

# Historical and Theoretical Perspectives on the Resurgence of Gig Work

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## I. 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 development and seeming success of this business model has led some commentators to proclaim that traditional “jobs” as we know them 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, utilizing digital technology to connect with the customers who purchase their respective wares or 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 most would therefore consider it largely “inevitable.” Standing in the way of the gig economy is no more feasible than the fruitless 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 which they utilise and the changes in work organisation which those business models also introduce. As authors such as Quinlan (2012), Finkin (2016) and Valenduc and Vendramin (2016) have stressed, 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, in fact, as old as capitalism (or 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 itself 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 will provide some historical and theoretical perspective on the expansion of digitally mediated work, with the aim of better understanding the range of forces (technological, economic, and socio-political) at work. Section II will position the recent rise of precarious, digitally mediated work within a historical context, showing that the major features of platform work were all visible in much earlier periods. While paid work (or “employment,” in a broad sense) is a core defining feature of capitalist production, its specific organizational forms have evolved continuously in response to a wide range of factors (including but not limited to technology). Section III considers more specifically the rise and fall of what has been termed 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 of that particular form of employment, and its more recent erosion, 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 IV 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.

## **II. 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 that have been developed by the most successful digital platforms – and once a particular platform attains a leading position in its market, strong economics of scale in scope and networking (whereby larger networks have a great advantage over smaller ones) 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).<sup>1</sup> Productive labour performed through this class of digital platform typically incorporates the following five broad organisational features:

- i) 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.
- ii) Work is compensated on a piece-work basis. Producers are paid for each discrete task or unit of output, not for their time.
- iii) Producers are required to supply their own capital equipment. This typically includes providing the place where work occurs (their home, their 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).
- iv) 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.
- v) 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. And 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, and others), not just in digital platforms. And certainly none of the other items in the preceding list is new to twenty-first century digital capitalism. To 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 (Wood, 2002; Deakin, 2000). Quinlan (2012) shows that these practices were even described as “precarious work” in nineteenth 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 that was common in Europe in the early history of merchant capitalism.<sup>2</sup> It provides a good historic example of the long-standing application of several flexible and subcontracted work strategies that have become common once again 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.<sup>3</sup> 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.<sup>4</sup> 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 responsibilities and 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 nineteenth 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,<sup>5</sup> did the now-familiar 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, p.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 nineteenth century (Brass, 2004).<sup>6</sup>

Strategies of outsourcing, contracting and subcontracting, therefore, have maintained a continuous presence throughout the history of capitalism. And this general practice (whereby producers are not directly employed by the firms where they perform work) 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).

In other words, 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. Given this historical perspective, we can reconsider how and in what ways 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).<sup>7</sup> 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 on-line. Consistent with long-standing subcontracting strategies (Johnstone *et al.*, 2012), Uber defines its drivers not as employees but rather as self-employed producers.<sup>8</sup> 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 on-line hailing app is more convenient, for many users, than other systems (like 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.<sup>9</sup>

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 amortization, 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 a taxi owner-operator), 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 licenses/medallions.<sup>10</sup> 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, too, 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;<sup>11</sup> 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 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 drawing this historical comparison. 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 capitalize that surplus up front in the form of large stock market valuations – and then monetize 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 good reason to doubt the sustainability of these sky-high platform valuations in the long-term; 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).

### **III. The Rise and Fall of the Standard Employment Relationship**

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 organization – 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, rather than something truly original. This conclusion, however, begs another question. Why did those practices become *less* common for a period of time in the twentieth 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 twentieth century offered a more regularized, predictable arrangement – one more favourable for the economic security and stability of those performing the work. This more stable system has come to be known as the “standard employment relationship” (SER) – although it was only “standard” for a circumscribed portion of the history of capitalism, and can now be understood as an historical exception rather than a universal prototype. Its origins are visible in the growth of centralized production in larger factories beginning in the nineteenth century; but it did not become a dominant template for work organisation until well into the twentieth century. In the present era, in contrast, 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 programs and employment benefits also came to be based on the assumption that paid work would take a form compatible with the SER – including through mechanisms like social security contributions collected from payrolls, and entitlements to particular programs (like 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, MacDonald, and Campbell, 2009, p.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 – and it is important, as Millar (2017) notes, that analysts of modern precarity do not uncritically elevate former practices, despite these gaps and inequities, as a universal, normative goal. Women, immigrant or racialized workers, and workers in numerous sectors of the economy (especially decentralized, highly competitive service sectors such as cleaning or hospitality) were far less likely to attain stability and permanency in their work (Vosko, MacDonald, and Campbell, 2009). Indeed, the SER always embodied a clearly gendered character, 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 they engaged in paid employment at all, would not expect the same compensation or entitlements).

Economic and labour historians have catalogued numerous factors which together help to explain the rise of the SER as the dominant form of work organisation – beginning in the latter decades of the nineteenth century, and peaking during the postwar “Golden Age” expansion in the industrialised countries.<sup>12</sup> Technology certainly counts among these key causal forces. The development of centralized technologies of mass production (especially in manufacturing), accelerating with the application of Fordist assembly line techniques, disrupted previous employment models for multiple reasons. Capital requirements were beyond the reach of decentralized 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; the whole production system relied upon a reliable and consistent labour input. 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 also 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). Permanent jobs and wage increases were responses to these more exuberant labour market circumstances. The SER was also reinforced by political imperatives. For various domestic and global political-economic reasons, employers and governments in most OECD countries felt compelled to offer a more attractive compromise or social contract with workers. In these circumstances, conventional norms about what constituted fair treatment

on the part of employers changed: workers came to expect that stable employment, and associated entitlements and benefits, was a normal feature of work. In this regard, the rise to predominance of the SER paralleled the corresponding rise of a broader, redistributive understanding amongst 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 further 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 U.S., 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 contractors, and marginal forms of self-employment) accounts for the rest.<sup>13</sup> The factors which supported the rise of the SER in the first place have largely reversed direction, helping to account for the generalized 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 characterized by smaller-scale production), and the decentralization 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. Recall that broader macroeconomic and political-economic forces were so important to the ascendance of the SER in the postwar era; those forces, too, have since reversed course dramatically, hence 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 industrialized countries (all the more so since the global financial crisis), and this contributes to the expansion of precarious work in at least two ways. From employers’ perspective, they are less worried about being able to hire labour when necessary, and hence one key motive for offering permanent SER-type positions (avoiding potential labour shortage) disappears. From workers’ perspective, perpetual unemployment (combined with retrenchment of income protections for unemployed people) compels them to accept precarious work despite the absence of guarantees and entitlements that once would have been expected. Regulatory structures (especially in the Anglo-Saxon economies<sup>14</sup>) have permitted and facilitated the expansion of precarious practices such as irregular shifts, zero-hours contracts, the elimination of rules regarding layoffs and severance requirements, freedoms for labour hire companies, and more. 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 which workers should be thankful for.<sup>15</sup> 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.

#### **IV. 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 which have contributed 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 their 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 (Thompson, 1968; Burawoy, 1979).

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). The intensity of labour 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 the application of 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; they also help to understand the strengths and limitations of “gig” work arrangements in a modern setting.

Maximising unit profit depends, with unit price and materials costs held constant, on minimising wage payments, maximising the intensity of work (that is, how effectively paid work is translated into exerted labour effort), and enhancing the inherent (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. In particular, 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 emphasized in the literature on efficiency wages<sup>16</sup>).

Theorists of the labour extraction problem emphasise a broad range of factors which shape employer strategies for minimising unit labour costs. In particular, 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.<sup>17</sup> The effectiveness of the latter option depends, in turn, on several other 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 alternate work, the extent to which their earnings in a new job replace their former wages, and any income support payments they receive in the interim. Ultimately the power of employers to control production is derived from the

fact that good jobs are scarce, and hence workers always have something to lose if their relationship with their employer collapses (Bowles, Edwards, and Roosevelt, 2005).

Technology obviously shapes the labour extraction effort in many ways. But technology always interacts with the social organization of work – not just in how it is applied, but even in 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 (as emphasized, classically, by Braverman, 1974). At the same time, however, complex, capital-intensive production systems nevertheless 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 provides workers with more capacity to demand premium pay for requisite discipline and reliability. Centralized production technology can thus empower workers’ bargaining position or undermine it.

In the present juncture, the decreasing average size of enterprises in the modern economy could be facilitating a shift toward fragmentation and hence more casualization of work (Sawyer, 2000). Technical changes which allow for more kinds of decentralized production to occur with relatively limited amounts of direct capital (including some kinds of digital work) could also be seen as facilitating the return to a more precarious model of work organisation (Howard and King, 2008), including for home-work systems (which require workers to supply their own capital). Employers often “sell” home-work arrangements on the basis of their 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 other hand, technological advancement is normally associated with the accumulation of capital and a rising capital-labour ratio, and this should contrain the applicability of home-work systems. After all, many jobs clearly require more capital than individual workers could be expected to



provide. Moreover, in many situations production requires 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 indeed 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 should not be seen as a universal trend.

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 (for example, 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 (for example, thanks to automated monitoring technology), and workers can easily be disciplined (for example, 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 on-line 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 behavior from customers for fear that their ratings may be adversely affected by complaining or resisting.<sup>18</sup> 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, right through to modern digital applications. On the other hand, there are limitations to piece-work that constrain its usefulness for most jobs in society. For maximum impact, piece-work compensation must be calculated at the individual level, making the system unwieldy in jobs which require cooperation amongst teams of workers.<sup>19</sup> Moreover, in most jobs the output of labour 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 in the economy 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 judgment 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. An example of the limitations of piece-work compensation is provided 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 of a culture of acquiescence among regulators (many of whom welcome the “disruptive” effect of digital platforms on regulatory levers they were not fully committed to in the first place). The regulatory environment also affects management efforts to boost labour intensity through threat 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 supply of labour of 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, too. 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.<sup>20</sup> 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 are relevant as well, reflecting the big sweep of politics and culture. After all, effective work organisation requires consent as well as control (Burawoy, 1979; Edwards, 1990). In this regard 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) are not new, but reflect a return to

previous work organisation strategies common from earlier periods of capitalism. More particularly, the unravelling of the “standard employment relationship” 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 in the first place. Not only should the work practices of digital platforms not be seen as “new,” neither should they be seen as being driven solely or even primarily by “technology.” To be sure, new digital techniques of planning, allocation, supervision, and payment are core to the business models of these platforms; but for the most part, those technologies are simply facilitating the application of long-standing management labour extraction strategies that are as old as capitalism. And since the resurgence of precarious work practices is also visible across most of the economy, not just among digital platforms, this suggests a more generalized 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. And 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 forgoing 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 exploitive aspects of digital platform work. Providing producers in digital platform businesses with 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 organize and negotiate collectively with the platform-provider; and the explicit application of existing labour standards, like minimum wages and basic entitlements) would limit the capacity of these businesses to dictate terms of engagement with producers, and 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.<sup>21</sup>

Strengthening macroeconomic and labour market conditions would constrain the pool of readily available, desperate workers willing to perform on-call menial tasks – whether organized 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 labor strategies) could come from future changes in broad public attitudes and expectations; the “social license” 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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**Table 1**  
**Ascendant Regimes of Work Organisation**

	<b>From Guild Manufacture to Putting-Out</b>	<b>From Taxi Fleet to Uber</b>
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, capitalized through financialized strategies.

Source: Author as described in text.

## Endnotes

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<sup>1</sup> 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 GDP). But room rentals may also be attached to incremental service provision (housekeeping, preparing breakfasts, etc.) which would indeed qualify as productive labour.

<sup>2</sup> Classic descriptions of this practice include Huberman (1936), Simonton (1998), Mantoux (1961), and Kriedte, Medick, and Schlumbohm (1981).

<sup>3</sup> The practice was sustained into modern times in some industries, such as Swiss watch-making (Glasmeier, 2000, Chapter 5).

<sup>4</sup> The legal and regulatory implications of this triangular structure in modern digital businesses is explored in this symposium by Stanford and Stewart (2017) and Minter (2017).

<sup>5</sup> For example, reforms in the late nineteenth century prohibited punitive practices (such as those embodied in Great Britain's "Master and Servant Act" of 1823) which restricted workers' ability to escape unfavourable labour contracts, and this reaffirmed the shift toward modern employment contracts (Steinfeld, 2001).

<sup>6</sup> 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 ; see Conford and Burchardt (2011).

<sup>7</sup> We take note of Stewart and Stanford's caution (2017) that Uber is in some ways atypical of digital platform businesses, but the familiarity of its business model in this case makes it useful as an expository example.

<sup>8</sup> Again, this claim that Uber drivers do not work for Uber is being contested in many jurisdictions.

<sup>9</sup> Indeed, part of the response of traditional taxi businesses 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.

<sup>10</sup> Of course, Uber incurs the cost associated with operating the dispatch system, but that cost is modest relative to the overall revenues of the business – and most taxi drivers are also charged for dispatch services through their affiliation with a fleet.

<sup>11</sup> It is often forgotten that there were reasons for limiting the supply of taxi licenses, and this quota system was not designed in order to enrich the initial owners of taxi licenses. The goal of limiting supply was both 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 the quality and roadworthiness of vehicles) could be regulated. The efficacy of these regulations could be debated (in particular, the effect of taxi licensing in generating one-time capital gains for a certain category of license owner seems especially perverse), but that discussion (and debate over potential changes in those regulations) should be separate from Uber's entry to the business.

<sup>12</sup> These changes in work organization, of course, 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).

<sup>13</sup> Data on the number of workers producing through digital platforms are imprecise, but most research (summarized in Stewart and Stanford in this symposium, 2017) concludes that it is well under 1 percent of the working population – and thus constitutes a very small proportion of all precarious work.

<sup>14</sup> Continental European countries have generally retained a stronger set of regulatory requirements that has curtailed some of the precarious employment practices that are more common in the U.K., North America, and Austrasia. This is evident in the much lower scores attained by the Anglo-Saxon economies in the OECD's employment protection index (OECD).

<sup>15</sup> This attitude is potently exemplified by the blunt folk wisdom that "there's no such thing as a bad job" – a claim made by the likes of former Canadian Finance Minister (Fekete and Kennedy, 2012) and U.S. reality show host Mike Rowe (Sunde, 2015) to encourage job-seekers to accept any position regardless of the wage.

<sup>16</sup> Neoclassical theorists explain efficiency wages as a result of asymmetric information in labour markets; see Akerlof and Yellen (1986). Radical theorists emphasise that the problem arises from the inherent and conflictual relationships associated with wage labour; see Edwards (1979) and Bowles, Gordon, and Weisskopf (1990, Chapter 7).

<sup>17</sup> As Spencer (2009, p.21) notes, from the outset of capitalism employers have recognized 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."

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<sup>18</sup> For example, there is accumulating evidence that customer-driven ranking systems reveal systematic racial biases; see Brustein, 2016. Slee (2016) argues persuasively that the consumer rankings system does not give accurate information about the performance of platform workers in any event.

<sup>19</sup> 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.

<sup>20</sup> Campbell and Price (2016) emphasise that precarity is experienced at the level of class, not just by individuals.

<sup>21</sup> 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 taxi