

Capitalism, Technology and Work: Interrogating the Tipping Point thesis

Paul Thompson

Accepted for publication in Political Quarterly

Abstract

Post-work politics, with a focus on universal basic income, rather than an agenda of saving jobs and improving the quality of work, has been a growth area on the left. This article challenges the views of proponents that their claims are 'on trend' with developments in markets and technology. It does so by examining two supposed 'tipping points' concerning crises in the production of value in capitalism and in the availability of and attachment to work. Through a rigorous examination of available evidence, the article demonstrates that the stories contained in post-work discourses about business models, technologies, labour markets and workers are not empirically sustainable. Suggestions are then made about what more credible accounts of actually existing capital, technology and labour might look like, and what the direction of alternative, progressive policy agendas might be.

Keywords: post-work, post-capitalism, automation, business models, financialisation, quality of work

Introduction

Post-work politics, as pursued on the left, draws on a variety of normative and empirical claims. For the purposes of this article the former (the preferred outcome) are set aside in order to focus on the latter (the outcomes predicted). In political debate, empirical evidence, underpinned by guiding concepts is rightly seen as a precondition of plausibility. Paradigm shift perspectives – of which post-work politics is a variant – require evidence that their claims are 'on trend' with developments in markets and technology and this is exactly what we observe in claims made by leading proponents such as Paul Mason and Srnicek and Williams.

Such claims are associated with overlapping perspectives. Some come from a specifically post-work politics that relies primarily on assertions concerned with the effects of automation. Optimism on the prospects for the latter is fuelled by the view that 'machines can increasingly produce all necessary goods and services' (Srnicek and Williams 2015: 113). Others can be located in the discourse of post-capitalism; whose object is value and profits at a macro and micro economic level. In both instances, the transformative powers of science and technology are the primary perceived driver. However, there is another link. It is the contention of this article that they are held together by the idea that the worlds of business and work have reached a tipping point or points. Various structural obstacles mean that capitalism can no longer supply the profitable business models or the jobs that can raise productivity, find profitable new markets or sustain a viable economic and political order. A paradigm shift towards something variously described as full luxury communism, a post-work society or a collaborative, network economy is not only desirable, but inexorable. The centrality of the demand for a universal basic income (UBI) is the logical outcome of tipping point perspectives, summed up in a much-lauded graffiti sprayed on a wall by the far-left wing of the gilet jaunes, 'we want some money now while we are waiting for communism'.

In articulating a case for a 'world without work', it needs asking, which world are we talking about? Such discourses are heavily skewed towards the advanced capitalist economies and are either uninterested in or blissfully unaware of job growth or widespread informal work, or technological capacities and economic conditions in the Global South. However, given the absence of serious coverage of this kind, our focus has to be on the claims that post-work thinkers actually do make.

The problem with twin tipping point arguments is that they are not true and therefore lead the left in some misleading and mistaken policy directions. By not true I mean the stories they are telling about business models, technologies, labour markets and workers are not, by and large, empirically sustainable. The article sets out the dimensions and sources of tipping point claims and critically interrogates them, before suggesting what more credible and empirically-grounded stories about actually existing capital, technology and labour might look like, and what the direction of alternative, progressive policy agendas might be.

Tipping point 1: post-capitalism?

Where do ideas about post-capitalism come from? The main derivation is from schools of 'autonomist' or 'post workerist' Marxism linked with the well-known ideas of Hardt and Negri and less prominent theorists of cognitive capitalism (See Thompson and Smith 2017). In such frameworks knowledge value in a third stage of capitalism (or post-capitalism) increasingly displaces value created through labour in production. Such value is created through the 'general intellect' at work and in social life more generally. The general intellect is taken from Marx's 'The Fragment on Machines', a short set of speculative notes about a possible future that was part of the Grundrisse. In this hypothetical future, scientific knowledge will become the source of wealth, reversing the subordination of labour facilitated by capital's previous appropriation of science and technology and providing the basis for the end of scarcity and the transition to (full luxury) communism. Inside the workplace, autonomous labour cannot be commanded or measured, whilst externally knowledge value and information starts to corrode the price mechanism, especially in the digital, internet sectors which become the leading edge of the new economy. As the old economy shrivels, a new form arises: the spontaneous rise of collaborative production of goods and services that no longer respond to the discipline of the market and managerial hierarchy' (Mason, 2015)

The second source is from knowledge economy and informational capitalism theories in both social science and popular business literatures. In essence, we find the same claims about knowledge value, shorn of the Marxist language, as well as the same hype about the rise of horizontal networks. Dews (2015) argues that when the cost of producing goods and services shrinks to near zero the entire rationale of capitalism becomes meaningless. The disruptive capacities of technological innovation (notably AI, big data analytics) is held to be the ultimate driver, facilitating an integrated network of smart products and markets. Hybrid companies in the sharing economy such as Uber and AirB&B are bridgeheads or precursors to a fully collaborative commons. Most of Dew's arguments are taken from Rifkin's (2015) *Age of Access*, one of the latest in a stream of speculative fictions that move on to the next paradigm break before the audience has worked out that the last one hadn't happened. Rifkin (and similar business writers) have also been a key source for Mason and for Hardt and Negri. Assertions that the internet is 'inherently designed' to be open and a universally accessible distributed network also remind us of a parallel technologically determinist influence on post-capitalist thought, the techno-populists and cyber-utopians.

Critique

There is some recognition amongst post-capitalist commentators that there are some obstacles to at least a more rapid tipping point. These include the creation of monopolies to restrict access, extract rent (as profit substitute) and maintain scarcity. However, these measures are treated largely as residues of the old and the last throw of dinosaur corporations, swimming against the current. Wrong – they are (part of) the current.

To understand actually existing capital, it makes sense to look at the largest firms and their revenues. Of the top 50 companies globally by revenue – which seems a reasonable place to start given claims about profitability – sixteen are financial corporations, nine energy or extractive, seven auto six retail and the rest a mixture of health, electronics, telecoms, construction, Pharma, conglomerates and electronics. Only four of these firms had declining revenue in the latest year. And only two tech giant – Apple and Amazon – appear in the list (Fortune 2018), though the picture would look a little different if the criteria was market capitalization. It is simply untrue that the kind of sectors and (implied) business models used in post-capitalist projections dominate the global economy. The archetypal companies of this era of capitalism are just, if not more, likely to be Shell, Walmart, RB Hathaway, Toyota, Samsung, Axa and Glencore. This is not to dismiss the three A's (Apple, Amazon, Alphabet). Firms can be archetypal in different ways, for example for their growth strategies, their employment models and their supply chains. It is a question of proportion and plausibility.

Such data does not explicitly reveal how such firms make their money. There are clearly a variety of business models in play. It is important to resist the hype that the digital somehow defines the economy, as in terminology such as platform capitalism. 'Platform' suffers from classic conceptual and empirical over-stretch. Its emphasis on the software bringing together producers and consumers conflates quite different business models (Uber's contracts/algorithmic controls, Facebook with its targeted advertising based on the extraction of user data), and obscures ownership and hierarchical power relations. (Weatherby 2018)

Given the variety of business models within and beyond the digital sector, it is important to chart some of the central trends. Research from radical political economy scholars (see Newsome et al 2016) in recent decades shows that the global economy is organised primarily through complex value and commodity chains. Chains can be thought of complex networks of buyers, suppliers and intermediaries. with various 'nodes'. Production of goods and services is often fragmented as larger players use outsourcing and other measures to reduce direct involvement in production. decrease input costs and focus on the most profitable activities. Contrary to the image of collaborative, horizontal relations, they are characterised by concentration of capital and centralisation of power. The key role in both buyer and producer- driven chains is played by oligopolistic lead firms. Concentration and centralisation of capital, notably through merger and acquisition, facilitates high market capitalization and securing of strategic asset that strengthens brand power. Fragmented production networks increase competition between rivals, allowing lead firms to capture value within the chain from suppliers and workers. Look in detail at any of the business models of some of the above firms such as Walmart, Apple and Glencore and this is what you will find.

With respect to concentration, the profit share of top 200 largest US corporations doubled between 1950 and mid-2000s (Foster and McChesney 2012). A recent report for the Resolution Foundation found that the proportion of revenue accounted for by the largest 100 UK firms (23%) had risen by a quarter since 2003-4 and concentration has increased in two thirds of industries. Uncomfortably for post-capitalist perspectives this is equally, if not more the case in the internet sector. Media and entertainment industry concentration is a long-term trend and the online giants have continued it. For example the acquisition of Instagram by Facebook has created a unique fusion of economic, political and social power. As numerous net critics, often former insiders, have noted web quasi-monopolies, ironically, utilise then monetise users' social networks within enclosed eco-systems. Commons-based peer production initiatives such as Wikipedia are, unfortunately, not remotely typical of the sector let alone the capitalist economy. More broadly, it has become obvious to all but the most dedicated boosters that the sharing economy, with its narrative of social reciprocity and neutral bridge-building between users and providers of services is a fiction. Companies such as Uber have built a business model that requires workers to be treated as independent contractors subject to algorithmic control. Along with others, such as AirB&B, they leverage their status as intermediary platforms and access to data to enter, build market power.

None of this is meant to argue that such business models are stable or guarantees of profitability, merely that in many cases they persist and prosper. Alongside concentration and centralization, finalization is the other and arguably most significant trend underpinning contemporary business models. In this context, financialization refers to the growing influence of capital markets on the behaviour of non-financial corporations (and state actors). The pursuit of shareholder value becomes the primary object, displacing older retain and invest models. If we return to the global value chain territory, pressure to meet targets for return on capital employed and increase income streams for shareholders explains much of the slicing up of the chain through offshoring and sub-contracting. Firms are increasingly treated as bundles of disposable assets from which value can be leveraged. Corporate governance and strategy become increasingly focused on delivering stock market expectations, set through valuation models and metrics used by institutional investors (see Cushen and Thompson 2016). Perpetual restructuring, financial engineering, enhanced focus on dividends to shareholders and, in the case of private equity, servicing debt. Though there are new forms of value extraction, again contrary to post-capitalist arguments about value in production, much of the cost recovery is through labour and the labour process in terms of headcount reduction, performance targets and work intensification, as well as value transfers impacting on worker wages, pensions and benefits.

Even if we focus on the micro economy rather than the conditions that led to the GFC in 2008, financialization is a far better explanation for the crises and contradictions of contemporary capitalism than automation or zero-cost production. For example, if it was the former, we would see evidence for far greater investment in physical and human capital and in innovation. Instead, we have deep-seated productivity problems, at least in the most neoliberal regimes where financialization flourishes relatively unchecked (Cashman 2017). Total business investment represents a smaller proportion of GDP than previous decades. Firms are not short of money, but liquid assets and balance sheet capital have been used to pay dividends and engage in share buy-backs to keep market value high.

Digital and other advanced technologies are better understood for their role in coordinating inter and intra-firm activities and in managing work and workers. On-demand business models such as those in the logistics sector require companies such as DHL to use software to track the flow of goods and labour required across their outsourced services supplied to various clients. The same processes can be used to track the performance of employees. This is repeated in different form in other sectors. Amazon are notorious for its intensive monitoring and

treatment of warehouse workers, but the practices are wider, yet the driver of the technological subordination of labour may also be indirect. When Amazon took over Whole Foods it imposed an inventory management system ostensibly aimed at cutting down waste. Yet recent reports (Smith 2018) indicate a massive ramping up of work intensity through data input, scorecards and job cuts. Workforce management software – WFM – that focuses on scheduling work and monitoring time, attendance and performance can have similar effects for on-demand labour in sectors such as care, retail and security. What some call the quantified workplace is not necessarily typical of all sectors, tending to proliferate in those that operate on low margins and those where monitoring can be exercised through crowdsourcing platforms. However, with the spread of people analytics and other types of digital Taylorism, we can confidently say that science and technology have not reached a point where they are no longer appropriated by capital for its own ends.

Tipping Point 2: Post-work?

In this sphere, the tipping point claims consist of overlapping crises of access and attachment to jobs. In a nutshell, most people hate their jobs, which is fortuitous because most of them are going to disappear due to automation. Exit from work is good for everybody as it 'that job is necessary either for your well being or for the well-being of others' (Danaher 2018). In their influential accelerationist text, Srnicek and Williams (2015) claim that a rising 'surplus population' is emerging on the back of a technologically triggered crisis of work.

Before we unpack these claims, let's start with some potential common ground. There is a lot to dislike in contemporary work trends (for an overview, see Findlay and Thompson 2017). Many people work too much, either because of long hours, or excessive demands. Though we have historically high levels of employment, too many of those jobs are low quality, under-rewarded, insecure, stressful and over-managed. Though this varies hugely across firms and occupations, there is a growing gap between what work – as specified by many employers – wants of us and we want from work. Unsurprisingly, even corporate surveys show low levels of employee engagement and increased cynicism.

The leap from these observations to 'widespread hatred for jobs' (Srnicek and Williams) may seem logical but that would be a mistake. We have not reached a work identity tipping point. It's not obvious where such claims derive from – certainly not from academic studies. The same survey and case studies evidence summarised above also shows high levels of work attachment and identity. The reports of disengagement refer to the firm and its broken promises and poor practices rather than the work itself. There is, of course, the much-touted YouGov survey on the back of Graeber's (2018) 'bullshit jobs' argument. Despite a loaded question ('does your job make a meaningful contribution to the world?'), the result was still 63% saying it did (see Thompson and Pitts 2018 for a full account). Sources of work attachment are varied, ranging from the intrinsic to the instrumental, but they are real and persistent and cannot be written off as the externally imposed effects of an outdated work ethic. Nor is it the case that strong attachments are confined to or correlated with higher paid or skilled jobs. For example, low paid care workers report strong intrinsic satisfaction alongside low pay and difficult conditions. (Hebson et al 2015)

Conversely, professional workers can and do enjoy the positive features of their circumstances, whilst kicking back against threats to their autonomy, work-life balance or pensions. The complexity and contradictory nature of work treatment and attachment was illustrated in a recent BBC news report on an A&E department under increasing pressure. A senior nurse interviewed said that she loved and hated her job on the same day.

In principle, post-work tipping point perspectives don't need workers to hate their jobs if they are going to disappear anyway' Admittedly, this core claim sits somewhat uneasily with current record levels of employment. However, the claims rest on future projections associated with the threat of automation appears to be stronger. After all, it is true that robots and AI (such as machine learning) *could* replace some routine tasks. A strong version of this claim, propagated in a clutch of futurist texts from academics and consultants, functions as the empirical heart of tipping point arguments.

Of these texts, the claim made by two engineering science academics, Frey and Osborne (2013) that 47% of US jobs were 'vulnerable' to automation has had the greatest impact. The language is of vulnerability, susceptibility and risk, yet in the process of endless repetition and circulation might have largely become *will* happen. Robotics and machine learning linked to big data analytics will reach beyond the routine to the cognitive. The higher the potential figure, the more it tends to be embraced on the normative, aspirational shores of post-work punditry, for whom, as noted earlier, almost all jobs could and should be automated.

The limits of automation

Let's stick closer to the claims and examine the 'methodology' of Frey and Osborne (see Wajcman 2016 for a wider discussion of the 'clutch' of futurists). They say that automatability of the job is a function of the skills required to complete the task. They then subject a sub-set of a dataset of occupations to this test to come up with the susceptibility figure. There are two fundamental problems of conditionality and context with this approach, which is broadly typical of the genre. First, job, tasks and occupation are confused and conflated. This matters. 'Jobs' are an amalgam of particular divisions of labour and employment/contractual relations. Tasks can be removed or configured through the design and application of technologies without eliminating the job, let alone complex and heterogeneous construction 'occupation'. Talk of automatability outside of the context of actual labour processes and employer uses of labour power (skills, dispositions, emotions, formal and tacit knowledges and so on) is misleading. In particular, it cannot be addressed through algorithms that search occupational databases for routineess or similar categories. Many high products can be made with relatively low tech methods.

The second overlapping problem is that a focus on bundles of skills is the absence of any consideration of the political economy of automation, particularly though the business models of firms. Like any other fundamental decision about the technical division of labour, the introduction of robotics or AI will be driven primarily their value proposition and cost considerations. There will be circumstances in which those considerations will lead to the elimination of jobs or roles, especially in the case of information handling and machine learning. In many others, the fact that something can be automated does not mean it will be. Many expanding sectors (hospitality, warehousing, platform working) operate low margin business models that rest on the flexible and intensive utilisation of labour. Introducing robots would be expensive and largely irrelevant. Also, as argued earlier, technology is already performing a crucial role in coordination and direction of the labour and intra-firm processes.

Then there is the issue of dominant business models at a higher, aggregate level . Financialization is the dominant trend in accumulation regimes. At the strategic and operational level, as the research of economists such as Marianna Mazzucato has shown, corporate decisions are disposed towards asset utilization (including labour) and enhancing income streams for shareholders against investment in physical and human capital and therefore innovation. This tallies with the widely observed point that substantial new technological inputs is inconsistent with the weak or stagnant productivity growth figures for the past decade. These problems underpin much of the critical commentary made by a range of bodies from bodies as diverse as the OECD, Scottish Government, Resolution Foundation. Economic Policy Institute and Roosevelt Institute.

As a comprehensive report for the Roosevelt Institute (2018, p. 16) put it, ‘While it is challenging to know what the future holds, the data are clear. We are not in the middle of a labor displacing technological boom, nor are we on the verge of rapid technological change in the near future’. Aside from productivity figures, they point to data from the Bureau of Labour Statistics that shows very little employment churn, which would be expected if automation was displacing workers. Eighty five case studies by Willocks and Lacity (2018) found that AI was ‘notably absent’ from most organisations in the USA and Asia-Pacific. Such findings are confirmed in the authoritative OECD study (Gregory and Zierahn 2016) that found an average of 9% automatability across 21 countries. Crucially they rejected an occupational-based approach in favour of a task-based one.

It is of course true that the complex macro and micro contingencies discussed above make projections of aggregate job loss due to automation problematic. However, if the future is difficult we also have the past. We have been here before. . In every previous wave of technological change, catastrophism has dominated public and policy discourse. The predilection of parts of the left to technological determinism and ‘capitalism in final crisis’ scenarios makes them willing fellow travellers. Left commentators in the 1980s used and produced books with title such as the end of work and the jobless future to describe the effects of the microprocessor ‘revolution’. Studies of the labour process in that period rightly identified the loss of traditional skills due to application of such technologies, but did not adequately grasp the ways in which new ones would emerge as employers and employees negotiated the changing technical division of labour. Tasks were augmented, degraded and boundaries redrawn far more than whole jobs and occupations eliminated. As the American economist David Autor (2015) has observed, tasks that cannot be substituted by automation are generally complemented by it Furthermore, that doesn’t even consider the emergence of new jobs that are facilitated by new technologies or by the restless drive of capital to extend the scope of the commodity form into new social and spatial territories. From 1989 to 2017 there was a net gain of 118 million jobs in the US economy. Yet we are now back to extreme pessimism on job creation prospects.

Job trends

Though not perfect – for example some methods use pay as a proxy for skill level – the most plausible way of assessing both the likely patterns of job creation and their vulnerability to automation is to look at current and projected job growth trends. The US Bureau of Labor Statistics produces far more detailed assessments than their UK counterparts. If we examine Table 1, the core trends are reasonably clear.

2016 National Employment Matrix title and code	Change, 2016-26	Median annual wage, 2016 ⁽¹⁾
Total, all occupations	11,518.6	\$37,040
Personal care aides	754.0	\$21,920
Combined food preparation and serving workers, including fast food	579.9	\$19,440
Registered nurses	437.0	\$68,450
Home health aides	425.6	\$22,600
Software developers, applications	253.4	\$100,080
Janitors and cleaners, except maids and housekeeping cleaners	233.0	\$24,190
General and operations managers	205.9	\$99,310
Laborers and freight, stock, and material movers, hand	200.8	\$25,980
Medical assistants	184.6	\$31,540
Waiters and waitresses	182.5	\$19,990
Nursing assistants	164.0	\$26,590
Construction laborers	153.3	\$33,430
Cooks, restaurant	145.3	\$24,140
Accountants and auditors	140.3	\$68,150
Customer service representatives	136.0	\$32,300
Market research analysts and marketing specialists	136.0	\$62,560
Medical secretaries	129.1	\$33,730
Landscaping and groundskeeping workers	123.3	\$26,320
Heavy and tractor-trailer truck drivers	113.8	\$41,340
Maintenance and repair workers, general	112.7	\$36,940
Teacher assistants	109.5	\$25,410

US Bureau of Labor Statistics

There is little sign of an economy dominated by the kind of knowledge and immaterial labour projected in cognitive capitalism perspectives. Job growth is in two main clusters. The dominant trend is the further growth of interactive and personal service roles. Paul Mason says that a future economy can’t generate enough new post-modern servants. Maybe, but it doesn’t have to. Sectors such as health, social care, cleaning and hospitality have been long term sources of growth, with surely unmet needs (such as aged and childcare provision) still to come. The second, smaller grouping brings together higher-level IT and systems roles, general managers and some professional services such as

accountants. Again, these are long-term growth areas. Though we could see some reconfiguring and re-badging around digitalization. These trends represent the widely-observed and continuing polarization in the occupational structure (e.g. Autor 2010), with a shrinkage in the proportion of skilled and mid-level jobs. The exceptions, in this table at least are construction, transport and maintenance. The other growth area, though poorer paid and more precarious has been in warehousing and logistics, typified by Amazon 'Fulfilment Centres'. The basic trends are consistent with evidence closer to home. In their commentary on automation and the UK labour market, the Resolution Foundation (Corlett 2016) charts rising employment shares for high and low-paid jobs in the last 20 years, with a 'hollowing out' on the middle. The largest percentage growth in Scotland has been in low skilled occupations. Including caring, leisure and 'other service' occupations (Scottish Government 2018); while one in four new jobs in the recent period in Ireland has come from hospitality, with next largest sector being construction. (Taft 2018)

The key point about job trends is that they reinforce scepticism about the medium-term impact of automation. The higher end cluster of IT and professional jobs are complex and knowledge-intensive. The larger, lower-end service jobs mostly rest on business models that extract value from forms of labour power drawing on a variety of 'soft skills' and tacit knowledges where human interaction would be difficult or counterproductive to automate. Take waiters and waitresses, who have a 94% automatability rating in Frey and Osborne's study. There may be areas of fast food where automation makes business sense, but for most restaurants, coffee shops and other hospitality contexts the social interaction with the customer is integral to the value proposition. 'Routineness' does not easily map on to such jobs.

There are growth areas, notably truck driving and warehouse picking and packing, that are ultimately more susceptible to robots or AI. However, the key word is *ultimately*. We are decades away from large scale use of the much-hyped driverless vehicles on normal roads. As for picking and packing, robots are expensive and still lack the dexterity and mobility of human labour, which is part of the reason for the absence so far of significant robotisation.

Politics and policy

The problem with UBI is that it is a solution to attachment and job destruction crises that do not exist, at least not in the forms claimed. If UBI is a solution to another problem – for example, the coercive and commodified nature of wage labour under capitalism – okay, but good luck with trying to persuade the electorate with that one. Policy agendas need to be driven by the immediate to medium-term challenges arising from actually existing business models, labour processes and markets. Those challenges are varied and numerous.

The real job or work crises are not expressed in single or simple ways, therefore no one size fits all policy prescription is appropriate. Take one example. There is a need for a more explicit politics of time. While it would be a good idea if most people worked less, a demand for something like a universal four-day week is too blunt an instrument. A sizeable minority of the workforce want to work *more*. Office for National Statistics data reveals that 14.6% of UK workers are doing 'involuntary' part-time work. This is a huge problem that contributes to in-work poverty. The figure has increased by more than 40% in the UK and USA since 2006. At the other end of the spectrum, one in ten workers are 'over-employed' and would like to work less, even if it meant a pay cut. Under-employment is clearly part of rising labour market insecurity, but again this comes in different forms. A report for the RSA (Wallace-Stephens, 2018) estimates that at least one in seven employees experience 'chronically precarious' practices. Importantly, many are full-time employees and the insecurity is in work (poor conditions and treatment) as well as access to it. In contrast, 'acutely precarious' workers, including those on zero-hour contracts or in multiple jobs are more likely to be on non-standard contracts.

It is important to remember the earlier point that most work is not precarious and that most employees enjoy aspects of their work. A contemporary and comprehensive politics of work needs to focus on the things that they do not enjoy, notably stagnant wages, rising work intensity and declining autonomy associated with excessive demands, blurring of work-life boundaries and punitive performance regimes. In many occupations, growing work strain is the result. The problem, as I've argued elsewhere (Thompson and Pitts 2018) is bullshit *in* the job, rather than bullshit jobs.

The key point about the above changes is that none of them are the result of automation, though some (such as work intensity) are sometimes linked to employer uses of new technologies. Chronic and acute precariousness and excessive work demands are the result of choices by employers and governments. Technological catastrophism obscures the agency involved in the making of these choices and the potential agency in unmaking them. Technological determinism inhibits the latter as there only appears to be two choices, luddism or passivity as we wait for automation and UBI.

One positive effect of the work futures debate is that it has created an opening for a renewed, but more realistic policy agenda around job quality. Any job is not better than none. For example, a recent study (Chandola 2017) found that unemployed people who found good quality jobs experienced big improvements in their mental health, whereas those who secured jobs characterised by two or more adverse quality measures had outcomes no different from those who remained unemployed. By more realistic I mean abandoning the illusion that all work can be upskilled and all displaced workers can be retrained for a high skill, digital role. That is simply inconsistent with the patterns of job growth. As Dallot (2018) argues, we have to learn to live with 'low skilled work'. While making it more secure, better rewarded and with improved conditions. Many of these issues can be addressed through labour market regulation, as well as moves to make it easier for unions to organise and bargain. A progressive agenda would use the Government commitment (following the Taylor Review), to be accountable for the quality as well as the quantity of jobs, as leverage for much more ambitious programme that also learns from the Fair Work Commission in Scotland. .

However, many practices that diminish job security and quality are rooted in low-cost, finance-driven business models. Again, post-work, post-capitalist narratives, with their emphases on sharing, collaborative economies, knowledge value and zero-cost reproduction get in the way of realistic, progressive policy agendas. If concentration and financialization of capital are the main drivers of destructive business models. The logical direction are policies aimed at deconcentration through greater competition, regulatory oversight and promotion of more diverse forms of ownership. With respect to financialization, measures need to incentivise long-term investment in human and physical capital (including more robots!), while inhibiting financial engineering distributive returns based on maximising shareholder value. This can include policies to change corporate governance and company law, the nature and frequency reporting mechanisms, de-link executive pay from share

options/prices, limit share-buy backs; as well as creating countervailing stakeholder power, including workers on boards (see Findlay et al 2018 for more detail).

Such policies are part of a wider agenda to re-balance the economy away from a finance-led growth regime towards one that measures and promote GDP and national income in different ways and develop a green new deal that can also be an engine of high quality job creation. Re-balancing also has a spatial dimension. Future job growth will happen, but will be uneven across regions, particularly for high skilled opportunities. Government – at various levels – needs to be much more interventionist in its incentives and investments, particularly as the effects of Brexit ripple through what is left of the UK's manufacturing base.

In conclusion, whether you want to change or replace capitalism, you need to understand the nature of the beast. Claims that we are at a post-capitalist, post-work tipping point do not stand up to scrutiny nomatter how many times Paul Mason or Aaron Bastani appear on the telly or radio.

References

Arntz, M., Gregory, T. and Zierahn, U., 2016. The risk of automation for jobs in OECD countries.

Autor, D., 2010. The polarization of job opportunities in the US labor market: Implications for employment and earnings. *Center for American Progress and The Hamilton Project*, 6.

Autor, D.H., 2016. Why are there still so many jobs? The history and future of workplace automation and anxiety. Summer, *Journal of Economic Perspectives*.

Chandola., T. (2017) Is any job better than no job at all? <http://blog.policy.manchester.ac.uk/posts/2017/08/is-having-any-job-at-all-better-for-your-health-and-wellbeing-than-being-unemployed/>

Corlett, A., 2016. *Robot wars: automation and the labour market*. Resolution Foundation.

Cushen, J., and Thompson, P. 2016. Financialization and value: Why labour and the labour process still matters. *Work, Employment and Society* 30 (2): 352–65.

Cashman, K. (2017) 'The automation grift: the robots are hiding from the data, but not from the pundits, *Economic Questions* 4 April <https://economicquestions.org/automation/>

Danaher, J. (2018) 'Why you should hate your job. Oal News, 1 May <https://iainews.iai.tv/articles/why-you-should-hate-your-job-auid-1075>

Dellot, B. (2018), *When Will We Learn to Live with Low Skilled Work?*, London: RSA 23 August. <https://www.thersa.org/discover/publications-and-articles/rsa-blogs/2018/08/when-willwe-learn-to-live-with-low-skilled-work>

Dews, C.J. (2015) Post Capitalism and the Rise of the Collaborative Commons, <https://medium.com/basic-income/post-capitalism-rise-of-the-collaborative-commons-62b0160a7048>

Findlay, P. and Thompson, P., 2017. Contemporary work: Its meanings and demands. *Journal of Industrial Relations*, 59(2), pp.122-138.

Fndlay, P., P. Thompson, C. Cooper and R. Pascoe-Deslauriers (2018), *Creating and Capturing Value at Work: Who Benefits?* Chartered Institute of Personnel and Development, *Research Report Parts 1 & 2*, London: CIPD, January.

Fortune Magazine (2019) The Global 500, <http://fortune.com/global500/> .

Foster, J., and McChesney, R. 2012. The endless crisis: How monopoly-finance capital produces stagnation and upheaval from the USA to China. New York: Monthly Review Press.

Frey, C.B. and Osborne, M., 2013. The future of employment. *How susceptible are jobs to computerisation*.

Graeber, D. (2018), *Bullshit Jobs: A Theory* (New York: Simon and Schuster).

Hebson G, Rubery J and Grimshaw D (2015) Rethinking job satisfaction in care wLooking beyond the care debates. *Work, Employment and Society* 29(2): 314–330.

Lacity, M. and Willcocks, L.P., 2018. *Robotic process and cognitive automation: the next phase*. SB Publishing.

Newsome, K., Taylor, P., Bair, J. and Rainnie, A. eds., 2015. *Putting labour in its place: labour process analysis and global value chains*. Palgrave.

Scottish Government (2018) Technological Change and the Scottish Labour Market.

Smith, Y. (2018) Whole Foods Becomes Amazon Hell Foods as Employees, Managers Quit, Cry on the Job....and These People Want to Run Your Healthcare? 2 Febryarym Naked Capitalism <https://www.nakedcapitalism.com/2018/02/whole-foods-becomes-amazon-hell-foods-employees-managers-quit-cry-job-people-want-run-healthcare.html>

Taft. M. (2018) Looking under the hood of the jobs bonanza', Notes on the Front, 20 November. <https://notesonthefront.typepad.com/politiceconomy/2018/11/looking-under-the-hood-of-the-jobs-bonanza.html>

Thompson, P. and H. Pitts (2018), *Bullshit About Jobs*', Blog RSA, 9th July <https://www.thersa.org/discover/publications-and-articles/rsa-blogs/2018/07/bullshit-about-jobs>

Thompson, P. and Smith, C. (2017) 'Capital' and the Labour Process', Smith, I. and Fanelli, C. (eds) *Reading 'Capital' Today*, London, Pluto Press.

- Tomlinson, D. and Bell, T. (2018) Is everybody concentrating? Recent trends in product and labour market concentration in the UK, Londonm Resolution Foundation <https://www.resolutionfoundation.org/publications/is-everybody-concentrating-recent-trends-in-product-and-labour-market-concentration-in-the-uk/>
- Wajcman, J., 2017. Automation: is it really different this time?. *The British journal of sociology*, 68(1), pp.119-127.
- Wallace-Stephens, F. (2018), *Sizing up the Good Work Gap*, London: RSA, 26 July <https://www.thersa.org/discover/publications-and-articles/rsa-blogs/2018/07/sizing-up-the-good-workgap>
- Weatherby, L. (2018) Delete your account|: On the theory of platform capitalism, LA Reviewws of Books, 24 April <https://lareviewofbooks.org/article/delete-your-account-on-the-theory-of-platform-capitalism/#!>