The Future of Work Is Here

Toward a Comprehensive Approach to Artificial Intelligence and Labour

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Abstract

This commentary traces contemporary discourses on the relationship between artificial intelligence and labour and explains why these principles must be comprehensive in their approach to labour and AI. First, the commentary asserts that ethical frameworks in AI alone are not enough to guarantee workers’ rights since they lack enforcement mechanisms and the representation of different stakeholders. Secondly, it argues that current discussions on AI and labour focus on the deployment of these technologies in the workplace but ignore the essential role of human labour in their development, particularly in the different cases of outsourced labour around the world. Finally, the commentary recommends using existing human rights frameworks for working conditions to provide more comprehensive ethical principles and regulations. The commentary concludes by arguing that the central question regarding the future of work should not be whether intelligent machines will replace humans, but who will own these systems and have a say in their development and operation.

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Introduction

In recent years, government and policy organizations, private companies, and research institutions have explored the implications of artificial intelligence systems in society. The applications of AI in labour contexts have attracted particular interest since it remains unclear how AI will impact automation and existing working conditions. For a while, several publications that deal with the ethics of artificial intelligence in social contexts have covered some of the current concerns regarding this shift. These discussions are important because of the influence these technological developments have on society, and may inform “our views about values and priorities, good behaviour, and what sort of innovation is sustainable but socially preferable” (Floridi et al. 2018).

Canadian institutions have published frameworks that address the ethics of artificial intelligence, such as the “Toronto Declaration” (Bacciareli et al. 2018) and the “Déclaration de Montréal” (Dilhac, Abrassart, and Voarino 2018). At the same time, representatives from the country have participated in the “Artificial Intelligence in Society” report by the OCDE (2019) and UNI’s “Top 10 Principles for Ethical Artificial Intelligence” (2017). The Canadian Government also released a “Pan-Canadian Artificial Intelligence Strategy” through the Canadian Institute for Advanced Research (Barron et al. 2019), one of the twenty-eight national strategies on artificial intelligence coming from governments in Latin America, North America, Europe, the Middle East, and South-East Asia (Kung 2020). These documents converge in many regards, notably the idea that AI should serve the public good, especially around the areas of privacy, accountability, safety and security, transparency and explainability, fairness and non-discrimination, the human
control of technology, the responsibility of professionals, and the promotion of human values (Fjeld et al. 2020; Millar et al. 2018).

While there is convergence concerning these broad themes, there is no unanimity on the critical ethical AI principles. Furthermore, there is a lack of representation from areas such as Africa and parts of Latin America and Asia, and the interpretation of these principles, their importance, their implementation, and the involvement of different stakeholders generate disagreements (Jobin, Ienca, and Vayena 2019). Ethics are fundamental to understanding the implications of technological development and its implementation, and to what extent it can serve workers. However, while ethics are a cornerstone in achieving positive outcomes, their lack of enforcement mechanisms makes their implementation challenging. Thus, governance mechanisms that regroup different stakeholders, including non-governmental organizations, industry, and governments, should complement ethical frameworks (Abbott and Snidal 2009: 52). Moreover, governments should not delegate their responsibilities to industry; the regulation of AI systems requires effective policies (Calo 2017).

However, ethics, governance, and policy require a comprehensive view of labour to develop a framework that addresses its connection with artificial intelligence. Most of the declarations, reports, and government-led strategies focus exclusively on the deployment or applications of artificial intelligence in the workplace when considering the relationship between these technologies and human labour. However, none of these ethical principles addresses the forms of labour required to develop and maintain artificial intelligence systems. Besides, their “techno-centric” approach to AI regards human labour only in quantitative terms, ignoring the quality of jobs, and seeing artificial
intelligence mostly as innovative, inevitable, and a sign of progress, while ignoring the problems that its development and deployment generate for workers (De Stefano 2020). This commentary will discuss the implications of both instances in which AI affects human labour and becomes influenced by it since a comprehensive understanding of both is necessary for a discussion on the implications of AI for the future of work.

Current Concerns with AI and Labour

The OECD’s “Artificial Intelligence in Society” report argues that “AI is expected to complement humans in some tasks, replace them in others and generate new types of work” (2019). Setting aside any uncertain future developments in technology, the contemporary landscape of narrow AI systems suggests that, while these technologies have incredible calculative potential and applications in a wide range of domains, they are nonetheless incapable of judgement and far from becoming “artificial general intelligence” (Smith 2019).

For this reason, the relationship between artificial intelligence and human agency remains fundamental at all levels. As a result, human labour remains essential in all stages of AI development and deployment; “development” here refers to the processes of creating, sustaining, and maintaining AI systems, and “deployment” to all applications of AI in the many instances of human labour. In many cases, such as in Amazon warehouses (Delfanti 2019) or online gig work (Woodcock and Graham 2020), these two instances happen simultaneously, as workers support AI development while being subject to its applications.
AI Deployment

The aforementioned ethical principles and strategies for AI development are concerned about the danger of human labour being replaced by AI systems due to the potential increase in the number of automated tasks (CIFAR 2020; Dutton, Barron, and Boskovic 2017; Frey and Osbourne 2013; Johal and Thirgood 2016). Benjamin Shestakofsky summarizes recent developments in the scientific literature on contemporary automation by distinguishing between continuity and discontinuity theories (2017). Continuity theories predict a large-scale automation process that threatens to replace human workers, in line with many principles and declarations on AI. In contrast, discontinuity theories predict workers’ displacement and qualitative changes in the workplace due to the economic expansion of AI.

Most explicit mentions of AI and labour in the ethical frameworks and national strategies focus on mitigating the impact of automation following discontinuity predictions. However, researchers such as David Autor argue that, while automation threatens to replace human action over specific tasks, it does not imply that AI will replace jobs entirely; in fact, automation may expand the economic sectors it touches upon and, in turn, create more jobs (2015). Antonio Casilli similarly refers to the “persistence of work” despite consistent waves of automation in history since the industrial revolution (2019: 44). In the contemporary case, Casilli argues that the risk of particular tasks becoming automated does not mean that the same will happen with entire jobs (Casilli 2019), as these will become transformed, instead of replaced.

There are several examples of how AI is actively transforming labour. Re-
cent studies on the impact of AI deployment in traditional workplaces raise several concerns that are often explored in ethical discussions of AI systems. One of the most commonly voiced concerns centres on the discrimination fomented by hiring algorithms, since AI creates closed systems that lack external reviewing processes, target specific populations, and replicate the criteria of those accepted when looking for new participants (Ajunwa and Greene 2019). As a result, individuals from backgrounds and characteristics that do not correspond to “optimal” variables, notably in the case of social minorities, become excluded by the hiring system even if they are qualified for the jobs (Ibid.).

One of the biggest concerns regarding the deployment of artificial intelligence in the workplace is the use of algorithmic management and its implications for workers’ agency and privacy (Adams-Prassl 2020). Studies on the application of artificial intelligence in the workplace, such as in productivity apps and wellness programs (Ajunwa, Crawford, and Schultz 2017), online freelancing (Wood, Lehdonvirta, and Graham 2018), and the gig economy (Woodcock and Graham 2020), suggest high levels of surveillance from employers. The constant need for automated systems to collect data and quantify human behaviour promotes the commodification of privacy (Moore and Robinson 2016), thereby allowing it to be exchanged for employment opportunities (Ajunwa et al. 2017). Moreover, in cases where workers rely heavily on algorithmic guidance, the automated systems themselves become the managers, tracking and influencing workers’ actions without any accountability or transparency (Mateescu and Nguyen 2019) and incorporating their data into improving their systems (Delfanti 2019).

These examples suggest that the applications of artificial intelligence in the
workplace are already occurring. Therefore, the issue at hand regarding the deployment of AI is not the reskilling of workers whose jobs will be replaced, but the degradation of their working conditions due to the deskilling of the labour process, the implementation of algorithmic management, and privacy issues. Still, the situations previously described illustrate only some of the current concerns with AI and labour, since the development of these systems relies heavily on human labour to exist and subsist.

**AI Development**

Researchers Kate Crawford and Vladan Joler from the AI Now Institute published an analysis of the labour and natural resources required to power Amazon’s virtual assistant technology Alexa (2018). The authors stress the importance of natural resources and human action to sustain automated systems from a material perspective by arguing that, in the context of AI, “each small moment of convenience – be it answering a question, turning on a light, or playing a song – requires a vast planetary network, fueled by the extraction of non-renewable materials, labour, and data” (Crawford and Joler 2018).

The authors trace the creation—and disposal—of the material and digital components that power the Alexa with an analysis based on the dialectic of subject and object in the economy. They illustrate the evolution of the device that supports the AI, from the extraction and transformation of natural resources into electronic components to their assembly and shipping and, then, their collection, recycling, and disposal. Regarding the transformation of data, the authors illustrate its constant flows, starting with the quantification and capture of natural processes through these electronic devices,
and their passage through various infrastructures (domestic, local, national, and global). Then, they describe how Amazon processes this data. At this level, the authors acknowledge both the labour of engineers and technicians in maintaining these infrastructures and the unrecognized, low-paid, or even unpaid labour of “digital pieceworkers” (Dubal 2020) that supervise, correct, and even impersonate the AI system when required (Tubaro, Casilli, and Coville 2020) through “crowdsourcing.”

The “Anatomy of an AI System” illustrates how the development of artificial intelligence depends heavily on different types of human labour and natural resources that span the entire planet. For the authors, the artificial intelligence system “becomes a complex structure of supply chains within supply chains, a zooming fractal of tens of thousands of suppliers, millions of kilometres of shipped materials and hundreds of thousands of workers included within the process even before the product is assembled on the line” (Crawford and Joler 2018). Thus, by focusing so heavily on the deployment of AI systems and the “future of work,” the current relationship between artificial intelligence and labour remains ignored in many cases.

Platforms have become central to the creation of AI because they allow a permissive quantification of the natural world; there are “(re-)programmable digital infrastructures that facilitate and shape personalised interactions among end-users and complementors, organised through the systematic collection, algorithmic processing, monetisation, and circulation of data” (Poell, Nieborg, and Dijck 2019). The platformization process involves the “penetration of the infrastructures, economic processes, and government frameworks of platforms in different economic sectors and spheres of life” (Poell et al. 2019), which allows an economically efficient way to harness the data necessary for
AI systems while reducing production and development costs to a minimum. Thus, the platform model constitutes the primary organizational paradigm for the major corporations that develop artificial intelligence today (Casilli and Posada 2019).

In this context, labour platforms are an excellent example of the relationship between the development and the deployment of artificial intelligence. Despite representing a small portion of the current global workforce (O’Farrell and Montagnier 2020), their study is fundamental to comprehend the ethical implications of AI and work. The platformization of labour allows firms to reduce production costs by externalizing—and outsourcing—jobs outside of their scope to “independent contractors” (Prassl 2018: 79). For instance, in the case of “digital piecwork” platforms, where unrecognized and invisibilized workers provide data and serve as supervisors for machine learning technologies (Dubal 2020), the platforms allow algorithms to serve as managers (Mateescu and Nguyen 2019), and to surveil and “datafy” (or harness as data) the behaviour of workers (Casilli and Posada 2019).

Furthermore, as platforms serve as intermediaries, they also prevent workers from engaging in collective action (Wood et al. 2018), even deliberately (Posada and Shade 2020). By looking at the heavily deregulated status of platform labour and comparing it to the ethical principles for AI previously mentioned, it is evident how the issues of privacy, accountability, explainability, and fairness are still not met in these instances where the deployment and development of AI merge.
Human Rights-Based Regulations

Echoing the debate between continuity and discontinuity theories, Ken Goldberg argues that intelligent machines will work closely with humans instead of replacing them, a concept that he calls “multiplicity” (Bauer 2018). As the total quantification of human and social experience remains a long term—or even impossible—dream, the labour of those required to develop AI—and those affected by its application—will remain central to the discussion of its ethics, governance, and policy. In the context of “multiplicity,” the central issue in terms of labour relations will remain the ownership, fairness, and power relations between those who control these automated systems and those considered its “users.”

Emphasizing the limits of ethical principles, Yeung, Howes, and Pogrebna warn against their lack of enforcement and the immense influence of corporate entities in their development (2020). The authors suggest using international human rights standards as a basis for AI’s ethical frameworks, as they are “grounded on a shared commitment to uphold the inherent human dignity of each and every person” (Yeung et al. 2020). In a similar vein, Valerio de Stefano argues that a human-rights approach to the regulation of AI labour limits and rationalizes the “exercise of managerial prerogatives” that can affect the autonomy and dignity of workers (De Stefano 2020: 16).

There are several historical human rights conventions related to labour that address workers’ concerns in the development and application of artificial intelligence better than the recently published principles and strategies do. Through the International Labour Organization, the United Nations has issued several conventions on human rights related to labour issues. These
fundamental human labour rights include the freedom of association and recognition of the right to collective bargaining, the elimination of forced labour, the abolition of child labour and discrimination, and equal remuneration (ILO 1998). As mentioned, there is still a long way to go when it comes to upholding these basic labour principles in the development and deployment of AI. For example, some platforms deliberately hinder collective bargaining by their workers (Woodcock and Graham 2020) and the application of artificial intelligence in worker recruitment reproduces biases towards particular social minorities (Ajunwa et al. 2017).

Furthermore, the proposed idea of “regulatory markets” can complement existing regulations, notably at an international level. Current government regulations on artificial intelligence are national in scope and fail to address the rapid development and deployment of these systems (Clark and Hadfield 2019). This situation becomes problematic when online labour markets include several countries and create a situation where workers, intermediaries, and companies are subject to several jurisdictions (Graham, Hjorth, and Lehdonvirta 2017). Clark and Hadfield propose a situation where international “private regulators” (which could be called “independent regulators” instead) serve national governments by overseeing compliance with governmental principles and desired outcomes (2019).

Currently, the “FairWork Foundation” operates similarly to these proposed regulators in partnership with the International Labour Organization. Placed between consumers and companies and modelled after the Fair-Trade Movement, the FairWork Foundation evaluates digital labour platforms according to the principles of fair pay, conditions, contracts, management, and representation (fair.work). The scores inform workers, clients, and the public-at-large
about the quality of work in these platforms, hoping that “core transparent production networks can lead to better working conditions for digital workers around the world” (Graham and Woodcock 2018: 250-251). Like Clark and Hadfield’s regulators, this initiative complements existing ethical principles, direct government regulations, and independent collective action and organization, which remain fundamental in ensuring that the development and deployment of artificial intelligence serve the public good.

**Conclusion**

Ethical principles are essential to the relationship between AI and human labour, but they need to become more comprehensive. Principles alone cannot be enforced in social contexts, and they should go hand in hand with clear governance procedures involving multiple parties and oversight from international and national policies that aim to respect already established human rights. These actions cannot focus solely on the prospective “future of work” or on the deployment of artificial intelligence in the workplace. AI is here, and it is already impacting the “present of work.” Machines depend on humans to exist, and both entities are already complementing each other. Ethics, governance, policy, collective action, and other alternatives will remain essential, as the question will not be if machines will be replacing humans, but who will own the machines and have a say in the relationship between them and humans.
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