

How Policymakers Can Foster Algorithmic Accountability

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Accountability in the Algorithmic Economy

May 22, 2018

OVERVIEW

1. Algorithms pose new challenges
2. Existing proposals are flawed
3. Algorithmic accountability is the right approach
4. Implementing algorithmic accountability
5. Impact
6. Additional steps



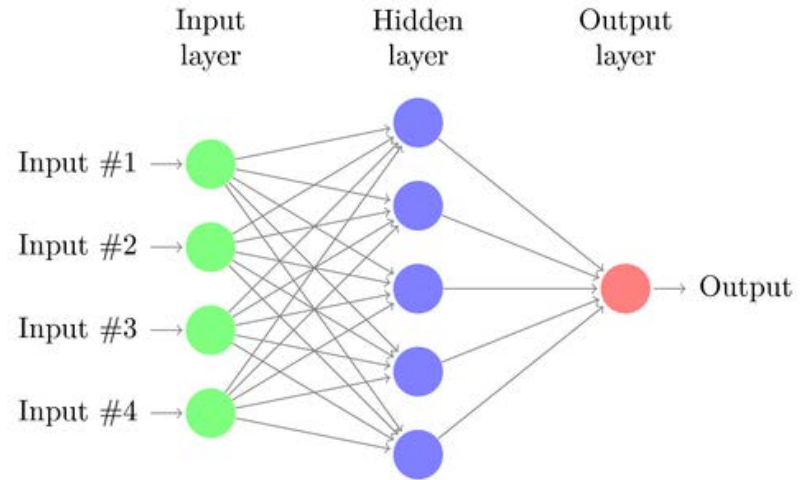
ALGORITHMS POSE NEW CHALLENGES

Complexity:

- Many ways bias can influence an algorithm
- Difficult to interpret

Scalability:

- Risk amplifying flaws on a large scale



Model of a neural network. Source: TeXample.net.

EXISTING PROPOSALS ALGORITHMS ARE FLAWED



Angela Merkel discussing algorithmic transparency. Source: Medientage.

- Mandates for algorithmic transparency and explainability:
- Hold algorithms to a standard that does not exist for humans.
 - Incentivize the use of less effective AI.
 - Assume the public and regulators could interpret source code.
 - Are useful in select contexts; ineffective or harmful in most others.

EXISTING PROPOSALS ALGORITHMS ARE FLAWED

Master regulatory bodies:

- Ignores the need for context-specific expertise.
- Assumes regulators cannot develop the expertise to understand algorithms.



Elon Musk at the NGA 2017 Summer Meeting. Source: National Governors Association.

EXISTING PROPOSALS ALGORITHMS ARE FLAWED



Theresa May at Davos 2018. Source: Number 10.

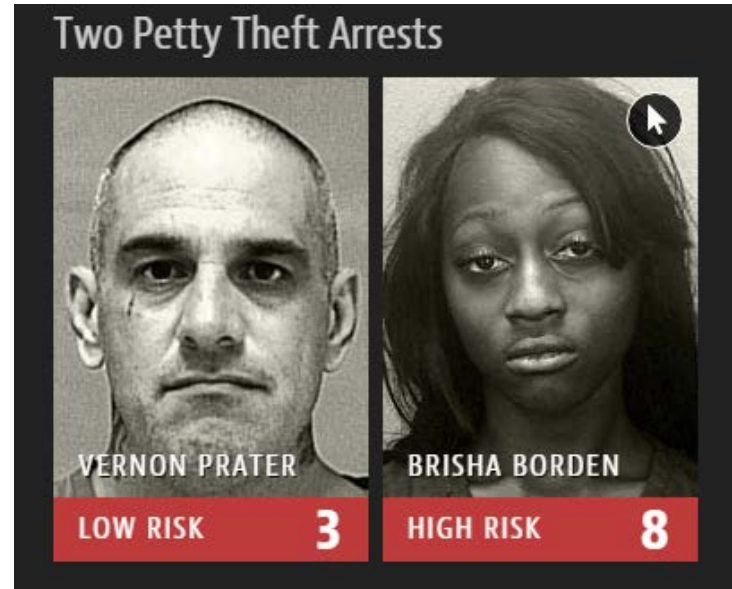
Generalized regulatory proposals:

- Lack specifics about how to operationalize.
- Rely on platitudes that do not translate to effective governance.

EXISTING PROPOSALS ALGORITHMS ARE FLAWED

Doing nothing:

- Market forces usually provide adequate incentives:
 - Bad decisions hurt a company
 - Consumer feedback and outrage
- Harms are minimal in many cases
- Some use-cases are less subject to these feedback mechanisms.



*A ProPublica investigation revealing racial bias in COMPAS, a risk-assessment algorithm.
Source: ProPublica.*

ALGORITHMIC ACCOUNTABILITY IS THE RIGHT APPROACH



Pepper the robot.

Source: Tokumeigakarinoaoshima.

Algorithmic accountability is the principle that an algorithmic system should employ a variety of controls to ensure the “operator” (i.e., the party responsible for deploying the algorithm) can:

- Verify it acts in accordance with the operator’s intentions; and
- Identify and rectify harmful outcomes.

DEFINING ALGORITHMIC ACCOUNTABILITY

Verify it acts in accordance with the operator's intentions:

- Transparency
- Explainability
- Confidence measures
- Procedural regularity

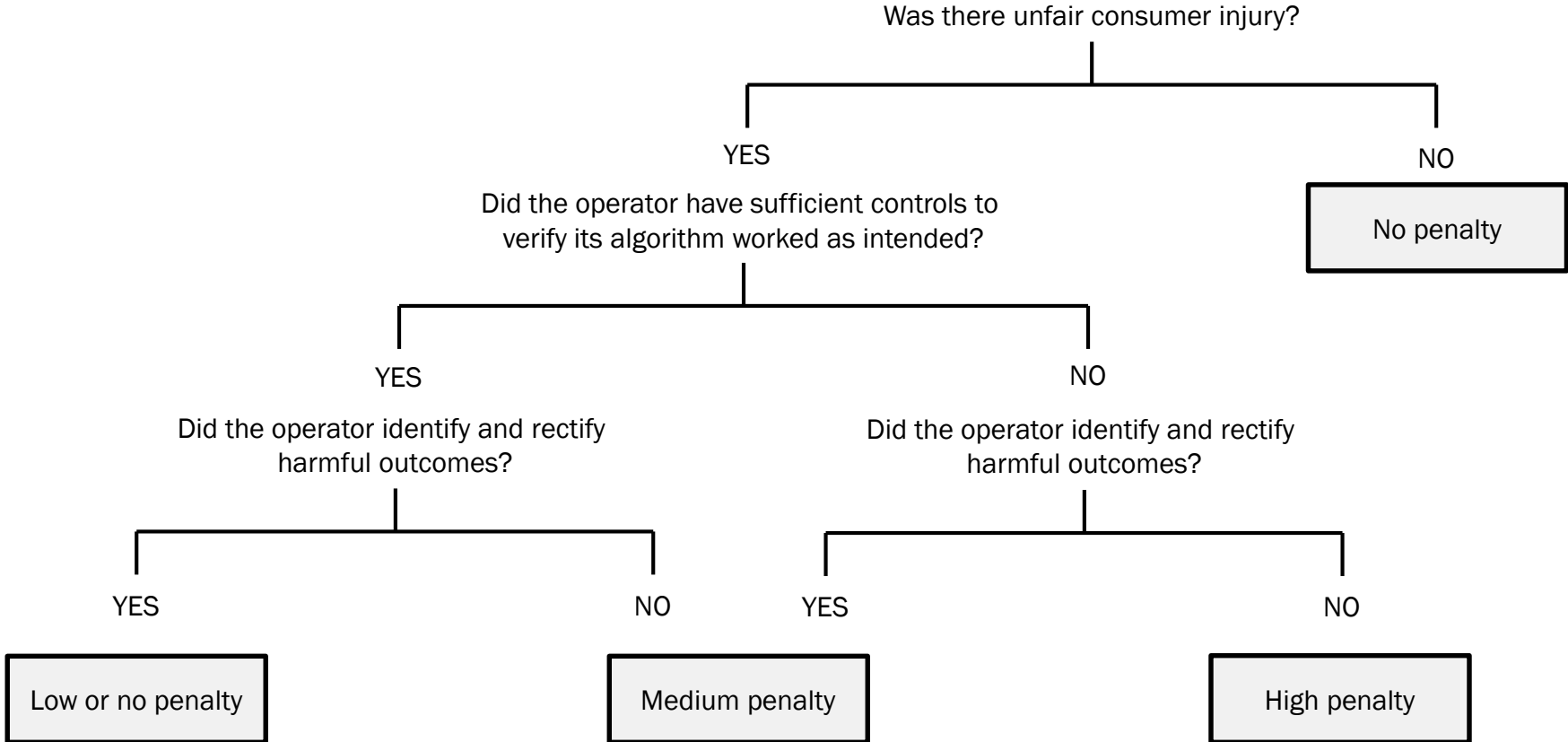
Identify and rectify harmful outcomes:

- Impact assessment
- Error analysis



Datumbox Machine Learning Framework. Source: Datumbox.

IMPLEMENTING ALGORITHMIC ACCOUNTABILITY



IMPACT

- Operators have a clear understanding of regulatory oversight and would proactively embrace algorithmic accountability.
- Market forces would encourage adherence to algorithmic accountability.

ADDITIONAL STEPS

- Adopt this as the U.S. approach and advocate for its adoption abroad.
- Implement specific statutes for algorithmic accountability for specific applications when appropriate.
- Increase regulators' technical expertise.
- Invest in new methods for achieving algorithmic accountability.



Federal Trade Commissioner Joseph Simons. Source: Andrew Harrer/Bloomberg.

CONCLUSION

- Algorithms pose new challenges, but existing proposals and the EU's approach would not be effective and would harm innovation.
- Algorithmic accountability is the right solution to the challenges posed by algorithmic decision-making.



European Commission. Source: Pixabay/Jai79.

THANK YOU

- How Policymakers Can Foster Algorithmic Accountability:
 - <http://www.datainnovation.org/2018/05/how-policymakers-can-foster-algorithmic-accountability/>
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