Extractivist and exploitative labour practices: why AI's promise cannot be fulfilled.

Prompt: *AI cannot be revolutionary due to its infrastructural needs. Discuss.*

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In 2023 hype surrounding 'AI' feels inescapable. Bill Gates claimed that current developments in AI are as transformative to society as the Internet and that AI "*can help people everywhere improve their lives*" (Gates 2023); Sam Altman (OpenAI's CEO) stated that the AI revolution would bring about "*a new kind of society*" (Andersen 2023); Rishi Sunak when hosting the first AI Safety Summit spoke of AI bringing transformation "*as far-reaching as the industrial revolution*" and "*the coming of electricity*" (Sunak 2023), a thought echoed by Google's CEO, Sundar Pichai (Andersen 2023). In brief, AI will supposedly radically change society for the better, although details as to how are scant.

This essay will show that so long as AI's relationship to labour perpetuates extractivist and exploitative practices, it cannot yield positive transformational changes of the kind that have been promised by interested stakeholders and politicians.

I will use term 'AI' as short-hand for technologies powered by algorithms whose applications range from facial recognition, to text prediction, to credit scoring, to multimodal generative models. The unifying factor will be their description by developers and marketeers as 'AI' rather than any substantial assessment as to whether or not they are indeed "artificially intelligent".

This essay will be structured as follows: part one will consider what makes a technology 'revolutionary'. Part two will argue that the main infrastructure sustaining AI is human labour. Part three will show that reliance on human labour in such a way prevents AI technologies from being revolutionary because they simply replicate paradigms of extractivism and surveillance. Part four concludes.

I.

AI often draws comparisons to inventions like the printing press, or the steam engine. These comparisons imbue a single gadget with the power to transform society instantly. However, in reframing the myth of the Gutenberg press, Scott D. N. Cook has argued that sweeping social changes are brought about by multiple, mutually-influencing technological and social innovations (Cook 1995). Likewise, Stephen R. Barley notes that given the coalescence of multiple technologies and the time it takes to implement systems that together mark 'technological revolutions', it would be more accurate to describe these as technological *evolutions* with periods of intensification (Barley 2020).

This can be seen in the case of AI. Disciplines like philosophy, mathematics, economics, neuroscience, linguistics and computer engineering all provided knowledge building blocks which developed AI (Russell and Norvig 2016). Advances in these constituent

blocks underwent a series of 'springs' and 'winters'. The key ingredients which brought the field of artificial intelligence (and in particular deep learning) to the fore again in the last decade were (i) technological innovations like personal computers and smartphones which enabled the collection of granular data at scale and (ii) societal changes in the adoption of these technologies at work and in personal spheres.

The current age of AI is also, as noted in the introduction, compared to the industrial revolution to highlight how it will usher vastly improved societal conditions. However, as economists Johnson and Acemoglu have observed, during the industrial revolution prosperity that cut across all classes emerged only in the second half of the 19th century, when policies were enacted to ensure that productivity gains did not only serve the elite (Johnson and Acemoglu 2023). They argue that there is nothing automatic about technologies bringing progress. Rather, three conditions must exist: (i) competition amongst business players; (ii) trade and labour unions capable of negotiating better wages and improved conditions to temper any labour coercion; and (iii) the integration of new technologies in ways other than replacement automation, so as to create new opportunities. If these conditions aren't present, as they weren't in the first half of the 19th century, then gains brought by technological innovation remain solely in the clutches of the elite, and societal progress stalls.

Thus, technologies on their own cannot be revolutionary: they don't exist in a vacuum. Together with other technological and social innovations they build towards a period of intensification with the potential to improve societal conditions at scale. Precisely because AI's revolutionary potential rests on such a paradigm-shift, AI's promise to "*help people everywhere improve their lives*" will not be fulfilled. As will be shown in part II, AI relies on the exploitation of human labour, continuing the tradition of extractivism in the name of profit and not societal progress. Unless political and economic reforms are enacted to create the conditions of progress set out above, AI will simply continue to advance neoliberal visions of commercial stakeholders (Katz 2020) which are the antithesis of revolutionary.

II.

The indelible infrastructure that powers AI is human labour, which manifests itself primarily in three phases: (i) data collection; (ii) model refinement; and (iii) further data collection via surveillance at deployment stage. All three stages are inexorably linked to extractivism and surveillance capitalism and thus prevent AI from yielding transformative social changes.

Data collection: The first dataset credited with sparking exponential developments in deep learning methods is Fei-Fei Li's ImageNet. Building the database required downloading millions of images from Google, Flickr and the like (Pasquinelli and Joler 2020). Then, images had to be labelled. However, hiring Princeton students working in Li's lab was too

costly at $10/hour. The solution was to use of Amazon Mechanical Turk: a service powered by thousands of anonymous workers spread across the world, earning pennies for discrete tasks, like labelling images. As Li said, "*Suddenly we found a tool that could scale, that we could not possibly dream of by hiring Princeton undergrads*" (Gershgorn 2017). This scraping of images with no regard for consent and outsourcing of cheap labour did not stop with ImageNet. GPT-4, the foundation model powering ChatGPT, contains copyrighted material and OpenAI is now at the receiving end of a series of lawsuits. Recently, researchers at Google also showed that ChatGPT could be made to reveal its training data which included emails with personal identifiers (Nasr et al. 2023).

Model refinement: Once a model is built, it needs to be refined. The same problem presents itself: hiring content moderators in countries with stronger employment laws is more costly and time-consuming. Why lose competitive edge and additional profits when moderating tasks can be subcontracted to companies operating in jurisdictions with lax labour laws? A burgeoning underclass of AI workers is therefore born. OpenAI subcontracted its content moderation to Sama, a company (like others operating in this space) employing workers in Kenya for less than $2/hour (Perrigo 2023). This constant flow of cheap annotation, achieved via the exploitation of workers in the Global South, is essential to the deployment of commercial products and perpetuates offshoring practices and a race-to-the-bottom mentality which entrenches inequalities rather than yielding societal progress for the benefit of all.

Surveillance: At deployment stage, further human labour is extracted via surveillance techniques. Amazon installed AI tracking systems on its delivery vans, to monitor drivers (Weatherbed 2023) continuing its draconian worker-surveillance measures, all aimed at cutting inefficiencies and developing machines able to replace workers so as to decrease operating costs and maximise profit. Likewise, Amazon's terms of service for Alexa make it clear that a user's requests will be used to train the model's speech recognition and natural language understanding. OpenAI can also record content inputted into ChatGPT and use it to develop new programs and train their models. Thus, additional human labour is extracted for free via surveillance mechanisms aimed at improving the efficacy of AI models all in the name of benefitting those developing and deploying them.

It is therefore plain that AI necessitates human labour throughout its lifecycle and does so by perpetuating extractivist and surveillance practices which, as will be developed in part III, prevent AI in its current form from bringing shared societal prosperity.

III.

AI's reliance on human labour in the ways set out above perpetuates (i) offshoring practices and the exploitation of resources in the Global South; (ii) surveillance logics used to control workers and extract profits; and (iii) the move towards replacement-automation.

Scholars Mezzadra and Neilson have catalogued extractivism in relation to labour across history, with examples ranging from the use of slave labour in European colonies to the contemporary exploitation of children in the Congo mining rare earth materials used to power lithium batteries (Mezzadra and Nielsen, as cited in Crawford and Joler 2018). Today's offshoring practices in the context of AI are no different. Reduced costs boost profits at the expense of those working in perilous conditions. Data annotators have reported exploitative conditions in the form of low pay, psychological harm, burnout, health issues caused by excessive screen-time, unfair dismissals and constant exposure to brutal content with no psychological support (Rowe 2023; Perrigo 2023). This race-to-the-bottom also displaces workers who would have otherwise performed tasks domestically, for a higher wage (Johnson and Acemoglu 2023), bursting the myth that technological advances inevitably bring shared prosperity and opportunities.

Likewise, as outlined by Pasquinelli, the encoding of human work patterns into machine processes continues the history of surveillance and automation that began in the industrial revolution (Pasquinelli 2023) with figures like Charles Babbage. The act of quantifying and encoding human labour required monitoring the efficiencies of workers closely, so as to assess whether tasks could be abstracted and divided even further, and then automated, to limit costs and maximise profits. Amazon's AI surveillance-practices simply carry on the trend.

Critical to the history of replacement-automation is the intentional concealment of human labour behind the machine, because revealing such work undermines the myth of machines as objective and infallible (Katz 2020). Yet, as evidenced in Part II, automation is merely illusory. Attempts by AI developers to hide human labour behind their products exemplify their lack of concern with bringing shared prosperity. Today's push towards replacement-automation is akin to that witnessed in the first half of the 19th century: one that, until labour unions forced economic and political reforms, disenfranchised all but few industrialists. Indeed, until collective bargaining power allowed for greater wage negotiation, factory workers pushed out by automation were forced to take lower-paying jobs, for longer hours, threatened by constant job precariousness (Johnson and Acemoglu 2023).

This is precisely AI's current trajectory: corporate incentives to maximise shareholder profit, weakened trade and labour unions, invasive surveillance practices and a widening inequality gap cannot bring shared prosperity. As a class of low-skilled, low-paid ghost

workers with little to no bargaining powers emerges, it's plain that AI should be compared to (the first phase of) the Industrial Revolution, but for all the wrong reasons.

<center>**IV.**</center>

As set out in Part I, for AI to fulfil its promise and contribute to widespread societal transformation, Johnson and Acemoglu's three conditions must be met:

Competition: Presently, few players operate in the commercial AI space and these are wholly controlled by, or have sold substantial stakes to, Big Tech companies which have leveraged their current market dominance and surveillance models to secure *future* market dominance (Kak et al. 2023). This oligopoly incentivises players to continue pursuing profit by extracting and exploiting labour as required, in order to maintain their market edge.

Trade unions and improved working conditions: From the 1980s onwards the US saw a sharp weakening of the labour movement which, coupled with the rise of digital technologies that automated work and the adoption of the Friedman doctrine, which pushed businesses to maximise shareholder value (and therefore profit, as opposed to the welfare of all within the business), brought rampant wage inequality. Far from proving that technology could yield shared prosperity, the next 20 years saw the distribution of income between capital and labour change drastically - including in Nordic countries - as the share of capital held by the top 1% increased (Johnson and Acemoglu 2023). Today, companies like Amazon have actively punished workers seeking to unionise. This lack of countervailing power (and weakened laws protecting workers' rights to unionise) means that ghost-workers operating in sectors fuelling AI cannot negotiate better wages and working conditions for themselves. The importance of collective bargaining power should not be understated. Recently, Tesla workers in Sweden went on strike when Tesla refused to sign a collective agreement, a voluntary agreement between employer and employee-representatives regulating pay, overtime and insurance which is a critical component of Sweden's labour-market model. Shortly thereafter Klarna, a Swedish-based payment company, decided to sign a collective agreement in an attempt to thwart strikes at its own headquarters (Bryant 2023).

Integration, not replacement automation: Unless companies using and developing AI cease to prioritise replacement-automation and instead focus on creating new opportunities for workers, productivity (and therefore profit) gains will remain in the hands of those implementing efficiency measures.

AI, like all technologies, is not a gadget capable of bringing about sweeping societal changes single-handedly. Rather, it can, in conjunction with other technological and social advances, lead to an intensification period which, in turn, can yield shared prosperity. In its

current form, AI - whose primary infrastructure is human labour - continues to rely on extractivist and exploitative practices. Until the status quo remains such, the promise of AI will not be fulfilled. Rather than bringing widespread social benefits, AI will simply entrench at exponential speed the power imbalances that already exist in todays's society.

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