**AI for good? Platforms, ethics and public value**

Notes from a webinar organised by the Institute for Innovation and the Public Person (IIPP) at University College London**[[1]](#footnote-1)**

28.4.2022

**Relevance to healthcare**

The 4th Industrial Revolution, as proclaimed by the World Economic Forum, is the era when the use of certain existing and new technologies, such as digital systems including Artificial Intelligence (AI) , are embedded in societies and even in human bodies.

To manage sustainable services, for the development of algorithms to assist with optimisation of these services, and for research and development purposes, ICSs will routinely collect (longitudinal where available) data from all areas of health, social, voluntary and private care and biological markers. This data will be linked together locally, regionally (e.g. oneLondon database) and nationally into ‘big data’. Such ‘big data’ will be unique in its completeness and diversity and therefore invaluable in the development of health related AI.

Within the major current economic system, healthcare is an extremely important area for the development and exploitation of these technologies which can be used either for the pursuit of nations’ economic and geo-political power[[2]](#footnote-2) or, through global ‘solidarity’, for the achievement of UN ‘sustainable development goals’ including universal healthcare[[3]](#footnote-3), and work towards the reduction in global inequalities.

*This webinar is broadly about AI development as relevant to the UN’s goals, including those for health.[[4]](#footnote-4) There is a huge expectation that these powerful new technologies will be used to benefit us all and help to reduce inequalities. But there are also potential downsides from AI development that are not perhaps fully recognised, and the webinar discusses some of these and what we need to do if we are to avoid them.*

**Speakers**

**Professor Carissa Véliz** member of the Faculty of Philosophy and the Institute for Ethics in AI[[5]](#footnote-5) and Fellow at Hertford College, Oxford. (her recent book is ‘Privacy is Power: why and how you should take back control of your data’) (CV)

**Professor Ian Hogarth** IIPP visiting Professor and ‘angel investor’ who writes an annual blog ‘The state of AI’ (this is no ordinary blog the latest is 180 odd pages)[[6]](#footnote-6) (IH)

**Professor Gabriela Ramos** UNESCO Assistant Director-General for Social and Human Sciences[[7]](#footnote-7) overseeing the institution’s contributions to building inclusive societies, and who gave a keynote speech at UK AI 2022 at the Alan Turing Institute (GR)

**Main points**

**Inequalities; causes and effects (GR)**

* Nearly half the world’s population has no access to the Internet[[8]](#footnote-8)
* In UNESCO there are 193 countries involved in considerations about data and AI. However, during recent events involving COVID when there have been increasing inequalities, Oxfam reported an increase of $3.5 trillion in the development of data platforms in major countries[[9]](#footnote-9) but with only 5 countries primarily involved and only 200 firms holding all the patents for the commercial developments
* The increasing range of uses of AI is causing us to lose the richness of cultural and language diversity because as things stand these developments carry only the language and culture of the powerful
* One set of causes of inequality is bad regulatory and ethical frameworks. Capital continues to control, with private enterprise taking the lead in the regulation and accountability of algorithms. To counter this it is argued that we require Global regulations and Institutions, we need politicians that understand technologies, we need a rule of law, there should be a General Framework with certification for algorithms, there should be ‘ethical impact assessments’. The EU has passed its Digital Services Act[[10]](#footnote-10) which is ‘earnest but not thoughtful’: this is not enough. The US is currently not willing to talk about regulation although a digital act is rumoured.
* This huge lack of equity and inclusion also results in consequent biases in existing algorithms as they learn from non-diverse populations
* We need to reproduce something similar to the UNESCO Global bio ethics committees network[[11]](#footnote-11). If harm is caused then intellectual property rights should be lost.
* There is also a digital anthropology program at UNESCO[[12]](#footnote-12) focusing on the use of technologies and incentives and laws against harm. UNESCO needs to promote its recommendations[[13]](#footnote-13) as currently AI is harming the achievement of sustainable development goals

**Ethics of AI (CV)**

* How do we categorise big tech? It is no more complicated to regulate than, and similar to, railways, cars, food and drugs. We need inclusive ethics committees and we need peer review, possibly with high quality Randomised Control Trials, for all the algorithms that are important- this leaves the issue as to who decides which algorithms are important.
* There is a need to learn from medical ethics[[14]](#footnote-14) and to supervise algorithm development as we do drug development- see the US Food and Drug Administration (FDA)[[15]](#footnote-15) and similar national organisations[[16]](#footnote-16)
* We should not allow ‘business models’ of the development process in which ‘stealing’ becomes profitable; there should never be commodification of personal data as, on top of everything else, such poor regulation can erode democracy and reduce security[[17]](#footnote-17)
* Property rights do not protect people’s personal data – it is possible to expose the data of other people through your data e.g. genomics and shared genes[[18]](#footnote-18). We need more fundamental human rights
* ‘Knowledge equals power’, and there is an enormous data asymmetry when citizens are compared with the private corporations and government. Control over the regulatory approach is also power
* We have a business model in the Global Internet that allows private companies to breach privacy rights[[19]](#footnote-19)
* A huge issue is the source of funding for all the technology developments, and the major funders and profit makers of private ‘big tech’, such as Google (Alphabet), Amazon, Facebook (Meta), and Apple commonly referred to as Big Four or GAFA, are leading the way with the ethics of AI and its regulation: they are heavily lobbying governments, indeed they have achieved a degree of regulatory capture[[20]](#footnote-20)
* There are no ‘techno solutions’ to our political and ideological problems. Without fair and balanced governance the world will be so much worse off
* The existence of China has until now been used as an excuse not to regulate the growth of our data systems. More recently China has developed stricter regulations to protect their National security- every data hub is seen as a potential entry point for security breaches. Perhaps surprisingly for some, the regulations also state that ‘humans should retain “full power” of decision-making over AI with rights and safeguards in place to revoke systems at any time’ and they want to ensure… ‘the rights to withdraw from the interaction with AI at any time, and the rights to suspend the operation of AI systems at any time, and ensure that AI is always under meaningful human control’[[21]](#footnote-21)
* Meanwhile over 60 countries[[22]](#footnote-22) and even half of London’s councils[[23]](#footnote-23) have been importing surveillance equipment from China

**Societal harms (IH)**

The possible benefits of data sharing and AI are announced everywhere and in this webinar it was made clear that sustainable development goals can be inspirational for some tech companies e.g. AI being used to detoxify water for drinking.[[24]](#footnote-24) However….

* There have been some high-profile ‘bias in AI’ incidents such as in Washington State with the use of facial recognition software by police to identify suspects from photos. In a landmark ruling, because of the bias for misidentification against black and brown skinned people, the state court has decided that there is a need for an independent assessment by a regulator[[25]](#footnote-25) of any software in this area before it can be used
* An intentional harm is the deployment of AI techniques in the military. Techniques such as ‘reinforcement learning’ and ‘deep learning’[[26]](#footnote-26) developed to mimic human learning and brain micro architecture/physiology and used in ‘winning’ in complex games against humans seems pretty harmless. But their use in the recent Israeli drone swarm air attacks on Gaza, declared as ‘the first AI war’,[[27]](#footnote-27) brutally displays their military potential
* There are also possible unintentional harms from the rapid growth of ‘general intelligence’. The power of computers has been doubling since 2010 onwards and this represents a substantial risk[[28]](#footnote-28). It is estimated that by 2052 there will be a learning machine comparable to the human brain[[29]](#footnote-29). The concern is that computers will become so powerful that we will not know how to make them safe. Also, increasingly, laboratories working to engineer and understand more powerful malware are adopting ‘bio safety’ measures equivalent to those required with the development of pathological viruses. This is because of the severe risks the novel malware poses to IT dependent public services and National Security if it was to be ‘liberated’.
* Professor Hogarth believes that we should willingly use AI algorithms when they are shown, by appropriate high quality performance trials, to be better than humans in making decisions and observations. Also, that we need to use tax and procurement tools to incentivise companies towards the sustainable development goals.
* The webinar ended with his sobering statement: ‘Personally if it was my decision I would pause AI development for a year or two, or else we are likely to ‘blow ourselves up’ rather than benefit humanity through the too rapid development of general intelligence without the necessary safety measures’

1. Youtu.be/1CTPrjanPtU [↑](#footnote-ref-1)
2. <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020402/National_AI_Strategy_-_PDF_version.pdf> [↑](#footnote-ref-2)
3. <https://www.un.org/sustainabledevelopment/health/> [↑](#footnote-ref-3)
4. <https://www.un.org/sustainabledevelopment/health/#tab-3f22056b0e91266e8b2> [↑](#footnote-ref-4)
5. <https://www.oxford-aiethics.ox.ac.uk> [↑](#footnote-ref-5)
6. <https://www.stateof.ai> [↑](#footnote-ref-6)
7. <https://en.unesco.org/artificial-intelligence/ethics> [↑](#footnote-ref-7)
8. <https://www.un.org/press/en/2021/dsgsm1579.doc.htm> [↑](#footnote-ref-8)
9. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621149/bp-the-inequality-virus-250121-en.pdf> [↑](#footnote-ref-9)
10. <https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package> [↑](#footnote-ref-10)
11. <https://en.unesco.org/news/unesco-bioethics-network-redbioetica-makes-statement-universal-right-health-covid-19-context> [↑](#footnote-ref-11)
12. <https://www.unesco.org/en/articles/unesco-and-liiv-center-digital-anthropology-launch-global-partnership-advance-field> [↑](#footnote-ref-12)
13. [https://unesdoc.unesco.org/ark:/48223/pf0000380455](https://unesdoc.unesco.org/ark%3A/48223/pf0000380455) [↑](#footnote-ref-13)
14. <https://www.nature.com/articles/s41928-019-0294-2> (needs institutional access) [↑](#footnote-ref-14)
15. The Food and Drug Administration is responsible for protecting the public health by ensuring the safety, efficacy, and security of human and veterinary drugs, biological products, and medical devices; and by ensuring the safety of the USA food supply, cosmetics, and products that emit radiation [↑](#footnote-ref-15)
16. <https://hbr.org/2021/06/we-should-test-ai-the-way-the-fda-tests-medicines> [↑](#footnote-ref-16)
17. <https://academic.oup.com/idpl/advance-article/doi/10.1093/idpl/ipac007/6545822> [↑](#footnote-ref-17)
18. Due to the similarity of relatives’ genomic records, even if someone’s genomic record has never been shared or even generated, their genotypes and predispositions to certain diseases can be inferred to a certain degree from their relatives’ shared genotypes. Recently, more powerful reconstruction attacks have been proposed to infer individuals’ genotypes and phenotypes from their relatives’ genotypes and phenotypes.

In April 2018, the US Federal Bureau of Investigation (FBI) used genomic data from a cold case to arrest a suspected serial murderer known as the Golden State Killer. In this case, law enforcement officers used crime-scene DNA from the then-unidentified suspect and uploaded the sequence data to GEDmatch, a publicly accessible genomic database. Through a process known as long-range familial search, whereby relatives can be identified based on shared blocks of DNA sequence, they found the suspect’s third cousin. From this starting point in the suspect’s wider family, law enforcement officers were then able to make further enquiries, reconstruct a family tree and subsequently trace the suspect. Although this case demonstrated the potential of the forensic use of familial search, now known as forensic or investigative genetic genealogy (FGG/IGG), it sparked privacy concerns. See <https://www.nature.com/articles/s41576-022-00455-y#Glos6> [↑](#footnote-ref-18)
19. <https://www.securityweek.com/surveillance-business-model-internet-bruce-schneier> [↑](#footnote-ref-19)
20. <https://reader.elsevier.com/reader/sd/pii/S0016328721001695?token=B519BB3CA4AD97EC814E0818CC556D815E71F2D706F0BD16D09AE976BD06167A9DCF25205885B8284A97DF0252DA0D5B&originRegion=eu-west-1&originCreation=20220501130204> [↑](#footnote-ref-20)
21. <https://www.globalgovernmentforum.com/china-unveils-ai-ethics-code/> [↑](#footnote-ref-21)
22. <https://www.cnbc.com/2019/10/08/china-is-exporting-surveillance-tech-like-facial-recognition-globally.html> [↑](#footnote-ref-22)
23. <https://www.reuters.com/article/us-britain-tech-china-idUSKBN2AI0QJ> [↑](#footnote-ref-23)
24. <https://engineering.cmu.edu/news-events/news/2021/10/20-ai-desalination.html> [↑](#footnote-ref-24)
25. <https://www.reuters.com/article/us-washington-tech-idUSKBN21I3AS> [↑](#footnote-ref-25)
26. <https://deepsense.ai/what-is-reinforcement-learning-the-complete-guide/> [↑](#footnote-ref-26)
27. <https://www.forbes.com/sites/davidhambling/2021/07/21/israels-combat-proven-drone-swarm-is-more-than-just-a-drone-swarm/?sh=48ed91091425> [↑](#footnote-ref-27)
28. <http://www.fhi.ox.ac.uk/wp-content/uploads/GovAI-Agenda.pdf> [↑](#footnote-ref-28)
29. <https://www.stateof.ai> 2021 page 155 [↑](#footnote-ref-29)