Towards algorithmic accountability in the public sector

MSc thesis defence | Politics and Policy Analysis

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The 2020 Ofqual case

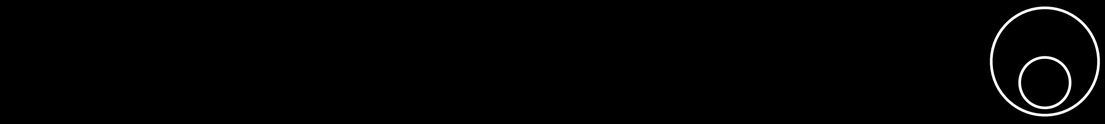
Policymakers' techno-solutionism, algorithmic discrimination, and a policy failure

Research questions

“How can the public sector adopt algorithms without infringing accountability?”

1. What do algorithms in the public sector do?
2. What is algorithmic accountability in the public sector?
3. What can governments do to ensure algorithmic accountability?

What do algorithms in the public sector do?



The use of algorithms in the public sector

History and overview

- Algorithms emerge from “a zeitgeist of formalisation, rationalisation, and automation”, present until the World War II (Levy et al., 2021)
- Cheap computing power, great availability of data and better algorithms
- Great part of the research relies on anecdotal knowledge (JRC, 2022)
- Main areas of public sector activity benefitting of AI algorithms are healthcare, transportation, security, and general public services (OECD, 2019; JRC, 2022)

Benefits and risks

Paradoxical situation where administrations are adopting algorithms without being backed by evidence and empirical information (JRC, 2022)

Benefits
(Faulkner & Kaufman, 2022)

- Efficiency
- Service delivery quality
- Trust and legitimacy
- Outcome achievement

Risks

- Transparency
  👁️ Motivation and black boxes
- Fairness
  ⛓️ Reflect and amplify inequalities
- Accountability
  🖐️ Power to raise questions

Two takeaways

1. We can never blame the tech in the algorithmic society and we should pay attention to power (Birch, 2020; Schuilenburg & Peeters, 2021)

   ⚙️ **Automated decision-making systems (ADMSs)** (Spielkamp, 2019)

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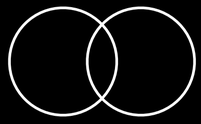
2. The moment is now. Social shaping of technology: society and technology do not run on parallel lines (Williams & Edge, 1996) and innovation trajectory has two key moments:

   🪟 **Window of opportunity**: interpretative flexibility and competing narratives

   🔒 **Closure**: flexibility is lost and changes are increasingly less likely

What is algorithmic accountability in the public sector?



Public accountability

Scholarship is fragmented and non-cumulative. A minimal conceptual consensus on accountability can be found (Bovens et al., 2014):

- It is about answering **legitimate claims**
- it is a **relational** concept
- the relationship is between actors that take names such as **actor-forum**, accountor-accountee, and principal-agent
- it is related to a **consequence**

+ “accountability in, and about, the **public domain**”

Algorithmic accountability in the public sector

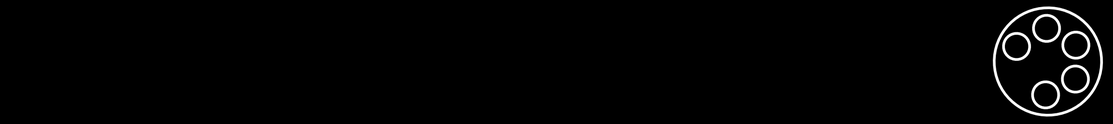
- Who is the **actor**?
  👨‍💼 Policymakers, developers, screen-level bureaucrats?

- Who is the **forum**?
  🙋‍♀️ Citizens, parliament, DPA? Accessing the internal working of the algorithm?

- What is their **relationship**?
  🗣️ The importance of the recognition of the authority (Novelli et al., 2023)

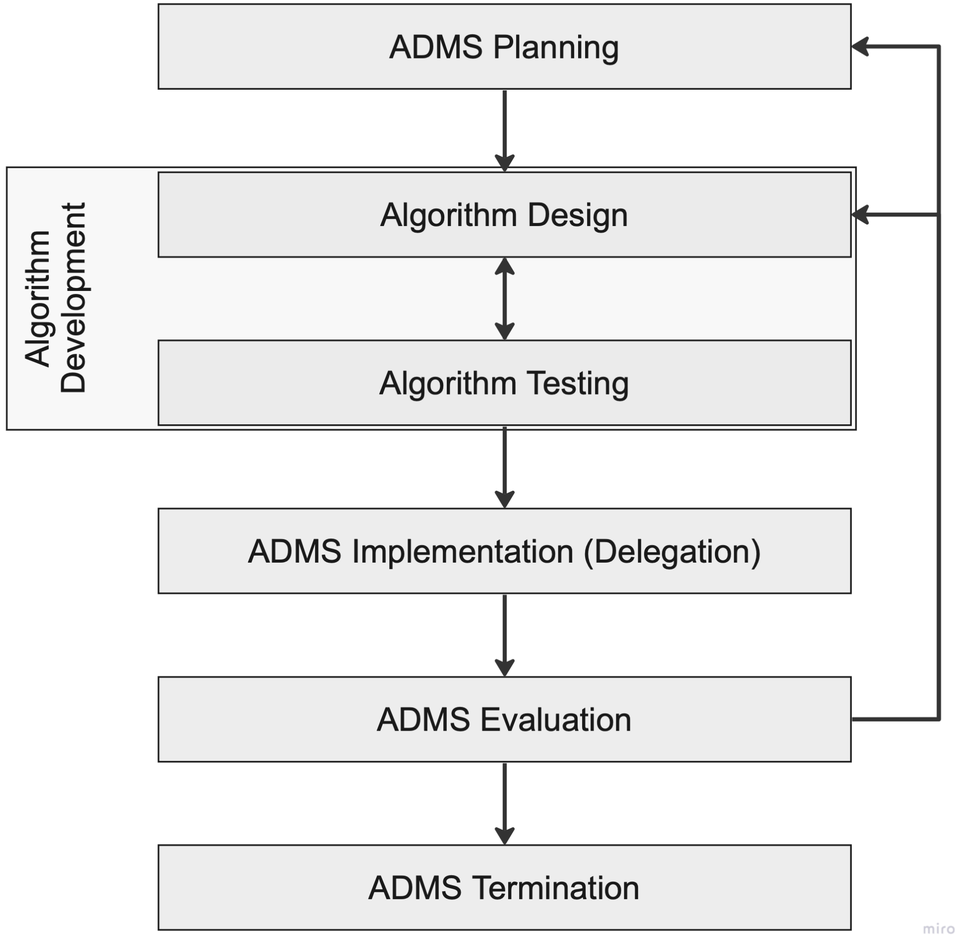
- How does **account** and **consequences** look like?
  📪 Legal mandate to distinguish moral responsibility. Ex-ante and/or ex-post?

What can governments do to ensure algorithmic accountability in the public sector?



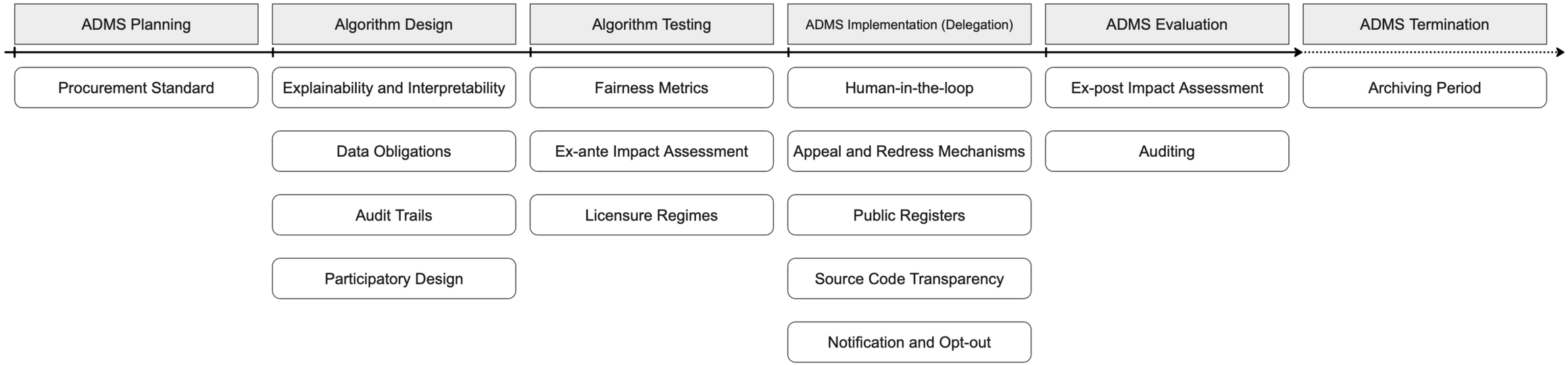
The ADMS lifecycle

- A lifecycle is a model representing the series of stages through which something passes during its lifetime
- There are many lifecycles on the development of AI, ML and software, e.g. CRISP-DM, TDSP, ISO/IEC DIS 5338
- But they do not capture the socio-technical and political nature of the ADMS



The algorithmic accountability policy mapping

19 policies structured around the ADMS lifecycle



Leveraging the mapping

- Algorithmic accountability policies as constraints against the free behaviour of the ADMS' agents
- Finding a balance between accountability deficit and overload (Halachmi, 2014)
- **Which combination of algorithmic accountability policies is optimal?**

  📄 Which success criteria? A political decision

  🔬 What evidence? Three proposals: empirical analysis, the accountability cube (information + discussion + consequences), and simulations

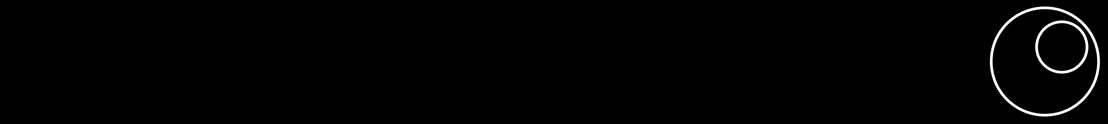
Conclusion

- ADMS are increasingly being adopted and they should be regarded as socio-technical systems. They present benefits and risks and balancing the two is a matter of policy. Currently, a regulatory window of opportunity is open.

- Algorithmic accountability benefits from being understood in light of the debate on public accountability, understanding who is accountable to whom, for what, by which standards, and why. Bridging principles and practice should be the ambition.

- Policymakers can adopt algorithmic accountability policies. Empirical research is crucial and the mapping — based on the ADMS lifecycle — is a step in this direction. An assessment of what policy solutions work best and why is needed.

Thank you very much!



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