

AI Regulation through an Intergenerational Lens



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Introduction

Artificial intelligence (AI) intersects with society across age groups, geographies and generations. Current debates on AI and AI ethics focus primarily on AI's impacts on today's populations (e.g., the fairness of AI used in predictive technologies used in employment, housing, finance, education and quality of life decisions). In some cases, AI [excludes many elderly people](#) and it can often obscure and neglect the agency and rights of younger people who might be [targeted and negatively impacted](#) by algorithmic and AI profiling. Further, data infrastructures of AI create incredible power differentials and disparities, which include uneven control and influence over people's data, issues of personal data and surveillance, data and rights, data and accountability and data inheritance.

Many people who engage with various types of AI lack context for critical assessment of their technological world and these issues. While this briefing paper does not cover each of these concerns exhaustively, we believe it is important to consider these issues and their long-term consequences. A key question that drove our work was: How are the decisions of today on AI regulation going to impact future generations, and how can this be translated into policy that protects various publics, especially those vulnerable to abuse and further social, economic and political disenfranchisement? In grappling with this question, we draw on Indigenous wisdom, which teaches us to use an intergenerational lens in recognizing how our past ideologies are encoded in present systems that will have an impact on future societies.

This paper entails the collective thinking and exploration of a diverse group of individuals across three continents and multiple disciplines, brought together through the World Economic Forum's Global Future Council on AI for Humanity. As part of this effort, our working group chose to examine AI regulation in the context of fairness from an intergenerational perspective. To this end, we brought together a panel of dynamic thinkers who are grappling with AI fairness in their individual scholarship and practice to collectively explore intergenerational implications of AI. The following sections outline key findings from our panel discussion and our exploration of how these lessons might inform approaches to AI regulation.

Panel on Intergenerational Justice, Sustainability and AI

On 17 June 2021 we put together a panel discussion as part of University of Bonn's Sustainable AI Conference, organized by Aimee van Wynsberghe and Larissa Bolte. The purpose of this panel was to explore the nature, significance and depth of intergenerational challenges related to AI and grapple with how

we might tackle those issues. Panellists included [Sara Cole Stratton](#), [Gry Hasselbalch](#), [Lorena Jaume-Palasi](#) and [Larissa Bolte](#), and the panel was moderated by [Safiya Noble](#). We were intentional about selecting panellists spanning at least two generations and whose work had varying intersections with AI and fairness. The [full-length video of this panel](#), as well as a [transcript of the panel](#), are available to anyone interested in accessing those resources. In this paper we offer a summary of wisdom shared by panellists to inform regulatory action we might consider for intergenerational justice in connection with the development and applications of AI systems in the public sphere.

Discussions about the future of AI are often shaped by two dominant narratives. In the techno-solutionist version, largely defined by companies and academia, AI can help rid the world of its most pressing social and environmental challenges. In the Anthropocene-focused narrative, often documented by journalists, social scientists and civil society organizations, humans have set out on a path of irreparable ecological destruction and AI perpetuates that destruction. The question is, who controls the narratives on AI? Bolte encourages us to reclaim these stories so we can be a part of shaping them in more complex and nuanced ways.

While AI may have enormous potential for social good if regulated and used carefully, it also has the potential for very substantial, long-lasting harms that need to be attended to urgently. Stratton and Jaume-Palasi remind us that our global social structures are heavily influenced by Eurocentric ideologies from our colonial histories. Normative values stemming from this past were previously inscribed in analogue systems and are now coded in digital frameworks. The potential for harm is immense in our border-free digital world, which can impact exponentially greater numbers of people compared to the age of analogue tools. Noble notes that "...We are born into these systems, but it is our responsibility to...change those systems and to take responsibility for enacting more equitable futures..."

Hasselbalch compels us to also interrogate the power dynamics baked into our current social-technical infrastructures. At this time, a very narrow demographic of the population holds decision-making power in the technology sector. We see few forums or influence being afforded to civil society and rights-based organizations working to protect the public from unfair developments and applications of AI. This exacerbates imbalances in power, which facilitates the continuation of exploitative conditions and other injustices in the world.

A serious issue we need to tackle regarding AI's intergenerational implications is data pollution, which not only impacts our natural environment but also infiltrates our social and personal spheres. Big data systems amass significant carbon footprints and also attach individuals to cumulative digital footprints. These digital constructs and their associated social and environmental

costs last longer than you might assume and take longer than expected to delete or mitigate. Coupled with power asymmetry in technology development, the big data landscape can lead to the further marginalization of populations based on racial and intersectional identities (e.g., through surveillance technologies) and can have devastating consequences for future generations as well. Noble summarizes this point: "...The Silicon Valleys of the world spend hundreds of millions of dollars to go into the woods and imagine a future, while the rest of us grapple with the consequences of those imaginaries." We need a more inclusive and relational approach to shaping our collective futures and must contend with the possibility that AI might not be the best tool for this type of inclusive governance.

Māori wisdom teaches us that we are on an intergenerational continuum where our past, present and futures are interconnected and interdependent. As such, we bear responsibilities as ancestors as well as descendants and must pay close attention to our relationships with people, the planet and our purpose. Efficiency has been our guiding principle, especially with regard to technology, and this has led to the creation of obsolete solutions. Our haste, competitiveness, commodification and quick pace are harming us. Applying an intergenerational lens to tackling the big and complex problems of today requires a shift to resilient measures rather than a concentration on efficient solutions. More specifically, in terms of AI regulation, we have to understand that algorithms do not contextualize data and so we see many disparate systems at work at once. However, we cannot regulate each individual algorithm or system, we must look at the bigger picture and think through dynamic approaches that are more resilient to future technological changes.

We each have one simple and essential right – the right to belong, to a place and a people. Along with this right is a responsibility to our collective peoples and shared places. Let us take action with this in mind and heed the wisdom of a [Māori Elder](#) who said: "Recent science and technology may claim to have the know-how, but we have the know-why. Without the know-why, that know-how is going nowhere fast. The know-why keeps us in the core, gives us the vision and is our arrow forward."

Considerations for regulation

In recent years there has been a surge of charters, declarations and manifestos laying out several principles that should guide the design and implementation of AI applications. Among other principles, such as privacy, transparency, security and responsibility, fairness is a constant presence in such lists. A [study](#) (by Fjeld and Nagy, 2020) reviewing more than 30 documents covering AI principles revealed that the themes of fairness and non-discrimination are mentioned in all of them.

As principles turn into practices, countries have resorted to the general principles of AI to design their own AI national strategies. Even though AI national strategies share a common language, states have different priorities, approaches and long-term vision on how AI will produce relevant economic, political and cultural changes. The promises and challenges already laid out in national strategies offer a unique opportunity to question whether there is a common vision of a future in which AI will be an integral part of everyone's lives.

In addition to national strategies, states have also begun to discuss passing regulations that could address the most pressing

issues of developing and deploying AI applications. This is when the debate over how to regulate AI applications becomes crucial. There are lessons that can be drawn from the experience already accumulated in the regulation of other technological applications. How do we identify the stakeholders in a regulatory issue and make sure that different and opposing voices are heard? How do we measure the impacts of a regulation and create a process that reassesses the fulfilment of its outcomes? And more importantly, how do we envision a future increasingly permeated by AI applications, fully understanding that the regulation approved today determines the conditions under which such an imagined future may or may not materialize?

Here are key considerations that regulators (and policy-makers) should consider when addressing issues concerning the regulation of AI through the lenses of fairness and intergenerational thinking:

1. AI fairness demands a global agenda
The somewhat general consensus on the need for AI regulation to address fairness concerns eclipses the fact that there is still little coordination among stakeholders. There is a growing need for leadership to foster a global dialogue on AI that could turn a scenario of international competition into one of international cooperation. As AI is seen by states as a key factor to unlock a future of economic prosperity, it is paramount to ensure that fairness is enshrined in regulatory initiatives worldwide. Measures implemented at the national level can produce impacts across the globe, and the United States and Europe typically have a disproportionate influence globally in terms of technology and associated regulatory policies. For example, rules of data ownership in regulation rarely account for non-Western conceptions of ownership and commodity. If fairness is a priority, we must harness wisdom from across the globe, paying close attention to equity in representation and leadership.
2. Regulations should be proactive in shaping innovations and involve multistakeholder engagement by design
Regulatory initiatives can exacerbate power imbalances if governments do not pay extra attention to the very structures of decision-making processes. Online public consultations have become popular in the past decade, but what are the lessons learned from them? How can voices that are not active in online consultations be brought in? How are different opinions taken into account and what type of feedback is given to the participants? How can we design processes that are friendly to an audience that might not be familiar with the proposed regulation in the first place, especially considering all the technicalities of AI? Which constituency groups does the regulation benefit? Does the regulation help consumers understand the benefits and harms of the AI application with which they interact daily? These are key questions to consider in mitigating power imbalances in AI development and applications through regulation. Multistakeholder input can be gleaned from several sources, including public documents, reports, research, other media, as well as community-focused organizations.
3. AI regulation should be technology-agnostic
In order to last and to produce the desired effects, AI regulation should go through a scoping exercise. An overly broad regulation can have unintended consequences in areas that go beyond the original scope. A narrowly focused regulation might lose sight of structural issues and fail to

deliver the desired impact. As AI applications are quickly becoming omnipresent, it is important to calibrate which kind of regulatory action is needed and which type of AI application should be covered. Regulation created with an AI-specific application in mind might at the same time fail to grasp the existence of a larger technology ecosystem and hinder innovation, locking future applications into the frame of what exists today.

4. In order to strike the right balance, AI regulation should have a robust impact assessment and review processes. Regulators should take into account that initiatives focusing on technologies that are in a permanent state of transformation, such as AI, require a robust process for evaluating ex ante the impacts of a proposed regulation, as well as a regular review mechanism that allows for corrections. Such processes should question which individual and collective rights are impacted by the regulation, which types of obligations it creates and which effects are felt in different areas.
5. AI regulation should be foresight and resilience-centred, addressing intergenerational concerns. Is the technology designed to accommodate the needs of future generations, population, size, computational infrastructure, demographics, etc.? Regulation is often focused on trade-offs or cost-benefit analysis in the short/medium term. Regulators focusing on AI fairness should always question whether the benefits that could spring out of the regulatory initiative are limited to present-day issues or can also help future generations. This point is exemplified in recent European Union draft regulation on AI that discusses the lack of attention to intergenerational and sustainability considerations. Ultimately, we want to ensure that AI and other possible technological innovations contribute to the common good and help us realize just and equitable global futures.

In the quest for regulations that increasingly account for AI fairness, we should keep in scope laws aiming to protect individual or collective rights but also policies that promote economic development through the use of AI. Finding the right equilibrium between these two goals will help us, as a global society, reap the greatest benefits of the AI revolution. In this process, we should never underestimate the unintended consequences for future generations.

Additional resources for regulators

- [AI Fairness Global Library](#)
- California transparency laws on AI and decision making
- Extensive regulations on data protection (GDPR, CCPA)
- [New Zealand MINISTRY OF BUSINESS, INNOVATION AND EMPLOYMENT AI Playbook](#)
- [Complete AI Playbook](#) (World Economic Forum initiative)
- [Principled Artificial Intelligence](#)
- [Artificial intelligence: From ethics to policy](#)
- [Four Principles for Integrating AI & Good Governance](#) – Oxford Commission on AI and Good Governance

- [“This is bigger than just Timnit”: How Google tried to silence a critic and ignited a movement](#)
- [Regulating AI in the era of big tech](#)
- [The Privatization of Regulation in the World Economy](#)
- [Sustainable AI: AI for sustainability and the sustainability of AI](#)

Conclusion

We frame regulation as a tool that protects citizens and members of communities, consumers and the broader public interest from harms. This is akin to the [OECD's definition of social regulations](#) that “protect public interests such as health, safety, the environment and social cohesion”. To this end, fairness was a key concept we engaged as we explored how to navigate it in relation to competing social values across a variety of cultural contexts. This report attempts to strike a balance between individual and collective rights, and highlights the rights of people, spanning multiple generations, over the purely objective business and governance issues facing companies and states.

Our working group prioritized four key dimensions of fairness in AI policy that regulators should consider when formulating policy:

- AI is often applied in ways that create unfair outcomes (technical implementations that are harmful)
- AI may calculate fair decisions locally (at micro level) but is biased at the macro level; consideration must be given to individual vs societal impacts
- AI is rife with environmental sustainability issues
- AI may be fair at both the micro and macro level, but people in power can misuse AI technologies to bring about unfair outcomes

We sought to inform long-term views and perspectives on the regulation of AI that provides decision makers with a guide to reflect on the intergenerational, long-term implications of these systems. More broadly, we encourage approaches to regulation that take a long view, across generations, on the impact of AI on communities and the environment.

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