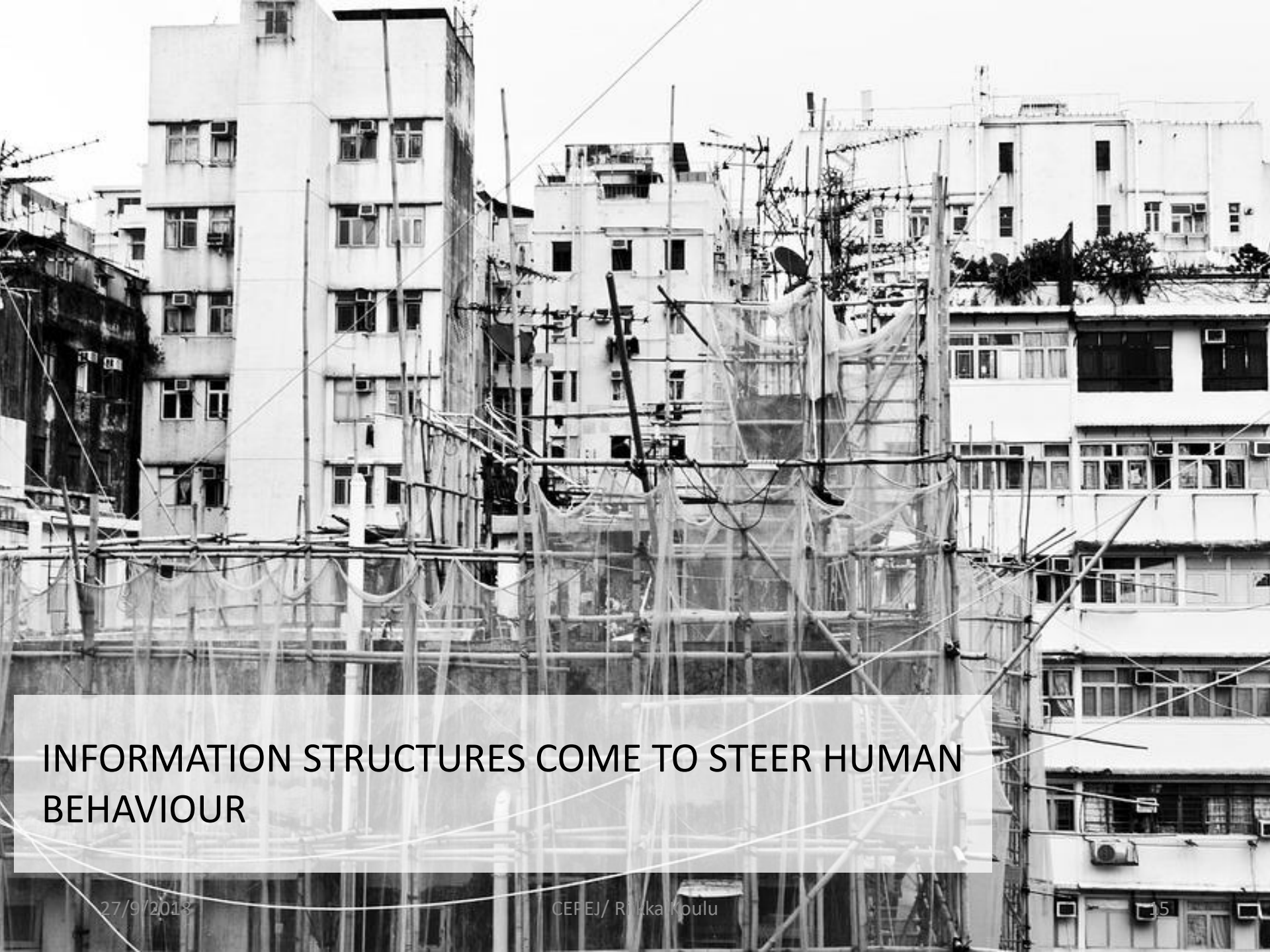
- RPA/ AI automation (autonomous decision making, decision support, customer service)
- scope of application dependent on e.g. context and level of discretion in the case
- Hands-on legal concerns: legal agency (e.g. who signs the judgment, fragmented decision making), questions of liability, rights and obligations related to data (how to collect data for AI systems), good administration (grounds for the decision), etc.

Mapping out Legal Issues of Algorithmic Decision Making

How to appeal?
Auditing processes?



What data is used?
Which indicators chosen?
Rights by design



INFORMATION STRUCTURES COME TO STEER HUMAN BEHAVIOUR

1. **Algorithmic Transparency** (e.g. Technical challenges for reducing opacity (types and causes of opacity); Technical solutions for reducing opacity; UX challenges/solutions for providing greater transparency; Tension/solutions to providing algorithmic transparency without impinging on Intellectual Property rights)
2. **Algorithmic Accountability** (e.g. Technical challenges/solutions for identifying responsibility for algorithmic decisions; Mechanisms to enable questioning and redress for individuals and groups; Methods to verify algorithmic system behaviour (especially in relation to legal/standards compliance))
3. **Governance frameworks for algorithmic systems** (e.g. Framework to insure proper inspection of algorithmic system; development/deployment – does it reflect the values of fairness set by lawmakers, judges and the public?; Frameworks for allocating responsibility and/or liability for algorithmic decisions; Creation of ethical framework for transparent processing of personal data and automated decision making)
4. **Algorithmic Fairness (social justice)** (e.g. Classification of level of significant social impact from algorithmic decisions; Compliance with standards of legal fairness; Potential for bias/discrimination by algorithmic decisions – causes/solutions; Impact of algorithmic systems on Data Subject Privacy (e.g. inference of privacy sensitive factors); Potential for algorithmic systems to manipulate the democratic process)
5. **Algorithmic Fairness (business practices)** (e.g. Algorithmic tools for ‘cartels’, implicit collusion on pricing through algorithmic ‘synchronizing’; Price manipulation by algorithmic personalization; Key issues relating to algorithmic system Intellectual Property rights)
6. **Technological and societal needs** for: Algorithmic literacy; Algorithmic transparency; Algorithmic oversight

EUROPEAN PARLIAMENT STUDY FOR POLICY RECOMMENDATIONS

Report will be published at:

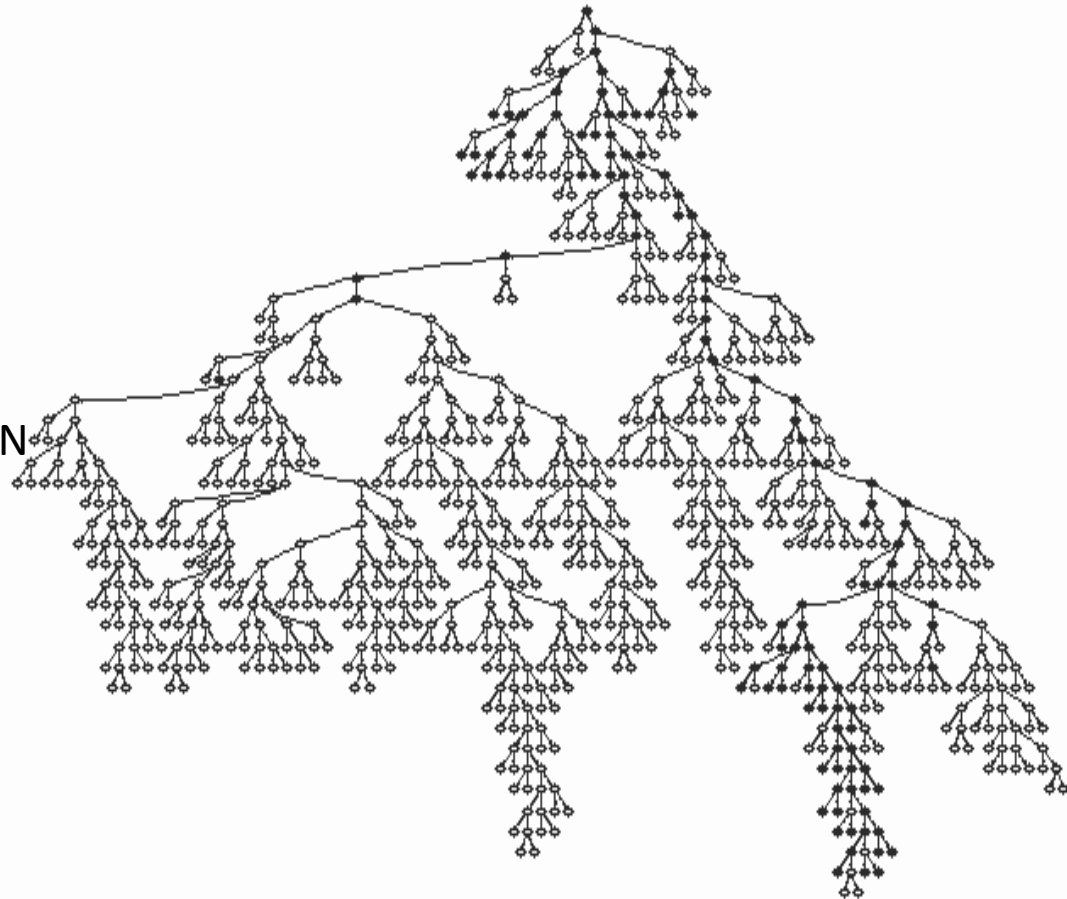
<http://www.europarl.europa.eu/stoa/cms/home/studies>



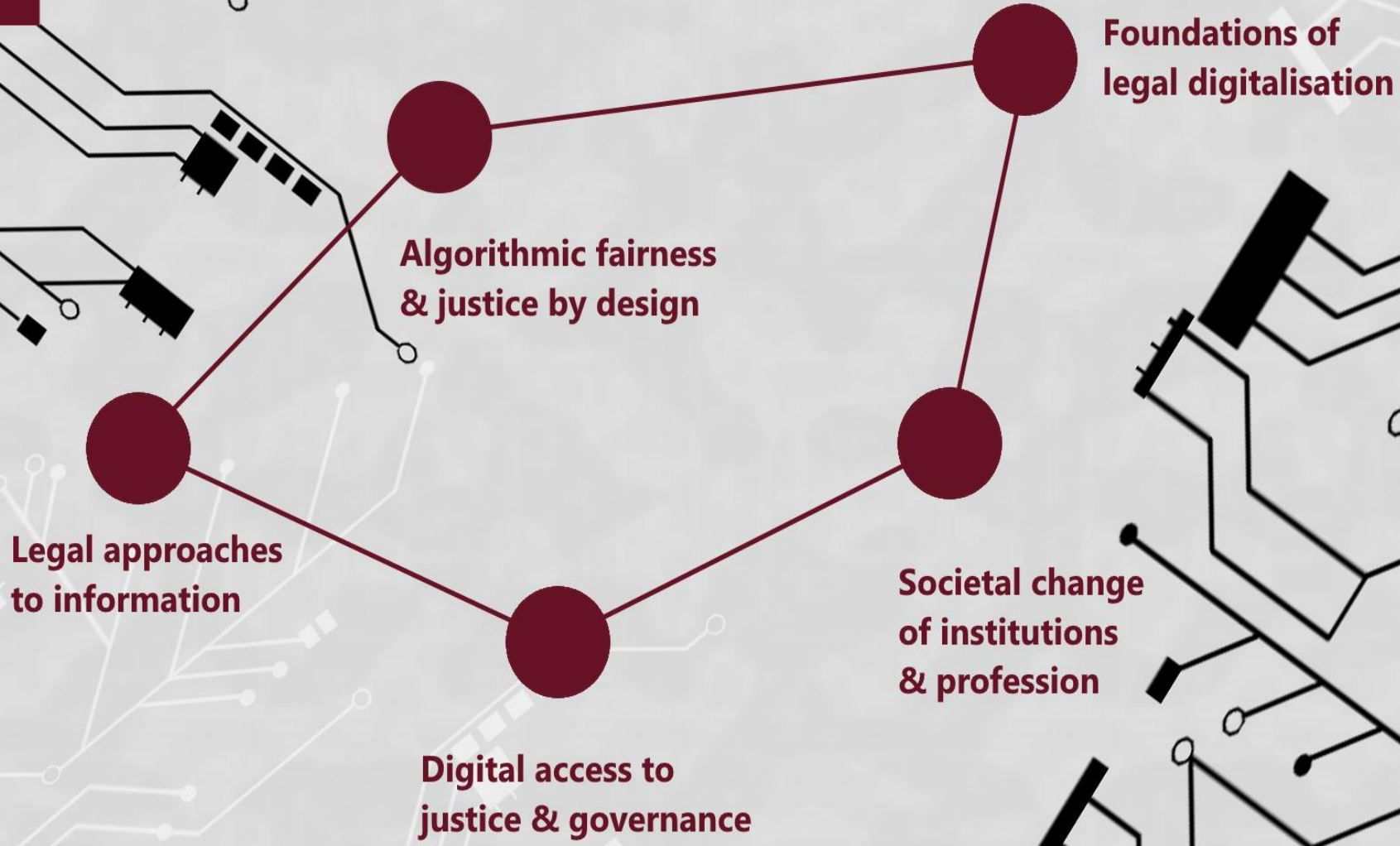
ALGORITHMIC TRANSPARENCY OPENS
ALL THE BLACK BOXES?

TRANSPARENCY IS NO SILVER BULLET BUT IT'S A START

- Banning black boxes would impose unrealistic limitations on the use of algorithms
- Transparency does not guarantee understanding
- Transparency is not fairness
- BUT ALGORITHMIC TOOLS MAY IMPROVE TRANSPARENCY OF HUMAN REASONING
- And algorithmic models can assist in algorithmic auditing processes



https://docs.waylay.io/usage/waylay_engine/



**12.-14.10.2018
Hack the Law!**

**3.12.2018
Sleetmakers.com**

**7.6.2019
Legal Tech Con: Algorithmic Law**

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