Newsletter #14 – June 2023
–Data Ethics–

As **applications of artificial intelligence** in both **business** and **society** become more **ambitious**, digital ethics has become a growing concern for both individuals and governments.

What is the specificity of digital ethics, and how do these considerations differ from those of ethics in general?

These concerns are more a question of degree than of this kind, for each new generation of information technology introduces increasingly salient challenges for both business and humanity. In this brief introduction, four key questions can help frame the current debate.

Can we trust AI? Coming out of the Second World War, **Norbert Wiener's** work on cybernetics focused on the question of to what extent humanity can trust automation. His writing in The Human Use of Human Beings expressed growing concerns about the dehumanization and subordination of our species. He outlined in particular the dangers of trusting decisions to computer programs that cannot reason abstractly, and by consequence are highly unlikely to understand the nature of human values.

Are the **ethics of AI** more **challenging** than before? Thirty years later **Walter Maner**, a medical professor and researcher, coined the term "computer ethics to describe the ethical problems aggravated, transformed or created by computer technology." In focusing on the specificity of the ethical decisions that arise from the use of technology, he argued that computer applications were fundamentally different from previous technological innovations in that their design, complexity, and malleability allowed them to be applied in a countless number of domains.

Can algorithms be trained to make ethical choices? In his seminal article forty years ago, **"What Is Computer Ethics?" James Moor** summed up his thoughts concerning the ethical footprint of technology. **He suggested that at the minimum, computers were ethical impact agents for programs and algorithms that have challenged human nature whether this was intended or not.** He envisioned a world of full ethical agents in which machines would be capable of elucidating ethical choices compatible with humanity.

If artificial intelligence is all about context, how does context influence our views of ethics? **Krystyna Górniak-Kocikowska's** argued that ethical considerations have in the past reflected local experiences, histories, and customs, which in turn explains why ethical positions often vary from one culture to another. She suggested that computer ethics are not bound by local constraints, i.e., computer logic constitutes a truly universal view of how humans and machines can interact.

The discussion of data ethics reviewed in this month's newsletter takes each of these arguments one step further. The ethical challenges do not arise simply from the quality and the relevance of the data itself, but from how human beings use data to perceive, predict, and evaluate courses of action. Each new generation of AI enlarges the objectives and application areas of both human and machine intelligence, and in doing so modifies the context in which ethical choices arise.

We remind you that AI Muse™ Grenoble discussion group.

In line with the subject of this month's newsletter, I'd like to introduce you to the GNÔSIS Grenoble #LinkedIn group.
This group aims to be able to discuss on different technological topics such as #ArtificialIntelligence, #ethics, #philosophy, #aiethics, #responsibleai, #DigitalEthics, #DigitalFairness, #StrategicIntelligence.

We would like to **remind** you that our **website** is available at the following address: Muse™: Listen to your muse.

If you would like to continue the discussion, feel free to contact Lee Schlenker and Alexandre MARTIN.

Don't hesitate to **leave us a comment**, to **share** our newsletter.

Enjoy reading!

- **Coded Bias documentary**

This month, the editors of Muse are highlighting a documentary about the existence of **racist** and **misogynist bias**. The documentary, *Coded Bias*, was made in 2020 by Shalini Kantayya. *Coded Bias* **won 6 awards**, including the *Grand Reportage World Organisation Against Torture* (OMCT) Award in 2021 and the *Grand Jury Prize for Transparency* in 2021. The documentary *Coded Bias* was released in 2020, but unfortunately it is still relevant today.

Coded Bias highlights the presence of **bias** in the **algorithms** of applications (such as facial recognition) that are used in different areas of our daily lives, such as healthcare, the justice system, the workplace (human resources), etc. Coded Bias also highlights the need to take into account the needs of different groups of people.

But Coded Bias also highlights another **dark side** of algorithms, the invisible part of how algorithms work, the famous **black boxes**.

To help us understand the impact and consequences of these biases, the director calls on renowned engineers such as Joy Buolamwini (**Algorithm Justice League**—AJL), Cathy O'Neil (O'Neil Risk Consulting & Algorithmic Auditing—ORCAA), Inioluwa Deborah Raji, Timnit Gebru (Digital Artificial Intelligence Research Institute—DAIR), Silkie Carlo … and other public figures such as Michelle Obhama.

We strongly recommend that you watch this documentary.

Link to the official documentary website: https://www.codedbias.com/
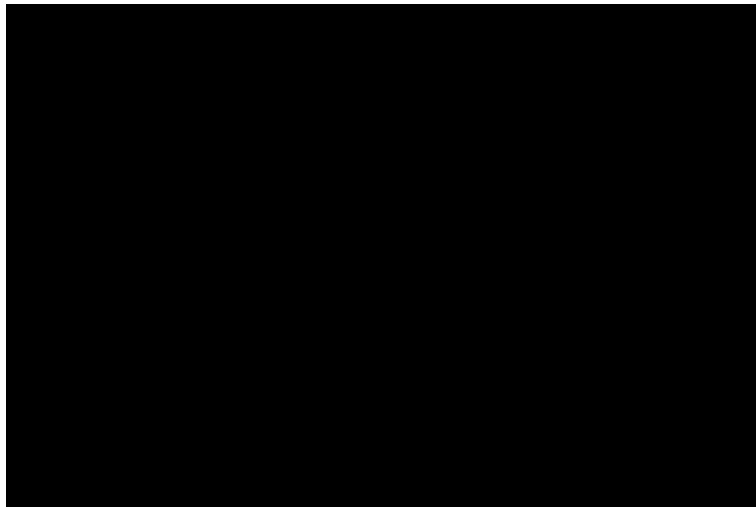
Trailer for the documentary "Code Bias

- **Big data ethics**—Social Science Research Network (**SSRN**)

The publication was **first released** on **14 May 2014**. However, 9 years later, this publication is still relevant today.

While the years have passed, the rise of big data (and data lakes) has only increased with time. Organizations are demanding more and more data, and collecting just as much.

In this publication, written by Neil M. Richards **and** Jonathan King, the authors explain that companies handling (collecting and reselling) big data need to take into account the power that this data gives them.

This power attributed to companies requires the development of a data ethic in order to avoid any drift. Unfortunately, in certain countries such as China (surveillance cameras, social credit, etc.), political institutions have created "digital" repression.

> "*Where there is great power there is great responsibility*."
> Winston Churchill

In addition to exploring the origins and growth of big data, the authors develop a new ethic, a "Big Data Ethics."

To achieve this, **Neil M. Richards and Jonathan King** set out a set of **4 interdependent principles**. The 4 principles identified:
- Privacy;
- Confidentiality;
- Transparency;
- Identity.

The authors also propose how these **4 principles** can be integrated. To achieve this, the authors advocate implementation, **mainly through legislation**.

- **Decision-making Can Be Improved Through Observational Learning—ScienceDirect**

Impaired judgment is not the prerogative of algorithms, far from it. Impaired judgment is also a characteristic of humans, whether in the personal sphere (family, friends, studies, etc.) or in the professional sphere (all sectors taken together). However, the impact of these biases is uneven, depending on the individuals or organizations involved.

In this study, researchers Haewon Yoon, Irene Scopelliti and Carey K. Morewedge investigate the possibility of improving the bias reduction learning strategy established by Fischhoff (Fischhoff, 1982, Morewedge et al., 2015, Nisbett et al., 1987).

For information, Fischhoff's bias reduction learning strategy has 4 basic strategies, which are:
- Warn of the possibility of bias;
- Describe the direction in which bias can affect judgment;
- Provide feedback on judgments and decisions;
- Provide training with in-depth coaching.
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To improve on Fischhoff's strategy, the researchers decided to implement a fifth strategy using observational learning.

Observational learning can be seen as a form of social learning. It consists of a group of individuals acquiring behaviors, conventions and skills. To be successful, the learning group needs to observe and model the behavior of other agents.

- **The ethics of data science**—Medium/**Towards Data Science**

In this contribution to Medium, Lee Schlenker suggests that the practice of data science without ethical considerations is a game stopper—whether it be the protection of personally identifiable data, implicit bias in automated decision-making, the illusion of free choice in psychographics, the social impacts of automation, or the apparent divorce of truth and trust in virtual communication.

- **Profit or ethics? The false data dilemma**—International Institute for Management Development (**IMD**)

The article, written by Amit M. Joshi, highlights the importance of ethics in business, particularly when it comes to data analytics, artificial intelligence (AI) and machine learning.

However, when it comes to the exponential adoption of AI and analytics, businesses seem less concerned about the ethical implications. The accessibility and value of consumer data have led to a gold rush mentality, with businesses focusing more on data exploitation than ethical implications.

The author argues that addressing ethical concerns in technology is essential for companies to differentiate and thrive in a post-pandemic world.

Amit M. Joshi concludes by arguing that companies need to act now to embed an ethical approach to data analytics, AI and machine learning. He suggests **three steps**:
- Define clear boundaries of what will never be done;
- Empower decision makers at all levels to set ethical boundaries;
- Appoint an ethics officer to manage ethical challenges and take responsibility when a problem arises.

- **Artificial intelligence ethics taxonomy—Robotic Process Automation (RPA) as a business case**—Social Science Research Network (**SSRN**)

In this article published in the European Scientific Journal, Special Issue "Artificial Intelligence & Ethics," 2021, author Dirk Otto Beerbaum considers the ethical issues raised by process automation.

The use of Robotic Process Automation (**RPA**) in companies has made it possible to automate repetitive tasks. The use of RPA guarantees scalability and continuous operation. Above all, the use of RPA has become an important part of the economy.

To work, RPA needs to connect with an application to interact with data, perform calculations, communicate with other digital systems, or perform other tasks. For example, it can perform database queries, keep records or process transactions. RPAs are being used in a wide range of sectors, including accounting, finance, human resources, healthcare and logistics.

However, the use of RPA is not without consequences, and its use requires developers to be more transparent about the results of their algorithms. As such, developers will also need to become more involved in ethical issues.

To achieve this, the author urges developers to integrate a technology that enables greater transparency. This technology is called **XBRL** (eXtensible Business Reporting Language).

- **How to promote ethical business when you have biased data**—TechTalks

What does your company need to do to promote ethical business? This is the question that data scientist **Micaela Kaplan** tries to answer.

For Micaela Kaplan, the basic recommendation is to recognize that all data models have natural biases because the data comes from the real world.

The next step is to identify and analyze the elements that create bias in order to reduce their impact as much as possible.

Finally, Kaplan recommends challenging data models rather than changing them.

- **To predict and explain. How prediction improves our understanding of models: an application to the study of teacher bias**—SocArXiv

In this publication, the author, Mark D. Verhagen, explains that a predictive perspective is much more relevant to empirical work.

According to the author, a predictive perspective offers substantial advantages that can improve model understanding.

To achieve this, the author illustrates his points by using the bias of teacher evaluation (decision support) in higher education as a model for analysis.

Under certain conditions, this algorithmic decision support can lead to biased results with harmful consequences for students.

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