
The resurgence of gig work: Historical and theoretical perspectives

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Abstract

Digital platform businesses primarily utilise on-call contingent workers, using their own tools and equipment, to perform the productive work associated with the supplied service. The expansion of this business model has led some to proclaim that traditional ‘jobs’ will come to an end. Some welcome this development, others fear its consequences for the stability and quality of work – but most see it as driven primarily by technology, and therefore largely ‘inevitable’. This article provides historical and theoretical perspective on the expansion of digitally mediated work, to better understand the range of forces (technological, economic and socio-political) at work. It shows that the major features of platform work were all visible in earlier periods of capitalism, but they became less prominent with the rise of the ‘standard employment relationship’ in the 20th century. The rise and fall of the standard employment relationship is described with reference to the changing context for the labour extraction effort of private employers. A better understanding of the complete range of forces driving changes in work organisation, and a rejection of the assumption that they are technologically determined and hence inevitable, can inform regulatory and political responses to the rise of platform work.

JEL Codes: J01, J08, O33

Keywords

Digital work, gig work, labour extraction, labour regulation, standard employment relationship, work and technology

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Introduction

Platform-based businesses (like Uber and Deliveroo) primarily utilise on-call contingent labour to perform the productive work associated with the supplied service. The seeming success of this business model has led some commentators to proclaim that traditional 'jobs' will come to an end. Instead of being regular employees, workers will support themselves as flexible, free independent suppliers, moving seamlessly from one job (or 'gig') to another, utilising digital technology to connect with purchasers of their services. Some welcome this development, others fear its consequences for the stability and quality of work – but most see it as a process driven primarily by technology and consider it largely 'inevitable': opposing the gig economy is as fruitless as the efforts of Luddites to stop the steam engine and the spinning jenny. 'To bet against Uber is to bet against the future' is the blunt summation of one technology guru, Paul Barter (cited in Nicoll, 2016).

Some perspective is needed to better understand what is actually new about digital platform businesses and to distinguish between the technical innovations they utilise and the changes in work organisation those business models introduce. As argued by Quinlan (2012), Finkin (2016) and Valenduc and Vendramin (2016), the major organisational features of digital platform work – contingent or on-call labour, piece-based compensation and the requirement that workers provide their own capital equipment – are not new at all. These practices are as old as capitalism, perhaps even older. The creation of more precarious jobs, including those associated with digital platforms, reflects the evolution of broad social relationships and power balances, as much as technological innovation in its own right. And the onward march of technology is neither neutral nor exogenous: what kinds of technologies are developed, how they are implemented and how they affect work, all reflect the decisions and interests of competing constituencies. An analysis of these social and power dimensions of technology and work organisation must be incorporated into our understanding of the rise of platform work, its consequences and its potential remedies.

This article provides historical and theoretical perspectives on the expansion of digitally mediated work, to aid understanding of the range of forces (technological, economic and socio-political) at work. Section 'Gig work in historical perspective' positions the recent rise of precarious, digitally mediated work historically, showing that the major features of platform work were all visible in much earlier periods. While paid 'employment' is a core defining feature of capitalist production, its specific organisational forms have evolved in response to a wide range of factors (including but not limited to technology). Section 'The rise and fall of the SER' considers more specifically the rise and fall of the 'standard employment relationship' (SER), which became the dominant employment model during the decades of expansion that followed the Second World War. The factors which contributed to the rise and recent erosion of that particular form of employment are identified. In this context, the growing preponderance of 'gigs' (as opposed to permanent jobs) can be seen as a reversion to previous practices, not something fundamentally new. Section 'Gig work and the logic of labour extraction' then considers both the rise and fall of the SER in light of the ongoing preoccupation of private employers with profitably extracting acceptable levels of work effort from their employees; this challenge is inherent in the nature of paid employment, since employers must convert purchased labour time into profitable output of exerted labour services. The reversion to more precarious or contingent forms of employment can be understood as a response by

employers to changed economic and social conditions within which that labour extraction function is performed; technology is just one of those new factors. The conclusion of the article considers the implications of this analysis for strategies to respond to the insecurity and inequities of digital platform work. A better understanding of the complete range of forces driving these changes in labour practices, and a rejection of the assumption that they are technologically determined and hence inevitable, can inform strategies for regulating or resisting their worst aspects.

Gig work in historical perspective

All digital platform businesses perform some kind of matching function: connecting participants who then engage in some form of exchange (directly or indirectly). Advances in the technology of networking and matching underpin the emergence of the far-reaching marketplaces developed by the most successful digital platforms. Once a particular platform attains a leading position in its market, strong economies of scale and scope in networking tend to reinforce its dominance.

Matching platforms can be divided into two broad categories: those which facilitate the exchange of assets and those which facilitate actual production (Farrell and Grieg, 2016). Platforms which facilitate actual work and production have become common in several sectors, including transportation and delivery, odd jobs and miscellaneous tasks, and many forms of digital work (such as programming, writing, translating or design).¹ Productive labour performed through this class of digital platform typically incorporates the following five broad organisational features:

1. Work is performed on an on-demand or as-needed basis. Producers only work when their services are immediately required, and there is no guarantee of ongoing engagement.
2. Work is compensated on a piece-work basis. Producers are paid for each discrete task or unit of output, not for their time.
3. Producers are required to supply their own capital equipment. This typically includes providing the place where work occurs (home, car, etc.), as well as any tools and equipment utilised directly in production. Because individual workers' financial capacity is limited, the capital requirements of platform work (at least capital used directly by workers) are typically relatively small (although these assets can be significant in the lives of the workers who must purchase and maintain them).
4. The entity organising the work is distinct from the end-user or final consumer of the output, implying a triangular relationship between the producer, the end-user and the intermediary.
5. Some form of digital intermediation is utilised to commission the work, supervise it, deliver it to the final customer, and facilitate payment.

Only the last of these common features of platform work has any obvious connection to modern technology: obviously, the digital technologies which facilitate communication, management, supervision and payment have only recently been developed. Even

this defining feature – digital intermediation – could apply to many different strategies of work organisation (including digitised rostering systems, web-based communication and monitoring systems), not just in digital platforms. And certainly none of the other items in the preceding list is new to 21st century digital capitalism. On the contrary, each has been utilised by employers across a wide range of industries, throughout the history of paid employment. On-demand work and piece-work compensation have been commonly applied in many industries, given their utility (in certain situations, not all) for ensuring that employers only pay for work they actually need and receive (Grantham, 1994). Casual, seasonal and contract labour were the predominant forms of paid work as capitalism first emerged and consolidated (Deakin, 2000; Wood, 2002). Quinlan (2012) shows that these practices were even described as ‘precarious work’ in 19th century policy discourse. Similarly, requiring producers to supply their own capital equipment is a long-standing feature of work in many industries, including transportation, resource harvesting, construction and personal services.

Consider, for example, the ‘putting-out’ system common in Europe in the early history of merchant capitalism.² It provides a good historical example of the long-standing application of several flexible and subcontracted work strategies that have again become common in modern digital businesses. In this system (also known as the ‘domestic’ or ‘cottage’ system), a merchant distributed production tasks to paid employees, supplying necessary raw materials and supplies. It was especially widespread in the manufacture of textile, clothing, footwear, cutlery, small furnishings and other simple consumer goods.³ Producers performed work in their own homes, using simple capital equipment which they owned. But the output of their labour was owned by the merchant capitalist who supplied the initial materials; the producers were engaged merely to perform incremental value-adding labour on those materials. Their work was compensated on a piece basis, with payment occurring after the home worker returned the finished product back to the merchant. There was no promise of re-engagement to perform another batch of home production. The merchant took responsibility for selling the finished product to third-party consumers (and in some cases payment was deferred until that sale occurred). Indeed, it was the extending reach of these merchants, and their capacity to sell into increasingly far-flung markets (thanks to improved transportation, integration of markets and currencies, etc.), that facilitated the expansion of this flexible new form of work organisation. Except for the absence of digitised systems for coordinating, supervising and compensating work, this business model is quite comparable to those of modern digital platforms.

The triangular relationship between producer, end-consumer and intermediary typical of digital platform work (Stewart and Stanford, 2017) also has many historical precedents. This triangulation obscures the relationship between the intermediary and the workers who perform the productive labour; in the modern context, it allows employers to inhabit a legal ‘grey zone’, where it is not clear whether producers are workers, contractors or self-employed (Johnstone et al., 2012). This ambiguity has so far allowed digital platforms to evade normal obligations imposed on traditional employers – although that immunity is being contested on many fronts. But this blurred intermediate position is hardly novel: it has been typical of many previous business models throughout the history of capitalism.

Indeed, businesses in many circumstances have long preferred to constitute their productive workers as ‘contractors’ or nominally independent producers, rather than strictly defined ‘employees’, for obvious economic and legal reasons: avoiding entitlements or benefits normally paid to employees, evading the impact of regulatory standards that apply to employment (such as minimum wages or limits on hours of work) and transferring risk for fluctuations in demand conditions to producers. In historical perspective, labour contracting and subcontracting practices were the predominant form of paid work in early capitalism until later in the 19th century (Deakin, 2000; Steinfeld, 2001), even in heavy industries such as iron production (Zmolek, 2013). Only with the advent of more regularised and centralised production technologies, along with social and legal reforms which required more reciprocity in the relationship between employers and workers,⁴ did the practice of permanent waged employment extend its reach:

It was only with the intensification of labour discipline from the late eighteenth century onwards that forms of employment based on wage labour as opposed to independent contracting in its various forms, become widespread. (Deakin, 2000: 33)

Labour hire and temporary staffing businesses, which also have a long (pre-digital) history, are another incarnation of employer efforts to subcontract labour and hence evade the risks and responsibilities associated with permanent paid employment. This model similarly exploits the intermediate and ambiguous legal space between producers and end-users. Waged work in many agricultural and industrial applications was commonly organised through nominally independent subcontractors or ‘gangmasters’ in the British and continental economies, through much of the 19th century (Brass, 2004).⁵

Strategies of outsourcing, contracting and subcontracting, therefore, have maintained a continuous presence throughout the history of capitalism. And this general practice remains important in many non-digital industries, including resource harvesting (like lumbering and fishing), hairdressing and other personal services, cleaning, maintenance and repair activities, and creative work like writing, arts and design (MBO Partners, 2016). In many of these schemes, producers are paid on ‘consignment’ from revenues generated when their output is finally sold by the intermediary – similar to the payment systems used by platform businesses. The triangular structure of subcontracting is also often associated with the requirement that workers provide their own tools and equipment (another feature of modern platform work).

Thus, apart from the specific nature of digital methods of communication, work allocation, supervision and payment, the work practices and relationships embodied in modern digital platform businesses do not seem ‘new’ at all. This historical perspective allows us to reconsider whether and how the business model and work organisation strategies utilised by modern digital platforms are indeed ‘innovative’. Consider the well-known case of the ride-hailing service Uber (and similar businesses like Lyft).⁶ This business has successfully displaced traditional taxi work on the strength of an effective digital dispatch system – whereby clients can hail a ride (and pay for it) through an app on their smart phones, with useful features that include being able to track the location of their car online. Consistent with long-standing subcontracting

strategies (Johnstone et al., 2012), Uber defines its drivers not as employees but rather as self-employed producers.⁷ Yet, Uber sets the fare and route, collects payment from the customer through its online app (cash payments for Uber rides are not permitted in most jurisdictions), supervises and where necessary disciplines drivers and then pays drivers a portion of revenue based on pre-determined distance and time factors. The actual production process is no different from a traditional taxi: a worker collects a passenger and delivers them to a different destination. The online hailing app is more convenient, for many users, than manually hailing a taxi, or phoning a dispatch office. But it is certainly possible for traditional taxi services to utilise digital dispatch systems (including web-based and smart-phone systems) without adopting the same subcontracting labour strategies as Uber.⁸

What really distinguishes Uber from traditional taxi companies, therefore, is the organisation of work within its service, not the technology of production. Uber drivers provide their own vehicles, pay for all related expenses (including amortisation, fuel and maintenance) and are compensated by Uber on a per-fare basis, with no guarantee of hourly or daily income. Uber drivers incur the full costs of operating their vehicle (like taxi owner-operators), but also lose the fees deducted from their fare revenue by Uber (like waged taxi drivers). This model has allowed Uber to appropriate profits from provision of a taxi-like service, but without the capital outlays associated with either owning or operating vehicles, or purchasing licences/medallions.⁹ Centralised control over its proprietary dispatch application, which drivers need to find customers, is the basis for its claim to this revenue – just as the merchant’s centralised capacity to connect home-made goods with final purchasers was the basis for its claim to a margin of total revenues under the putting-out system.

The analogy between modern digital platforms and the intermediated or subcontracted production practices of earlier centuries extends beyond the organisation of work. There are other parallels between the rapid expansion of digital businesses like Uber, and the rise of other subcontracted models (like the putting-out system) centuries earlier. Recall that the putting-out model itself supplanted an earlier, once dominant production system – small-scale workshop-based manufacturing under the guild system – just as Uber has displaced traditional taxi businesses. The motives for organisational innovation, and the means by which that transition was accomplished, are surprisingly similar (see Table 1).

As with Uber, the putting-out system entailed no fundamental change in the actual process of production: the tools and techniques used in home work were no different than those used in the workshops of the guilds. The putting-out model was developed by merchant capitalists largely to subvert restrictions on entry imposed by the guilds, which allocated particular regional markets to authorised suppliers. In a similar frontal attack on regulation, Uber’s strategy has been premised on an effort to sidestep municipal rules limiting entry of taxi services;¹⁰ the company has also seized the opportunity offered by its platform to avoid taxes and rules governing minimum wages or hours of work. In both the putting-out system and modern ride-hailing, workers provide the capital used directly in production. Of course, the intermediary business must also make a capital investment, but it is small relative to the total capital used in production, most of which is supplied by the producers. In the putting-out system, the merchant’s investment consisted of

Table 1. Ascendant regimes of work organisation.

	From guild manufacture to putting-out	From taxi fleet to Uber
Technique of production	No change: small-scale manufacturing and processing	No change: driving a passenger in a vehicle
Location of production	Producer's home	Producer's vehicle
Direct capital	Supplied by producers: small-scale machines and tools	Supplied by producers: vehicles
Organisation of production	By the intermediary: putting-out merchant	By the intermediary: digital platform operator
Intermediary's capital investment	In raw and semi-processed materials, and marketing infrastructure	In software and computing capacity, and brand awareness
Source of intermediary's power	Unique ability to 'make market': selling products to dispersed markets	Unique ability to 'make market': connecting drivers with passengers
Source of labour	New entrants	New entrants and workers displaced from taxi jobs.
Disruptive impact	Break restrictions on entry and scope of marketing imposed by guilds	Break restrictions on entry imposed by taxi licensing; avoid normal tax obligations and labour standards faced by taxi businesses
Appropriation of surplus	Through ongoing production and sale	Through ongoing production and sale, capitalised through financialised strategies

Source: Author as described in text.

purchases of intermediate materials and developing the marketing infrastructure to ship finished goods to relatively far-off markets; in Uber's case, it consists of software and computer capacity to run the dispatch and payment system, as well as marketing to promote brand awareness among consumers.

One novel feature of the business model of modern digital platforms is worthy of final note. In both putting-out and modern digital platforms, the intermediary business extracts a surplus over time from the ongoing production and sale of the product or service. But in the modern context, entrepreneurs are able to capitalise that surplus up front in the form of large stock market valuations – and then monetise those gains through public offerings, options, and other financialised strategies. In this regard, the practices and incentives of financialisation have both motivated and facilitated the rapid innovation and expansion of these businesses. There is reason to doubt the long-term sustainability of these sky-high platform valuations; equity markets often overshoot in their judgments of the profitability of novel businesses, carried along by manias and bubbles regarding new investing fads. But in the meantime, these financialised strategies certainly facilitate the accumulation of vast stockpiles of apparent wealth in the hands of businesses that, at their foundation, engage in fairly mundane, low-tech production (like rides, deliveries and odd jobs).

The rise and fall of the SER

Other than the use of digital technology to facilitate work allocation, coordination and compensation, there is thus little ‘new’ about the labour practices of digital platform businesses. The main aspects of their work organisation – on-demand work, piece-work compensation, home work and a triangulated relationship between producer, intermediary and end-user – are visible in long-standing practices of private businesses stretching back through the history of capitalism. The central labour relationships utilised by digital platforms can thus be better understood as a return to previous practices. This conclusion, however, begs another question. Why did those practices become *less* common for a period of time in the 20th century, despite their long historical pedigree? And why did employment, for a while, come to be associated with a different, more stable set of relationships and practices?

In contrast to the precarious, tumultuous world of work in earlier centuries, employment during much of the 20th century offered a more regularised, predictable arrangement – one more favourable for the economic security of those performing the work. This more stable system has come to be known as the ‘standard employment relationship’ – although it was only ‘standard’ for a circumscribed portion of the history of capitalism and can now be understood as an historical exception. Its origins are visible in the growth of centralised production in larger factories beginning in the 19th century, but it did not become a dominant template for work organisation until well into the 20th century. In the present era, the features of the SER are clearly receding – but that reversal is experienced more broadly than in just the limited world of digital platforms.

Cranford et al. (2003) and Bosch (2004) usefully catalogue the major defining features of the SER. Workers would typically work for just one employer, year-round, usually on a full-time basis, on the employer’s premises and utilising capital equipment supplied by the employer. The term of employment was indefinite: workers were rarely guaranteed ‘jobs for life’, but the mutual expectation was that employment would continue unless some intervening force (such as a downturn in the employer’s business or egregious misperformance by the worker) caused the relationship to be terminated.

Over time, labour market institutions evolved to reflect and reinforce the SER as the normative benchmark of employment practice. Labour laws defined rights and responsibilities associated with employment, on the assumption that a ‘job’ entailed certain reciprocal expectations of fairness and stability. Trade union and collective bargaining laws and practices were based on similar assumptions of a stable, cohesive workforce, congregated at a central location (the enterprise). Social programmes and employment benefits also came to be based on the assumption that paid work would take a form compatible with the SER through mechanisms like social security contributions collected from payrolls, and entitlements, for example, to pensions or unemployment insurance, contingent on periods of stable employment. In short, the SER reflected an understanding that extended well beyond the specific features of a given job, to incorporate a broader conception of social security:

[The SER] is best seen as a state of security in employment that is established through a diffuse set of institutional constraints, comprising institutions such as labour law and policy, social security, family policy, taxation, and employment policy. (Vosko et al., 2009: 10)

Employers also experienced some benefits from the SER, including stability in work organisation, the ability to undertake more intensive production planning and institutional bounds placed around collective action by workers (Bosch, 2004).

Even at its peak, however, and despite being buttressed by these complementary legal and social institutions, the SER was never universal. It is important, as Millar (2017) notes, that analysts of modern precarity do not uncritically elevate former practices as a universal, normative goal. Women, immigrant or racialised workers, and workers in numerous sectors of the economy (especially decentralised, highly competitive service sectors such as cleaning or hospitality) were far less likely to attain stability and permanency in their work (Vosko et al., 2009). Indeed, the SER was always gendered, in the sense that the incomes earned by the core workforce in permanent, full-time positions were understood to constitute a ‘family wage’: sufficient to support the (assumed male) worker’s entire family, including his spouse (who, if engaged in paid employment at all, would not expect the same compensation or entitlements).

Economic and labour historians have catalogued factors which together help explain the rise of the SER as the dominant form of work organisation – beginning in the later decades of the 19th century and peaking during the postwar ‘Golden Age’ expansion in the industrialised countries.¹¹ Technology certainly counts among these key causal forces. The development of centralised technologies of mass production (especially in manufacturing), accelerating with the application of Fordist assembly line techniques, disrupted previous employment models. Capital requirements were beyond the reach of decentralised producers. And the operation of large facilities, with their intense internal division of labour, required the reliable presence of a consistent, disciplined workforce. The attendance and performance requirements of capital-intensive enterprises made it too risky to allow workers choice or discretion in working hours. Similarly, the job-specific skill requirements of mass production technologies enhanced the benefits to employers of a stable workforce, thus encouraging them to offer permanent jobs.

In addition to technology, however, broader macroeconomic and political-economic forces motivated the expansion of the SER, especially after the Second World War (Kalleberg, 2009). With the engine of capitalist accumulation firing on all cylinders, and governments reinforcing expansion through Keynesian full-employment macroeconomic policies, postwar unemployment was low. This created a stronger incentive for employers to recruit and retain workers with promises of stable employment – rather than assuming that contingent or subcontracted labour would be available whenever and wherever needed (Grantham, 1994). The SER was also reinforced by political imperatives. For various domestic and global political-economic reasons, employers and governments in most OECD (Organisation for Economic Cooperation and Development) countries felt compelled to offer a more attractive compromise or social contract with workers. Norms about what constituted fair treatment on the part of employers changed: workers came to expect stable employment and associated entitlements and benefits as normal features of work. The rise to predominance of the SER paralleled the corresponding rise of a broader, redistributive understanding among employers, the state and workers, reflecting the unique conjuncture of economic, political and geopolitical circumstances of the postwar era.

Appreciating the historical and political-economic specificity of the SER provides a context for understanding the more recent unwinding of many of its typical features and practices. This unwinding is visible in many parts of the economy – not just among digital platform businesses. Indeed, evidence suggests that as little as half of existing paid work in developed Anglo-Saxon economies (such as the US, Australia, and Canada) still occurs within the confines of the SER model (Lewchuk et al., 2013; Independent Inquiry into Insecure Work, 2012; Stanford, 2016); precarious or contingent work in a multiplicity of forms (including part-time, temporary, casual, labour hire, independent contracting and marginal forms of self-employment) accounts for the rest.¹² The factors which supported the rise of the SER have largely reversed direction, helping to account for the generalised resurgence of precarious work. This certainly includes the direction of technological change – and not just the development of web-based platforms (Howard and King, 2008). The growing relative importance of services industries (many of which, not all, are characterised by smaller scale production), and the decentralisation of other kinds of production (reflected in the shrinking average size of enterprises), have contributed to less capital-intensive, smaller scale production in which employers may worry less about recruiting and retaining a stable workforce.

More broadly, communications technology facilitates the vertical disintegration of production processes, with consequent outsourcing of multiple sub-functions to dispersed, smaller firms (Weil, 2014). Even the technology of surveillance and performance monitoring has likely contributed to the growing precarity of work: as it becomes cheaper and more effective for employers to monitor employee performance and obedience through increasingly intrusive forms of technology, they face less compulsion to provide positive inducements to workers to elicit performance (like permanent work or superior wages).

However, the erosion of the SER and the expansion of more precarious labour practices cannot solely, or even mostly, be seen as a technology-driven story. Broader macroeconomic and political-economic forces were important to the ascendance of the SER in the postwar era; those forces, too, have since reversed course dramatically, facilitating the return to more precarious work practices. With the advent of neoliberal macroeconomic management, full employment was abandoned as a guiding goal, replaced by an explicit commitment to restoring discipline to labour markets through the recreation of ‘equilibrium’ cushions of unemployment. Labour market slackness has become a more-or-less permanent feature in industrialised countries (particularly since the global financial crisis), and this contributes to the expansion of precarious work in at least two ways. Employers are less worried about being able to hire labour when necessary, and hence one key motive for offering permanent SER-type positions disappears. Workers are compelled by perpetual unemployment, combined with retrenchment of income protections for unemployed people, to accept precarious work. Regulatory structures, especially in the Anglo-Saxon economies,¹³ have permitted and facilitated the expansion of precarious practices such as irregular shifts, zero-hours contracts, the elimination of rules regarding lay-offs and severance requirements, and freedoms for labour hire companies. Those regulatory structures, in turn, reflect an employer-friendly evolution in the broader political and cultural world, which also influences employment norms and expectations. In contrast to the peak of the postwar Golden Age, when workers’ demands for improved protection

and compensation were broadly ratified, modern political culture promotes the idea of a ‘risk society’ (Gottfried, 2014), in which having a job is seen as a privilege.¹⁴ Other features and practices of the neoliberal economy – including the vertical disintegration of supply chains, the intensification of franchising, the ubiquitous outsourcing of business functions, and the development of complex and far-flung global supply chains – have also contributed to the breakdown of the SER and its replacement with more precarious and contingent employment relationships.

In sum, both the rise of the SER as a benchmark for postwar employment relationships and its subsequent erosion under neoliberalism reflect the bigger shifts in the broad political-economic balance of power within the industrialised economies. Whether at the level of individual firms, industries or the macroeconomy, employers are less constrained in their ability to organise work to minimise their risks and responsibilities and optimise their profits. In this broader context, the use of precarious work practices within digital businesses can be understood as just one dimension of a broader shift in capitalist employment relations.

Gig work and the logic of labour extraction

Armed with this longer run perspective on the rise and fall of the SER, we now propose a more integrated analysis of the factors contributing to the resurgence of precarious work practices – and also the constraints that may limit their expansion, even in a digital world. This section will integrate preceding historical insights regarding the evolution of work practices under capitalism into a more holistic theoretical model focusing on the underlying labour extraction problem which confronts every employer (Gintis, 1976). Paid employment is premised on an individual performing work for another entity, in return for compensation. Inherent in this relationship is the necessity for the employer to direct and supervise the work activity of hired help, to ensure that it is appropriately effective and productive. This challenge arises from the fact that the employee is not working ‘for themselves’, but rather to produce value-added which is owned by their employer, and ultimately sold for the employer’s benefit (not directly the workers’). The transition from the autonomous work of independent producers to the supervised work of paid employees required the development of systems of management, supervision, incentive and discipline so that employers could attain optimal effort and productivity from their waged employees (Burawoy, 1979; Thompson, 1968).

This labour extraction challenge is complicated by the central fact that what employers typically pay for (the time of their employees) is distinct from what they want (exerted labour effort). Labour intensity can be defined as the amount of attention, energy and exertion that workers devote to their tasks, up to some limit imposed by their mental and physical stamina. From the advent of wage labour in the early years of industrialisation to the present, employers have addressed the challenge of labour extraction through varying management, technological, regulatory and cultural practices that maximise labour intensity, subject to the broader constraints and circumstances within which their businesses operate. The evolution of management labour extraction strategies helps to explain the changes in employment relationships that were surveyed above; it also helps in understanding the strengths and limitations of ‘gig’ work arrangements.

Maximising unit profit depends, with unit price and materials costs held constant, on minimising wage payments, maximising work intensity (i.e. how effectively paid work is translated into exerted labour effort) and enhancing the technical efficiency of the production process. But wages, labour intensity and the ultimate efficiency of production are not mutually independent, so the employer's challenge becomes a complex juggling act – trading off the various levers which influence exerted effort, realised productivity and ultimate bottom-line labour costs. There can be no assumption that paying the lowest possible wages will maximise profits, if poor compensation negatively impacts labour intensity; this relationship provides a logical basis for employers to pay wages higher than market-clearing 'competitive' rates, as emphasised in the literature on efficiency wages.¹⁵

Theorists of the labour extraction problem emphasise a broad range of factors shaping employer strategies for minimising unit labour costs. There is always an embedded trade-off between 'carrots' and 'sticks' in management's decisions (Gordon, 1996): employers will generally choose some combination of positive rewards for performance (through gain-sharing or bonus-based compensation schemes, above-average wages to elicit loyalty and effort, implicit or explicit guarantees of stable employment, etc.) and negative punishments for disobedience or unacceptable performance.¹⁶ The effectiveness of the latter option depends on several further factors: including the attitudes and expectations of workers, the cost of supervision, the legal ability to discharge workers and the ultimate loss that discharged workers experience as a result of being fired. That 'cost of job loss', in turn, is a composite outcome of several other factors, including how quickly a discharged worker can find alternative work, the extent to which their earnings in a new job match former wages and any income support payments they receive in the interim. Ultimately, the power of employers to control production is derived from the scarcity of good jobs so that workers always have something to lose if their relationship with their employer collapses (Bowles et al., 2005).

Technology obviously shapes the labour extraction effort in many ways. But technology always interacts with the social organisation of work – not just how it is applied, but even how it is developed in the first place, with employers directing innovation to tasks most compatible with their interest in profitable labour extraction. In a strictly controlled Fordist production setting, where work is fragmented into specific tasks, output may be somewhat less dependent on the labour effort exerted by engaged workers (since output is determined largely by the pace of the machinery); this might reduce the premium that employers feel compelled to pay to elicit effort (Braverman, 1974). At the same time, complex, capital-intensive production systems require considerable labour discipline (measured in attendance, attention, etc.), so the labour extraction problem is not 'solved' by the mere presence of an assembly line. In very complex worksites, the absence of a single worker might disrupt the work of hundreds of others; this enhances workers' capacity to demand premium pay for requisite discipline and reliability. Centralised production technology can thus empower workers' bargaining position or undermine it.

The decreasing average size of enterprises in the modern economy could be facilitating a shift towards fragmentation and hence more casualisation of work (Sawyer, 2000). Technical changes which allow for greater decentralisation of production with relatively limited amounts of direct capital (including some kinds of digital work) may also be facilitating the return to a more precarious model of work organisation (Howard and King,

2008), including home-work systems (which require workers to supply their own capital). Employers often ‘sell’ home-work arrangements on the basis of supposed convenience or flexibility for workers, but in practice they are an effective mechanism for shifting capital costs to workers, and also for extending the reach of paid work time into greater portions of a worker’s day. On the contrary, technological advancement is normally associated with the accumulation of capital and a rising capital–labour ratio, and this should constrain the applicability of home-work systems. Many jobs clearly require more capital than individual workers could be expected to provide. Moreover, production may require proprietary technical knowledge which employers are unlikely to disburse, and most production still requires workers to gather in a specific workplace at a specific time. So while some work in the modern economy can be performed by workers operating with small amounts of invested direct capital equipment (and these are the jobs where the digital platform business model would seem most promising), this trend is not universal.

The technology of monitoring and supervision also affects employers’ choices regarding the trade-off between carrots and sticks in labour extraction (Gordon, 1996; Green, 2006). If it is expensive to monitor workers (e.g. by having to hire human supervisors, who in turn need to be supervised themselves), and difficult to punish or fire those who do not meet performance benchmarks, then employers will be relatively more disposed to use positive incentives to elicit effort, loyalty and retention. On the other hand, if supervision is inexpensive (e.g. thanks to automated monitoring technology), and workers can easily be disciplined (e.g. casual or temporary workers can simply be non-renewed, with no costs of dismissal or severance), then the ‘stick’ looks relatively more attractive. One oft-overlooked aspect of the technology of digital platforms is especially relevant in this regard. Many platforms (including Uber and Airtasker) utilise an online customer ‘ratings’ system to develop performance profiles of their associated producers. Producers receive evaluations from individual customers; the platform business retains the right to discharge producers whose ratings are considered inadequate. For the platform, this allows supervision and performance management to be outsourced, at low cost, to customers. For workers, of course, the system introduces enormous risks from unfair, arbitrary or inaccurate customer evaluations, and a compulsion to tolerate abusive or exploitive behaviour from customers for fear that their ratings may be adversely affected by complaining or resisting.¹⁷ But so long as it is legally permissible to discharge workers on the basis of unverified consumer survey responses, this ratings system will be a powerful and inexpensive weapon in employers’ labour extraction arsenal.

The role of piece-work compensation in employers’ labour extraction efforts is worthy of additional discussion, given the importance of piece-work in digital platform businesses. On one hand, piece-work compensation seems like an obvious solution to the challenge of converting paid work time into exerted labour effort: the worker is only paid for production that actually occurs. This explains the consistent interest in these models by management theorists throughout the history of capitalism – from the dawn of Taylorism, through to modern digital applications. On the other hand, there are limitations to piece-work that constrain its usefulness for most jobs. For maximum impact, piece-work compensation must be calculated at the individual level, making the system unwieldy in jobs which require cooperation among teams of workers.¹⁸ Moreover, in most jobs, labour output is difficult to measure – more complicated than counting

widgets produced in an hour (or fast food deliveries in an evening). This measurement problem is especially acute where quality of output is important, not just quantity. Finally, most jobs involve a variety of tasks which must be performed under changing circumstances. In these conditions, both workers and managers need flexibility and the capacity to exercise judgement and problem-solving skills, rather than blind pursuit of a particular performance indicator. For all of these reasons, while piece-work has remained an important tool in the kit of employers, its applicability has been limited to a relatively small subset of the total work performed in a modern economy.

This gives cause to question the extent to which digital platforms, with their core reliance on piece-work compensation, could indeed spread throughout the economy. The limitations of piece-work compensation are indicated by odd-job digital platforms such as Taskrabbit or Airtasker, through which the end-user defines a job, and workers then bid for the work. But it is often difficult to fully and precisely describe the work that the end-user desires. The incompleteness of the subsequent (implicit) contract between user and producer gives rise to many disputes over whether a given job was completed adequately or completely.

The broader macroeconomic, political-economic and regulatory forces discussed above also enter the labour extraction calculation in several ways. The determination of wages clearly reflects the influence of regulatory institutions (such as minimum wage laws, the state of trade unionism and collective bargaining and other wage-regulating practices and institutions). In the context of modern digital platforms, the willingness of regulators to apply existing minimum standards (like minimum wages) to work performed through platforms has been spotty – partly because of the indeterminate status of platform-based producers in the eyes of traditional labour law and partly because many regulators welcome the ‘disruptive’ effect of digital platforms on regulatory levers to which they were not fully committed to in the first place. The regulatory environment also affects management efforts to boost labour intensity through threats of job loss, which depend on the legal powers of employers to monitor workers in increasingly intrusive ways, and discharge those with unacceptable performance. Social policy also impacts this process through the extent to which discharged workers receive income support while seeking another job.

The overall state of the labour market is another macro-level factor influencing employer labour extraction strategies. Wage pressures moderate in response to chronic excess labour supply – the sort that has been endemic in OECD countries over the past decade and more. But permanent unemployment and underemployment affect the labour extraction problem in other ways. When unemployment is more severe, the cost of job loss will be higher (since it will take workers longer to find a new job), and workers in general will feel greater compulsion to meet employers’ workplace demands.¹⁹ Moreover, employers can be more confident of their ability to recruit additional labour when required to meet demand or operational conditions; this facilitates their willingness to utilise casual or temporary employment – including through platform-based models.

The general state of popular expectations regarding work and employment is also relevant, reflecting the big sweep of politics and culture. Effective work organisation requires consent as well as control (Burawoy, 1979; Edwards, 1990). Perhaps the greatest achievement of neoliberalism has been the construction of an attitude, common

among young workers today, that they can expect nothing more from the labour market than an endless series of precarious ‘gigs’.

Conclusion

This article has aimed to place the rise of precarious platform-based work in a broader context, both historically and theoretically. We have shown that the key labour practices utilised by digital platforms (on-call work, piece-work compensation, home work and a triangular contractor or subcontractor relationship) reflect a return to previous work organisation strategies common in earlier periods of capitalism. The unravelling of the ‘SER’ which established a new norm of employment practice, especially during the postwar Golden Age expansion, can be seen as a consequence of the reversal of the macroeconomic, political-economic and technological trends which supported the development of that SER.

The work practices of digital platforms are neither ‘new’ nor driven solely or even primarily by ‘technology’. Certainly, new digital techniques of planning, allocation, supervision and payment are core to the business models of these platforms; for the most part, however, those technologies are simply facilitating the application of long-standing management labour extraction strategies that are as old as capitalism. And the resurgence of precarious work practices – visible across most of the economy, not just among digital platforms – suggests a more generalised erosion of the stability of employment that cannot therefore be interpreted as technologically determined.

Moreover, the rise of platform work has been facilitated by other contributing forces that have little if anything to do with technology. Specifically, the existence of persistent and substantial pools of surplus labour is a prerequisite for this model. The relatively passive state of labour regulation has facilitated the rise of precarious labour practices – and not just through the failure of regulators to ambitiously enforce existing standards, like minimum wages, in the digital economy. The rights of employers to hire and fire at will, to monitor the performance and whereabouts of their workers in increasingly intrusive ways, and to evade normal employment obligations through age-old manipulation of the ‘contractor’ category, have also been essential to the successful implantation of these practices.

At the same time, the foregoing analysis also indicates several ways in which the emergence of digital platforms is likely to confront significant limits in the future – and ways in which determined social pressure could reinforce those limits and curtail the most exploitative aspects of digital platform work.

Producers in digital platform businesses could be afforded more legal protections and bargaining power, including protection against being discharged on the basis of customer surveys; protection against arbitrary and intrusive supervision and disciplinary practices; protection against unilateral changes in compensation; the right to organise and negotiate collectively with the platform provider; and the explicit application of existing labour standards, like minimum wages and basic entitlements. These would limit the capacity of these businesses to dictate terms of engagement with producers and to evade the traditional responsibilities and obligations of employers.

Opening public access to digital marketplaces, treating digital meeting places like a new form of ‘commons’, would reduce the extent to which specific platform firms can translate their monopoly power over specific, popular apps into a dominant position with their

associated producers.²⁰ Strengthening macroeconomic and labour market conditions would constrain the pool of readily available, desperate workers willing to perform on-call menial tasks – whether organised through digital platforms or other, more conventional channels. Repairing and extending the safety net of social protections and income security would also enhance the bargaining power of all workers to demand reasonable, reciprocal treatment from their employers.

A more nebulous but potentially powerful constraint on the labour practices of platform businesses (and other businesses using irregular or subcontracted labour strategies) could come from future changes in broad public attitudes and expectations; the ‘social licence’ of digital platform businesses would be vulnerable in the event that the impacts of their labour practices become the focus for public attention and concern.

What is clear, however, is that workers, citizens and consumers do not actually have to ‘bet against the future’, to reject the model of precarious work that most digital platforms have incorporated. Those practices are not new, and they are not an inevitable result of technology. Rather, they reflect social practices which have been reformed in the past and could be reformed again in the future.

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Notes

1. See also Manyika et al. (2016) and Torpay and Hogan (2016). Some platforms reflect a hybrid of asset-trading and production work. For example, Airbnb facilitates the rental of existing accommodation (a service which does not, apart from associated brokering and intermediation services, add to gross domestic product (GDP)). But room rentals may also be attached to incremental service provision (housekeeping, preparing breakfasts, etc.) which would indeed qualify as productive labour.
2. Classic descriptions of this practice include Huberman (1936), Simonton (1998), Mantoux (1961) and (Kriedte et al., 1981).
3. The practice was sustained into modern times in some industries, such as Swiss watch-making (Glasmeyer, 2000: Chapter 5).
4. For example, reforms in the late 19th century prohibited punitive practices (such as those described in Great Britain’s Master and Servant Act 1823) which restricted workers’ ability to escape unfavourable labour contracts; this reaffirmed the shift towards modern employment contracts (Steinfeld, 2001).
5. This clear historical antecedent of the modern labour hire industry is preserved even in the name of modern British legislation regulating these practices, the Gangmasters Licensing Act of 2004 (Conford and Burchardt, 2011).
6. Stewart and Stanford (2017) caution that Uber is in some ways atypical of digital platform businesses, but the familiarity of its business model makes it useful as an expository example.
7. This claim that Uber drivers do not work for Uber is being contested in many jurisdictions.
8. Indeed, traditional taxi businesses’ response to Uber’s expansion includes efforts to develop their own digital hailing systems. Some jurisdictions are promoting cooperative or even publicly owned web-based hailing systems as an alternative to Uber.
9. While Uber incurs the cost of operating the dispatch system, this is modest relative to overall revenues – and most taxi drivers are also charged for dispatch services through affiliation with a fleet.

10. There were reasons for limiting the supply of taxi licences. This quota system was not designed to enrich the initial owners of taxi licences, but to ensure that industry participants could generate acceptable levels of income and to provide a channel through which other aspects of the business (such as quality and roadworthiness of vehicles) could be regulated. While the effect of taxi licensing in generating one-time capital gains for a certain category of licence owner seems especially perverse, that discussion and debate over potential changes in regulations should be separate from discussion of Uber's unregulated right of entry to the business.
11. These changes in work organisation paralleled the overall changes in political and institutional practices that accompanied the long rise and fall of successive political-economic regimes (Boyer, 2014; Kotz et al., 1994).
12. Data on the number of workers producing through digital platforms are imprecise, but most research concludes that it is well under 1% of the working population – and thus constitutes a very small proportion of all precarious work (Stewart and Stanford, 2017).
13. Continental European countries have generally retained a stronger set of regulatory requirements, curtailing some of the precarious employment practices that are more common in the UK, North America and Australasia. Thus, Anglo-Saxon economies score much lower in the Organisation for Economic Cooperation and Development's (OECD) employment protection index.
14. The claim that 'there's no such thing as a bad job', made by the likes of former Canadian Finance Minister Jim Flaherty (Fekete and Kennedy, 2012) and US reality show host Mike Rowe (Sunde, 2015), is used to encourage job-seekers to accept any position regardless of the wage.
15. Neoclassical theorists explain efficiency wages as a result of asymmetric information in labour markets (Akerlof and Yellen, 1986). Radical theorists see the problem as arising from the inherent and conflictual relationships associated with wage labour (Bowles et al., 1990; Edwards, 1979: Chapter 7).
16. Spencer (2009) notes that from the outset of capitalism, employers have recognised that 'the carrot of higher wages alone would not be enough to induce the labourer to perform work: there was also a need to subject him or her to some degree of necessity' (p. 21).
17. There is accumulating evidence that customer-driven ranking systems reveal systematic racial biases (Brustein, 2016). Slee (2016) argues that the consumer rankings system does not give accurate information about the performance of platform workers in any event.
18. Of courses, bonuses can be paid to entire teams of workers, but this approach encounters other problems related to how the teams are defined, how output is measured, how individual shirkers are dealt with and more.
19. Campbell and Price (2016) emphasise that precarity is experienced at the level of class, not just by individuals.
20. An interesting but potentially short-lived experiment in this regard occurred in Austin, Texas, which developed its own non-profit ride-hailing application after Uber and Lyft ceased business there in protest against municipal regulations requiring background checks for ride-share drivers (Solomon, 2017). However, the Texas state legislature overturned the Austin ordinance, paving the way for the re-entry of the private suppliers. This reinforces the correlation between digital platform businesses and regulatory evasion (the Austin background check regulations have long applied to conventional taxis).

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