

Addressing bias in big data and AI for healthcare: a call for open science

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MI gender bias costing women's lives, new BHF campaign warns

Women are disadvantaged at diagnosis, treatment and management of myocardial infarction, BHF research shows

BRIEF REPORT

Gender imbalance in medical imaging datasets produces biased classifiers for computer-aided diagnosis

Agostina J. Larrazabal, Nicolás Nieto,  Victoria Peterson,  Diego H. Milone, and  Enzo F...

+ See all authors and affiliations



AI Bias Could Put Women's Lives At Risk – A Challenge For Regulators



Carmen Niethammer Contributor  

Diversity, Equity & Inclusion

Feature » Racism in Medicine

Can we trust AI not to further embed racial bias and prejudice?

BMJ 2020 ; 368 doi: <https://doi.org/10.1136/bmj.m363> (Published 12 February 2020)

Cite this as: BMJ 2020;368:m363

NEWS · 24 OCTOBER 2019 · UPDATE 26 OCTOBER 2019

Millions of black people affected by racial bias in health-care algorithms

Study reveals rampant racism in decision-making software used by US hospitals – and highlights ways to correct it

POLICY & ETHICS | OPINION

Health Care AI Systems Are Biased

We need more diverse data to avoid perpetuating inequality in medicine

By Amit Kaushal, Russ Altman, Curt Langlotz on November 17, 2020

HEALTH

AI-Driven Dermatology Could Leave Dark-Skinned Patients Behind

Machine learning has the potential to save thousands of people from skin cancer each year—while putting others at greater risk.

ANGELA LASHBROOK AUGUST 16, 2018

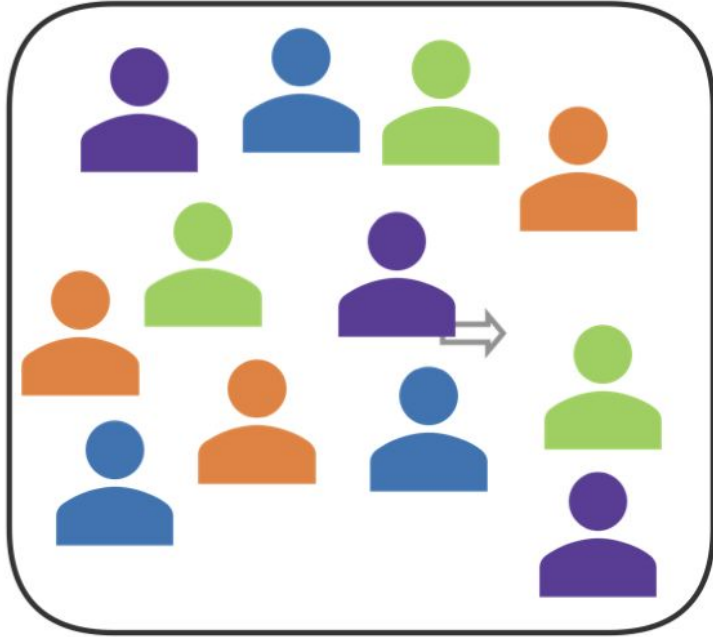
HEALTHYSELF, ALGORITHM

If AI is going to be the world's doctor, it needs better textbooks

Healthcare Algorithms Are Biased, and the Results Can Be Deadly

Deep-learning algorithms suffer from a fundamental problem: They can adopt unwanted biases from the data on which they're trained. In healthcare, this can lead to bad diagnoses and care recommendations.

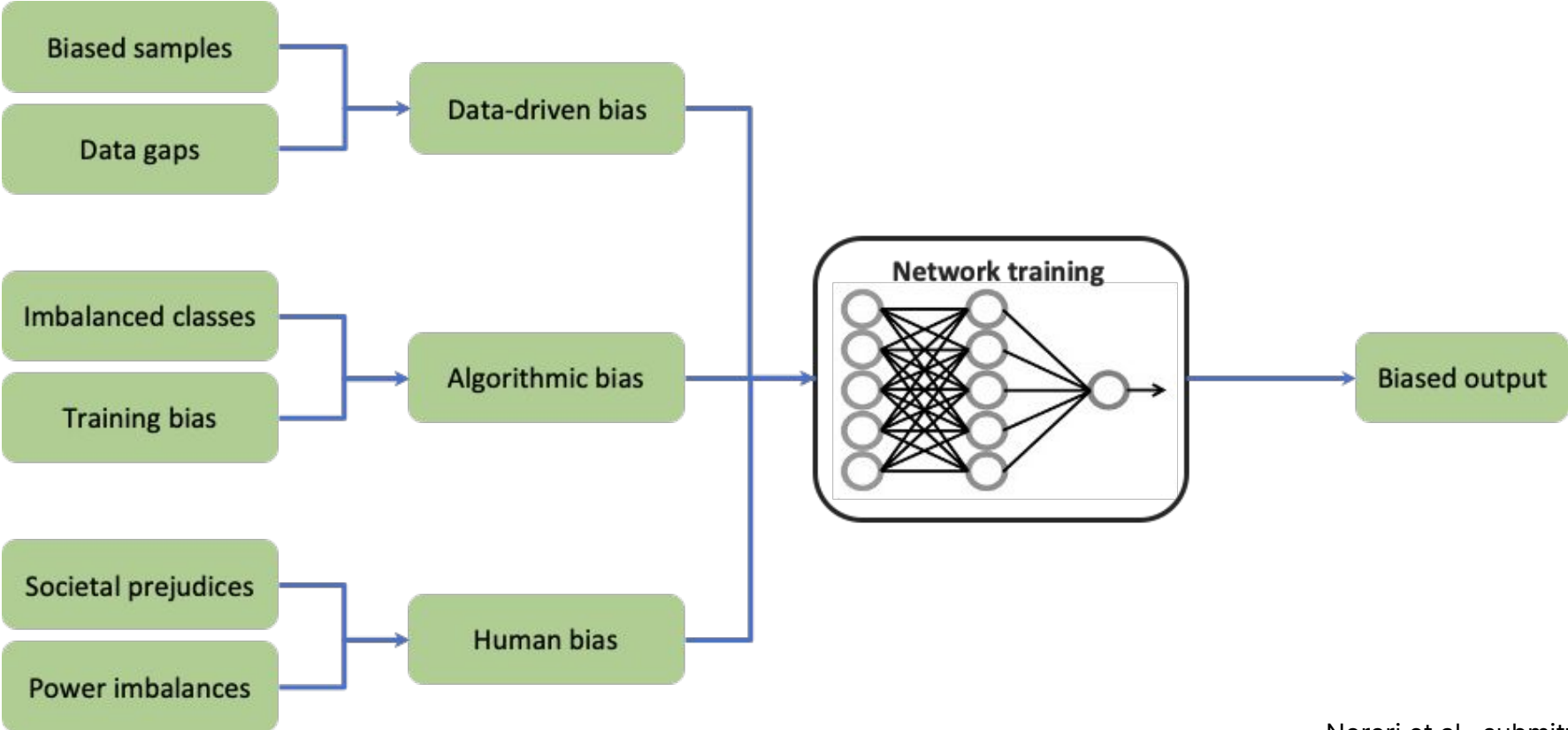
population



biased sample



Sources of bias



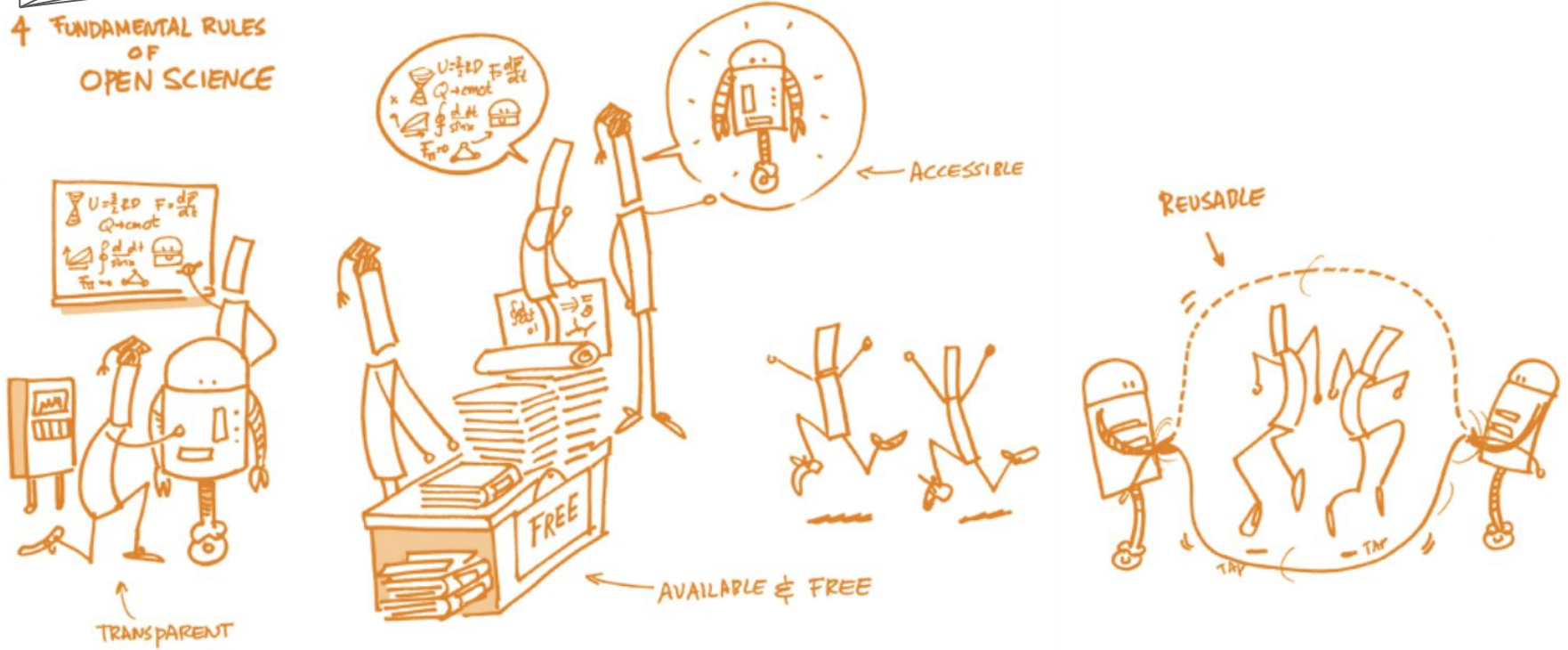
A call for open science

“Open Science is the practice of science in such a way that others can collaborate and contribute, where research data, lab notes and other research processes are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods”¹

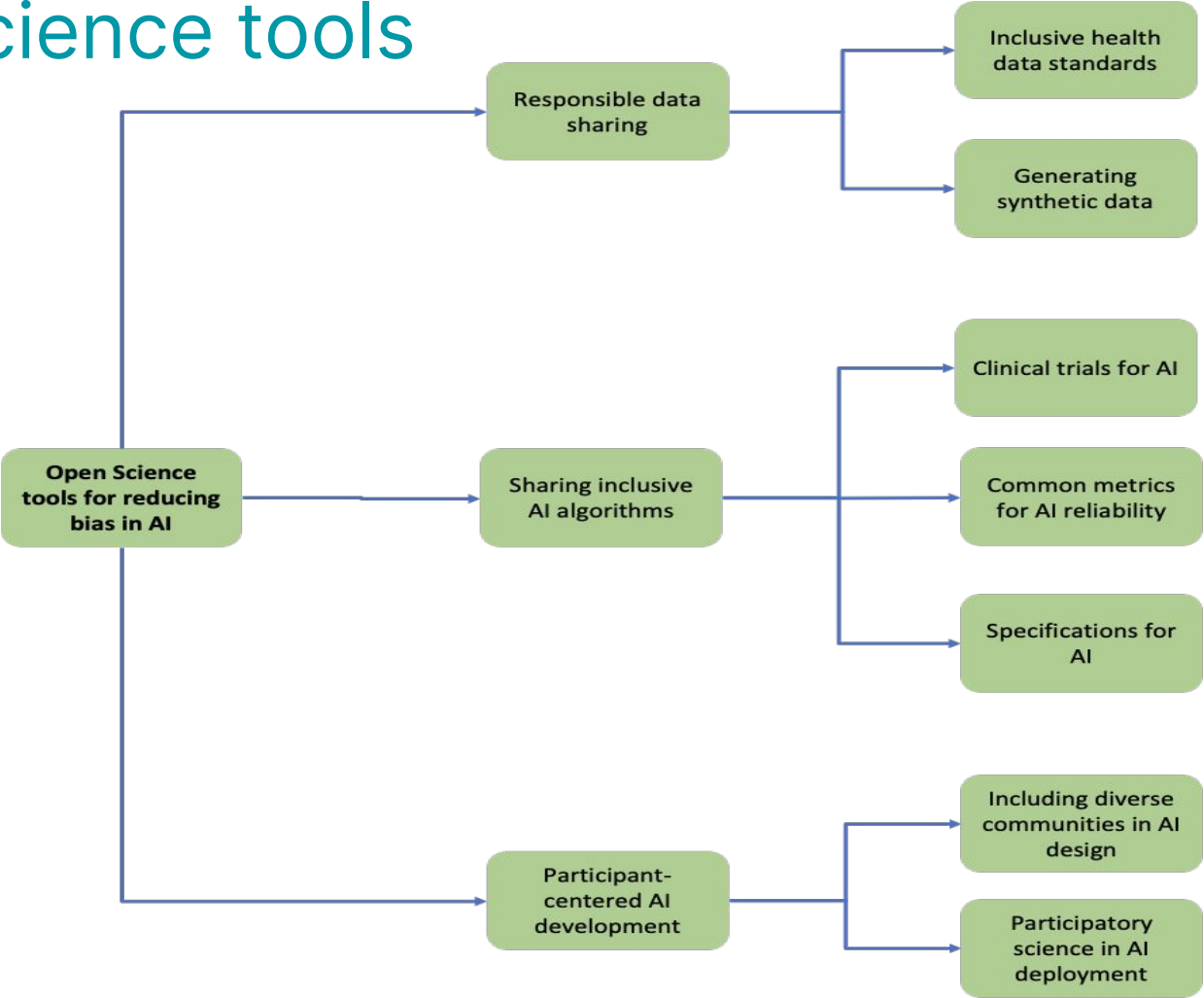
1. FOSTER (2018) *Open Science Training Handbook* . [Online]. Available at: <https://www.fosteropenscience.eu/content/open-science-training-handbook>

Accessibility, Availability, Transparency and Reusability

4 FUNDAMENTAL RULES OF OPEN SCIENCE



Open science tools



Conclusion

- Open science can be a strong ally to assist in moving towards fairness in AI for healthcare.
- Future research needs to focus on developing standards for AI in healthcare that enable transparency and data sharing, while at the same time preserve patients' privacy.

Thanks for listening!

Questions?

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