

the future of work: five contrarian insights



A CONTRIBUTION TO THE **MY LABOUR OUR FUTURE** DIALOGUE FROM
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There has been a wave of public concern in recent years about the future of work, jobs, and employment. Much has been sparked by the advent of new technologies (like AI, automation, self-driving cars, and others) which seem to hold the potential to transform, and perhaps eliminate, many jobs. Public concern also reflects worries about new business models, like digital platforms, which are disrupting how work is organized (if not concretely changing how work and production actually occur): for example, with gigs replacing traditional jobs.

I also worry about the future of work: both whether there will be enough jobs, and also about the quality of future jobs. But I worry about the future for very different reasons than are typically emphasized in many current public discussions. I think that commonly-stated concerns about technology and work misunderstand how labour markets function in our economy – and misdiagnose the challenges facing workers, their families, and our communities. In particular, I think there are more urgent and important things to worry about, than the fear that new technology will make workers generally redundant.

After several years of studying trends in work and labour markets, and the impact of new technologies and business models, I have come to five core conclusions regarding the future of work. They may seem surprising or counter-intuitive; in some ways they challenge popular ideas about what is happening to work. But in no way do they lead to a position of complacency: a belief that we should all just chill out, and just let the labour market do its thing. To the contrary: I think the challenges facing work (and workers) are urgent and daunting. They demand quick and powerful responses from policy-makers and all labour market stakeholders; they definitely won't be fixed by the automatic, all-knowing forces of supply and demand. I do believe, however, that these threats come from a different direction than many observers currently assume – and this should lead us to carefully rethink our policy responses accordingly.



#1: Work is not disappearing. It can't.

Productive human labour, broadly defined, is the only force that can add value to the products and raw materials we harvest from nature (hopefully sustainably), transforming them into the full complement of useful goods and services that are essential to our modern lives. Robots and other forms of automation cannot replace human labour, in the general sense. Rather, they supplement our work effort: potentially making it more productive and efficient, and allowing us to do new things. But robots (and other forms of technology) do not fall from the sky, as if in a Terminator movie. To the contrary, they must be conceived, engineered, tested, manufactured, installed, operated, maintained, repaired, and improved. That all takes work – and lots of it.

For many different reasons, work and employment will not disappear en masse because of automation. At the most fundamental level, there are simply too many important, valuable things that human beings need to do – including things like caring for each other (in growing, labour-intensive industries like child care, aged care, and disability services), and protecting our environment (with ample opportunities for new work in areas like sustainable energy systems, energy conservation, and public transit). These things are going to require us to keep on working to the best of our abilities – never mind meeting our needs for the more usual inputs to a good life (like food, clothing, shelter, transportation, and public and private services).

Many economists have noted that new technology tends to create new work, as well as changing or eliminating some jobs. For example, all that work associated with developing, manufacturing, operating and maintaining the technology. But also all the new jobs in industries and services that are opened up by new technology: such as developing apps for smartphones, producing content for streaming services, or performing new medical procedures enabled by new tools. This is true and valid. But there is no guarantee that those jobs created by new technology will offset all the jobs destroyed by it. That's why we also need an ambitious commitment to expansionary, full-employment macroeconomic policy to smooth the resulting transitions, and make sure there is enough work to go around as technology evolves.

Meanwhile, there are other, less benign reasons why work will not disappear. One is the continuing capacity of our hyper-competitive, race-to-the-bottom labour market to create and recreate low-productivity, low-quality jobs. Jobs that provide menial incomes and dubious social value, but nevertheless deliver a profit to the firms which create them. When labour is cheap, and when an abundant pool of desperate workers is available to perform it, then creative employers find lots of ways to employ it. The result is an endless variety of gritty, poorly-paid, labour-intensive occupations: preparing and delivering fast food, handing out flyers or soliciting donations on street corners, phoning people at dinnertime



to sell them products they don't want. These are not good jobs, and there are far more important things we should collectively be doing with our time, energy, and creativity. The growing importance of these low-grade jobs explains the perverse result that the aggregate capital-intensity of production in our economy is actually falling, despite the supposed rise of robots and other technology: too many low-wage labour-intensive jobs are being created, and companies are investing too little (not too much) in new capital. Given this context, there is certainly no prospect that work, and workers, will disappear.

#2: Technology is not actually accelerating.

The rapid growth of low-tech, low-wage jobs highlights another surprising fact: at the macroeconomic level, labour-saving technological change is not actually accelerating. In fact, it seems to be slowing down. We've all seen YouTube videos showing the amazing things that robots can do. But in the real-world economy, the applications of these technologies (originally developed in closed, controlled environments) are proceeding more slowly than most tech gurus expected. In practice, there are many real-world hurdles and prerequisites that must be overcome before innovations can be adopted in widespread day-to-day use. These include major capital investments by firms using them; enhancements in infrastructure to make them useful; meeting safety, privacy, and insurance requirements; training and qualifications for the workers using these machines; and building social acceptance.

A good example of how laboratory technology rolls out more slowly than projected is self-driving vehicles. Many doomsday scenarios have predicted the disappearance of millions of jobs for drivers in various applications, as self-driving technologies are perfected and applied. Yet the barriers to their use in real-world situations are daunting. And for now, "driving" (whether trucks, buses, taxis, or even bicycles) is one of the fastest-growing occupations in the economy – demanding few formal qualifications, and usually paying lousy wages (except for those drivers who have a union and work in a regulated industry). It would actually be nice if monotonous, often dangerous driving jobs were eliminated, so long as displaced workers could be assigned to more enjoyable and better-paying work. So far, however, exactly the opposite has been occurring.

At the economy-wide level, productivity growth is actually slowing down, not speeding up (as it should be if labour-saving technology was indeed accelerating). It's in fact growing at less than half the pace as in the expansionary postwar era of the 1950s through the 1970s – a time when unemployment was low, real wages grew rapidly, and social programs were expanding. In those decades, technological change and productivity growth went hand-in-hand with rising living standards, near-full employment, and growing social security. What has changed so that technology is now more commonly feared as a harbinger of displacement and inequality? It's not technology that's always been changing. It's the social context in which technology occurs. Instead of a social compact in which participation,



work, and shared prosperity were priorities, we now live in an unequal, dog-eat-dog society in which insecurity and the risk of failure are ubiquitous. We should be blaming that change, not technology, for our hardships and our worries.

Another major factor in the slower-than-expected spread of robots, AI, and other labour-saving technology through the economy has been the chronic failure of businesses to invest adequately in new capital equipment. Despite strong profits, private businesses have significantly reduced their investments in real technology, machinery and equipment, structures, innovation, and other productive channels. In Canada, business investment in machinery and equipment has fallen steadily since the turn of the century, shrinking by one-third as a share of GDP – despite healthy profitability and big cuts in business taxation. Instead of pumping those after-tax profits back into new capital, businesses are emphasizing dividend payouts, share buybacks, financial hoards – and, of course, swollen executive compensation. True innovation must be manifested in new capital equipment for its gains to be realized, and for many reasons – not least being the lack of imagination and commitment of our business leaders – this is not happening.

#3: There is nothing new about gigs.

Many pundits are also obsessed about the rise of digital platforms and other new business models, which they view as another sign that the world of work as we know it is disappearing. And the executives of gig employers like Uber claim that their “innovative” models of work require society to abandon its “old-fashioned” restrictions and regulations – like paying someone at least the minimum wage for an hour of work. This claim that gig business models are “new” is historically false: in fact, contingent employment practices of digital platforms are hundreds of years old. And it is not modern technology motivating these businesses to eliminate traditional employment relationships and protections – it’s good old-fashioned greed.

Jobs in modern digital platforms are typically characterized by several common features:

- On-demand employment, where someone works only when there is immediate demand for their output.
- Piece-work compensation, where workers are paid for each unit of output, not for their time.
- Workers provide the immediate capital equipment they use (tools, personal equipment, a car), and often the place of work itself.
- There is a triangulated relationship between the worker, the end-user of their services (either a consumer or another business), and an intermediary who matches them and creams off some of the economic surplus from the transaction.



These core features of modern gig work are not new. Every one of them is visible in long-standing (and usually highly exploitive) employment practices that are as old as capitalism: from the brutality of agricultural gangmasters, to the women who did small-scale home-based manufacturing under the “putting out system” of the 19th Century, to the desperation of day-labouring miners, dockworkers, and drivers who toiled in on-demand day labour. There is nothing new about precarity – and precarious work is much broader than just digitally mediated gigs, with around half of workers now experiencing at least one dimension of precarity in their work. There is nothing novel about employers seeking ways to shift the risks and costs associated with work (including the cost of capital equipment, and the risks of fluctuations in demand) to those who do the work. And it is not new or surprising that desperate workers, when they have few other options, would accept those jobs. It doesn’t mean they like this arrangement, or that they’ve rejected the idea of a regular salary, paid holidays, and a pension. Rather it means they’ve been deprived of access to jobs where they could enjoy those benefits.

The aura of shiny innovativeness that surrounds digital platform business models needs to be stripped back, and the essence of these business models (and their long historical pedigree) examined more critically. That infatuation with what is “new” has certainly contributed to the inertia of regulators, who have moved very slowly to address the unfair and often dangerous side-effects (including numerous social externalities) arising from digital platform businesses. It has also contributed to a false resignation that this way of organizing work is somehow inevitable, reflecting the exogenous onward march of technology – rather than perverse and vested interests.

It was only in the 20th Century that what we now call the “standard employment relationship” became a widespread norm, replacing previous incarnations of hyper-precarious gig-type work (from gang-masters to putting-out to day labour). For a while, work was most commonly organized through waged, permanent, full-time jobs with indefinite tenure. They were rarely “jobs for life,” but they were normally expected to continue unless something happened (recession, bankruptcy, personal incompetence) to prevent it. Technology was one factor behind the rise of that standard employment relationship, but not the only one: macroeconomic conditions, the stance of labour regulation, and the power and expectations of workers’ and social justice movements also played critical roles. Of course, that standard employment relationship was never universal: it always embodied unequal gender and racial features. But for a while, it underpinned important improvements in job quality and compensation, and widespread (if not fully inclusive) prosperity for workers. Its erosion under the tough-love economic and social policies that have dominated many industrial economies since the 1980s reflects the evolution of political-economy, much more than the march of technology. So the more recent resurgence of gig work is neither novel nor inevitable.

#4: Technology changes employment relationships, not just production.

Technology is not neutral or exogenous. Innovation results when people are assigned to solve specific problems, in order to advance specific interests. So the types of technologies developed, and the way they are implemented, will always reflect the priorities and biases of whoever is paying to develop them. For this reason, we must reject the common infatuation with technology as some kind of powerful, irresistible force, and start to consider the non-neutral ways it is conceived, developed, and applied – including the ways it affects power balances and relationships within the workplace. In many cases, technology is all about relationships: many innovations have little impact on the actual process of work and production, but instead are concentrated on changing how work is organised, managed, disciplined, and compensated.

This is clearly true of the technology underlying most digital platform businesses. Typically these businesses have not altered the physical nature of work and production at all. Consider the ride-hailing business: a driver still picks up a passenger in a car at Point A, and takes them to Point B. Digital apps changed the way rides can be booked, but rather trivially: replacing phone calls with digital booking (and digital booking through computers or smartphones is fully compatible with the traditional taxi business model). The key change that has occurred is in the employment relationship: drivers are constituted as contractors not employees, and this allows the employer to shed risks and costs associated with down time, equipment, accidents and insurance, and more. It also allows the employer to avoid normal obligations of the employment relationship: like minimum wage, pensions, workers' compensation, paid holidays, sick time, and more. There's obviously nothing in the use of digital technology to book a taxi that requires these far-reaching and unrelated changes in how work is organized and compensated.

Employers like Uber claim that on-demand workers want it this way. They routinely invoke the joys of "flexibility," whereby drivers can "work whenever they want," to legitimate these new/old contingent employment arrangements. Of course, workers' "choices" in this regard are always constrained by the lack of alternative job opportunities – not to mention by the nature of demand for their product (that's why Uber drivers universally "choose" to work on Friday and Saturday nights, not because they had nothing else to do at those times). The trite and self-serving attempt to misportray this whole arrangement as determined by workers' preferences is reminiscent of Anatole France's famous adage: rich and poor are equally free to sleep under bridges, and equally free to drive Uber for less than minimum wage, yet curiously it is only the poor who "choose" to do so.

There are other ways, often nefarious, that new technology changes employment relationships, without actually altering the process of production itself. A big one is the growing use of new digital systems for monitoring, evaluating, and disciplining workers. Digital



technology has made workplace surveillance cheap and hence omnipresent: ubiquitous video cameras, digital recording of work pace, GPS chips that deliver real-time location information to employers (right down to telling them how long the worker spent in the bathroom), and AI-based performance monitoring based on algorithms rather than actual supervision and management. In many occupations (especially those, like many digital platforms, that rely on contingent or contract labour), these technologies can even result in automatic dismissals – like Uber drivers deprived of their livelihoods when their web-based five-star ratings fall too low for their employer’s liking.

Apart from the obvious dangers to privacy and dignity posed by these “innovations,” they can have negative macroeconomic outcomes, as well. When it is so inexpensive for bosses to motivate their workers with a digital “stick,” there is less need to use a “carrot”: that is, less compulsion for employers to offer attractive salaries, promotion, and job security to retain and inspire staff. I believe the growing role of digital surveillance and discipline systems, and their tendency to reinforce “low-road” human resource strategies among employers, is one cause of the worrisome stagnation of wages that has bedeviled many industrial countries over the past decade.

#5: The economy is not held back by a lack of skills.

Conventional economic analysis of technology and work concedes that “disruption” in particular industries and occupations will occur – but the normal equilibrating tendencies of market forces (helped along, when needed, by countercyclical monetary policy) should ensure enough new work is created elsewhere to absorb any displacement. In this view, smoothing the necessary and inevitable transitions (rather than fruitlessly trying to stop them) is the best focus for policy. And in this regard, the call for more and better education and skills always takes top billing. This focus is reinforced by endless complaints from employers that they face a constant shortage of skilled workers; they want government to fix their problem by delivering a bigger supply of job-ready graduates.

These twin claims that the economy is currently held back a lack of skills, and that investing in more skills is the crucial precondition for future prosperity, are both false. Canadian workers are better educated than any generation before them – and better educated than workers in any other industrial country. The OECD, for example, reports that 57% of Canadian workers aged 25–64 have tertiary education, the highest proportion of any OECD country. Education enrolment and attainment is even higher among young workers: the very ones now being told to work gigs, rather than expect a genuine career. But that superior investment in education does not, in and of itself, create jobs in which workers can use those skills (except in the education sector itself, which is an important and growing employer). And unfortunately, millions of Canadians hold jobs that do not remotely require the (expensive) skills and capacities they have acquired. Empirical



evidence has shown that conditions of chronic excess supply have sparked an unproductive process of credential inflation, whereby employers' educational requirements for new hires increase in tandem with the number of desperate applications they receive for each opening.

This is not to say that bigger investments in public education at all levels are not necessary or valuable – whether it's early childhood education (proven to generate lifetime benefits for employability, wages, and health), to vocational training, to lifelong learning opportunities for employed workers. They are. And while education must never be valued solely as an economic or employment initiative (there are many other benefits of great education for individual, social, and democratic well-being), there are certainly ways that school-to-work transitions and the usefulness of education for employment could be improved. In particular, Canada needs to strengthen, fund, and plan its vocational education system much better. I am a big fan of the vocational training model used in Germany and other European countries, whereby high-quality vocational education is tightly linked to opportunities in regulated trades and careers (with strict qualification and certification requirements that enhance confidence in those skills and boost earnings potential), all supported by pro-active job placement and labour market planning.

Despite those potential benefits, however, skills and training are not a “magic bullet” for our future labour market. We need just as much attention and emphasis on creating jobs for those future, well-skilled workers to occupy. And just as concerned with lifting the quality and security of those jobs, so that the individual and social investments made in further training and education are validated and rewarded.

The future of work can be amazing ... but only if we make it so.

I am deeply concerned about the many negative and exploitative challenges already facing work and workers – including pervasive precarity, stagnant and increasingly unequal incomes, and lack of avenues for workers to exert a collective and constructive voice in their work lives. However, perhaps surprisingly, I remain fundamentally optimistic about the prospects for building a much better world of work in the future. Technology will not drive this change, and I forcefully reject predictions of a world shaped by robots and apps – whether in dystopian or utopian versions. Rather, it is the conscious and collective decisions we make as a society that will determine whether the future of work is amazing, or grim. Technology can be an asset in creating great work: used properly, it could let us work less (having more time over our lives to enjoy the fruits of our labour), it could eliminate much tedious or dangerous work, it could help balance of our work and production with the overarching need for environmental sustainability.

But all the choices about how technology will be wielded – both in the realm of direct production, and in the employment relationships that shape how we work – are contested



and open for debate and struggle. At present, those decisions are being overwhelmingly made in an unplanned, fragmented, and chaotic way, dominated by the private vested interests of individual firms and investors. We must build a more collective and democratic capacity to analyze and understand what is happening in the world of work, negotiate competing interests and priorities, and then wield policies and institutions that allow us to make the most of the positive potential of technology, while minimizing its downsides and prohibiting its abuses.

There are several obvious principles and priorities that would move us toward that more thoughtful, inclusive approach to managing technological change, and achieving a great future for work and workers:

- Strong rights for workers to have information, notice, and input around technological change in their workplaces.
- Organized and accepted systems for workers to collectively negotiate adjustment with their employers.
- Protections from the abuse of digital technology in workplace surveillance, performance monitoring, and discipline.
- A strong commitment from employers to redeployment and upgrading of workers affected by technology (facilitating internal mobility).
- Meaningful commitments by government to income protections, genuine training (not band-aids announced at moments of crisis), and adjustment assistance for workers (facilitating external mobility).
- More effective funding and planning of vocational training programs, tightly linked to pathways in recognized, regulated trades and careers.
- A commitment to genuine full-employment in macroeconomic policy, so displaced workers have abundant alternative opportunities.
- Ongoing investments in public human and caring services – which both create many high-value jobs in their own right, and support the ongoing individual and community capacity-building that will be critical to well-functioning future labour markets.

This agenda would help to ensure that the future of work is inclusive, balanced, and efficient. It would help us channel the potential of technology in directions that lift the quality of work – and the quality of life – rather than intensifying and degrading it. It requires a conscious sharing of power: taking unilateral authority from the private interests that are currently making most of the decisions, and sharing it with workers, communities, educational institutions, and all of society.



For that reason alone, these proposals will be resisted and denounced by those who benefit most from the current, unbalanced labour market we work in today. But if we want a future of awesome work, we'll have to confront that challenge and build the capacity to take the future of work into our collective hands.

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