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LABOUR AND TECHNOLOGY IN CAPITALISM 4.0. AN INTERVIEW WITH URSULA HUWS[1]

by Into the Black Box*

Abstract

From the rise of telehomwork of the Seventies to the burst of platform labour occurred after Pandemic: in this interview with Ursula Huws we cover a fifty-year path of the impact of technologies on labour and social life. Considered one of the most important Labour Sociologist in Europe (and beyond), since the early Eighties Huws tackled the topic of the "social isolation" intrinsic to telehomework, the atomization of society and the risks of encroachment of work on family and social life due to application of new technologies on labour. In the article we travel from the very beginning through to the rise of "cybertariat". We conclude by trying to answer the last crucial question: what next?

*Into the Black Box is a project of multidisciplinary and collective research that adopts logistics as a point of view on contemporary political, economic and social transformations. We conceive logistics not simply as commodities circulation, but rather as a whole biopolitical apparatus that performs spaces, subjects and powers. The black box is the symbol of contemporary management techniques and devices that hide the whole logic of the system to external viewers. Similar boxes are all around us: in platform capitalism, in urban planning, in labour organisation, in State governance. A way to penetrate the opacity of the system is to analyse inputs and outputs, operations and consequences, procedures and resistances. Into the Black Box is composed by Carlotta Benvegnù, Niccolò Cuppini, Mattia Frapporti, Floriano Milesi and Maurilio Pirone. They edited singoularly and collectively many books and articles. Their last book is Capitalismo 4.0. Genealogia della rivoluzione digitale (Meltemi, 2021).

Keywords

Labour, New Technologies, Precariat, Capitalism 4.0, Platforms.

Resumen

Desde el auge del teletrabajo de los años setenta hasta el estallido del trabajo de plataforma ocurrido tras la pandemia: en esta entrevista con Ursula Huws, recorremos una trayectoria de cincuenta años del impacto de tecnologías en la vida laboral y social. Considerada una de las más importantes sociólogas del trabajo en Europa (y más allá), desde principios de los ochenta Huws abordó el tema del «aislamiento social» intrínseco al teletrabajo, la atomización de la sociedad y los riesgos de invasión del trabajo sobre la vida familiar y social debido a la aplicación de las nuevas tecnologías al trabajo. El artículo hace un recorrido por los inicios hasta el surgimiento del «cibertariado». Concluimos tratando de responder a la última pregunta crucial: ¿y ahora qué?

Palabras clave

Trabajo, Nuevas Tecnologías, Precariado, Capitalismo 4.0, Plataformas.

Introduction

Capitalism 4.0 is a pervasive phenomenon. Within this lemma we consider a set of processes among which are the rise of the Information Technology industry (American Gafam - Google, Amazon, Facebook, Apple, Microsoft and Chinese platforms such as Alibaba and TikTok) and the recent rapid growth of "platform capitalism" (AirBnb, Uber, Deliveroo, Helpling, Foodora, Taskrabbit, etc.). The grafting into everyday life of robotics, Internet of Things, Artificial Intelligence and algorithmic dimension characterize our global present particularly since the economic crisis of 2007-2008. This set of elements is profoundly transforming the world of labour, inspiring conflicts on "new terrain" and shedding new light on the reproductive dimension of life.

On closer view, Capitalism 4.0 is far from a disruptive phenomenon raised from nowhere. Rather, it has long roots that could be investigated through the lens of labour and its encroachment on social life. If the general extension of Capitalism 4.0, its flood into different aspects of people life and the increased blurring between "time of life" and "time of work" is undeniable, we should be aware that we can retrace the very origin of all of this to at least forty or fifty years ago. The relation between labour and technology has always been rather conflictual: technology is anything but neutral and this is true for digital technologies too. A closer focus on its pervasiveness in human life show an ambiguous picture of freedom and constraint that can only be fully understood with a gaze on the origin of it, since at least the Electronic Revolution (the so-called Third Industrial Revolution of the fifties and sixties), in order to grasp the graduality that has led us where we are.

In the next pages we talk on this matter with Ursula Huws, focusing not just on the features of "labour 4.0", but also delving into its genealogies and its historical trajectories.

Q1: We would like to start this dialogue with a kind of biographical question. Looking at your astonishing list of publications it seems quite clear that since the beginning of the Eighties your main focus has been the relationship between labour and technology, with a constant attention on women's work. Starting from 1982, in article such as "Domestic Technology: liberator or enslaver?" (published in the journal *Scarlet women*, a magazine set up "to provide a forum for the socialist feminist network"[2]) you were investigating the effects of new technology on the home, certifying how they had failed

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2. https://www.grassrootsfeminism.net/cms/node/577

to liberate women from the role of houseworker. Technology and their impact on common life was the topic of other articles of the Eighties such as *Society at Work: The New Homeworkers* (published by the "Low Pay Unit" in 1984) and *Terminal Isolation: the Atomisation of Work and Leisure in the Wired Society* (chapter in the book *Making waves: the politics of communications* edited by the Radical Science Collective in 1985). In both of them, very beforehand you were facing the new "social isolation" intrinsic to telehomework, reporting the risks of encroachment of work on family and social life: topics which are very important also today, thirty years after your publications.

Teleworking is the focus on a book you edited (with Werner Korte and Simon Robinson) in 1990 titled *Telework: Towards the Elusive Office* (John Wiley & Sons Inc.) and of course of many other articles or chapters of that years (just to make some examples: *The Legal Implications of Telework* still in 1990 —published on "Practical Computing"—; *Teleworking in Britain* published for the "Employment Gazette" in 1994). Among the texts you wrote in that period, particular importance should be deserved to *Teleworking and Gender* (published in 1996 for The Institute for Employment Studies). In the book you first considered the early large scale surveys on teleworking throughout Europe, where was shown that there was "some degree of polarisation between teleworkers with a lower education (who were mostly women) and those with a higher education (who were mostly men)" (p. 20) and were was quite clear that women often "underpaid and undervalued and resent the way in which their work [were] trivialised by the men with whom they live" (p. 26). Then you shown your own research on 188 translators (100 women and 88 men) in a British based company called Wordbank which had teleworkers from 28 European countries. The results showed that teleworking appeared "equally capable both of reinforcing traditional gender roles and of challenging them" (p. 83). Indeed, as you pointed out teleworking were "often chosen precisely because it appear[ed] to offer more autonomy and control over one's working time than work in an office [...]. It is clear, however, that in practice teleworking is often accompanied by precisely the opposite conditions" (p. 84) both for men and women, even though the results "reveal that it is still women who are bearing the greatest portion of the responsibility for childcare" (p. 86).

By the beginning of the new millennium your concentration turns to eWork and digital labour: you have been one of the first to do this starting from *The Making of a Cybertariat: Virtual Work in a Real World* (Monthly Review Press, 2003) on which you already had a global perspective more specify all in texts such as *The restructuring of global value chains and the creation of a cybertariat* (in *Global corporate power,* edited

by Christopher May in 2006. The new proletariat arose by new technologies (indeed *cybertariat,* to which we will return) was one of your inquiring theme, and it is quite meaningful that today we are still talking about it when we consider what we could call the "platform proletariat" or "platfortariat" which has job conditions where social rights or collective bargaining power is kind of terrible.

However, since then on the digital economy kept a pivotal position in your publications among which we finally quote *Labour in the Global Digital Economy* (Monthly Review Press, 2014), your work on European gig economy in the context of the European founded project *Dynamics of virtual work*, and finally your last book titled *Labour in Contemporary Capitalism: What Next?* (Palgrave-Macmillan, 2019).

After this long kind of introduction we reach the question. Could you tell us what brought you to focus on the relationship between technology and labour since the very beginning of your research path? And more in general, could you tell us something more about your research trajectory and about your approach to the topic?

Ursula Huws: My interest in technology was very much influenced by my own experience as a worker. In the early 1970s I was active in the National Union of Journalists, a trade union which represented journalists in print and television but was also expanding into the representation of workers in magazine and book publishing. I first became involved in organizing workers in book publishing, where I was employed, a field where there was very little trade union representation and workers were very low paid, much more likely to be women than in newspaper publishing and including some very low-paid people on self-employed contracts working from their homes as proof-readers, copy-editors, indexers or translators. In order to persuade the union to admit them into membership we actually had to campaign to get some of the rules changed. I therefore became quite active in the union at a national level as well as in the immediate field of book publishing.

At the national level much of the union's strength was based in newspapers, where the NUJ worked closely with other print unions, of which there were many, based on a complex division of labour among highly specialist workers practicing specific tasks related to the 'old' technologies of printing from hot metal. Because newspapers are a highly perishable commodity (each issue becomes redundant within 24 hours) these unions had considerable strength at the workplace —even a short strike of a few hours could 'kill' an issue— and had therefore built up a lot of political strength and high wages, in a form of craft trade unionism closely linked to specific technologies and means of production. Around 1973 or 1974 rumours began to arrive from across the Atlantic

that new computerized technologies were being introduced that would fundamentally challenge this strength by replacing the old hot metal technologies (and others, such as offset litho printing) making many of the traditional 'craft' skills redundant. A subgroup within the NUJ, with which I was connected, decided to send somebody over to the USA to speak to members of the US journalists union at the Washington Post to find out about what was going on. This led to the publication of a pamphlet in around 1975 called 'Journalists and the New Technology'.

In 1976 I moved from London to Leeds, in West Yorkshire, a city which was very much marked by its history in the industrial revolution as a centre of machine tools manufacture and clothing manufacture linked to the wool trade. It was geographically near to cities like Bradford, Halifax and Huddersfield where woollen cloth was woven into cloth or made into carpets. Leeds was where the looms were manufactured that supplied the weaving mills, but also where the finished cloth was made into clothes. In the 1970s, although declining because of offshore production, Leeds still had some of the largest clothing factories in Europe. The skills that made Leeds a centre for the production of looms and sewing machines also made it a centre for the production of other machinery, such as printing machinery. The company I went to work for in Leeds had a publishing division (producing school books) but also several factories making other products for schools (such as desks, paints and canes) as well as a number of large warehouses. It also ran the largest book distribution service to schools in the UK. Its factory workers could be said to have been part of the West Yorkshire working class. However the office workers, of whom there were many, were not unionized. The department where I worked was housed in a large central building with an industrial facility (book binding) on the ground floor and offices upstairs in which many other office workers were also based. We shared various facilities such as an enormous canteen (although different grades of staff were supposed to eat in different parts of it, with variations in the types of food and levels of service provided).

From conversations with other workers in the canteen and in the ladies toilets I discovered that new technologies were also being introduced into many office functions, for example data entry which had previously done by key punch operators (holes were punched into cards in order to feed data into large mainframe computers) was now being entered electronically, using keyboards and 'dumb terminals'. The women who did this work complained of headaches, eye strain and neck and shoulder pain from working at these screens and keyboards all day. I became involved in a union recruitment

campaign to organize the office staff at this company and this turned out to be one of the most important issues for motivating them to attend meetings.

Remembering what we had learnt about the impacts of computerization on news print work, I began to do background research to find out more about the implications of these new technologies on office work more generally. Simultaneously, I was getting involved with a broader city-based network of activists in Leeds including from trade unions, women's groups, tenants associations and other community-based groups, initially brought together via an evening class organized through the Workers Educational Association. In a kind of bottom-up collaborative research exercise, influenced by the ideas of Paolo Friere, the group produced a pamphlet called 'The Economic Base of Leeds' which was very widely read and discussed locally. The network led to several local campaigns which brought together workers and people from the wider community, for example an action around bus transport in which community groups supported the bus workers' demands for improved pay and conditions and the reversal of cuts in services and the bus workers supported the community by taking a form of industrial action in which, instead of going on strike, they provided a free service, refusing to take money from the customers for fares. Building on such victories, we were able to raise money for a 'trade union and community resource and information centre' to provide research and support to local workers' organisations, women's groups and community organization.

This centre opened in 1978 and I was one of the first workers there. Based on my experience in my previous job, I began to do more systematic research on the impact of technology on local jobs and, in 1978, this suddenly became a major topical issue, because of a BBC programme called 'Now the Chips are Down' which suddenly brought the issue of job loss associated with new technology to public attention. Because nobody else had yet done much research about it this meant that I became, overnight, an 'expert' in the field. This made it possible to raise money for research projects that we could use for funding the work of the centre.

Because of my experience organizing home-based workers in book publishing it was possible to see the connections between the ways in which these new technologies were being used in clerical work and the potential for new forms of relocation of work with a digital content linked by telecommunications networks. In 1980-81 I carried out the first study of what came to be known as 'teleworking' and also became interested in the ways in which the same technologies (supported, in the early stages, by satellite links)

were being used to relocate data entry and other low-skill digital work to Asian and the Caribbean ('offshore outsourcing'). Subsequently this became the basis for a large body of work on the role of technology in enabling the development of global value chains, a trend that accelerated sharply after 1989.

Q2: Our second question would like to grasp some aspects of the so-called Industrial Revolution 4.0. Generally speaking, following the front of the *global labour history*, the whole idea of "Industrial Revolution" it seems quite problematic, because it appears that such concept lacks a global gaze and a *long durée* analysis.

If we took for example the British Industrial Revolution, and so the so-called first Industrial Revolution, (which could be identified just by the capital letters, according to the famous incipit of *The unbounded Prometheus* by David Landes), a global perspective on it could shed light on the endogenous crucial factors which allowed it. And so, for instance, as out by Sven Beckert in his *Empire of Cotton. A Global History* (New York, Random House LLC, 2014), you cannot understand the Industrial Revolution if you not also take into account the cotton economy plantation of the American Continent: "Slave traders, slave pens, slave auctions, and the attendant physical and psychological violence of holding millions in bondage were of central importance to the expansion of cotton production in the United States and of the Industrial Revolution in Great Britain" (p. 59). A similar point was made by W.E.B. Du Bois, who claimed that to fully understand the Industrial Revolution it would be more useful to look at the Atlantic Ocean rather than at Manchester. In other words, the geo-spatial enlargement of the perspective enables a kind of different interpretation of that "Revolution" showing continuity wherever disruption is usually seen.

Put differently, it is quite clear that during a period which we could identify between 1780 and 1840 amazing technical improvements have been made (after all, it is well known that Industrial Revolution "essential characteristic was technological innovation"[3]). Nonetheless, starting in particular with books such as the one of Sydney Pollard titled *Paceful Conquest* published in 1980s, appear a less celebratory interpretation of that event, and step by step a most complexified analysis arose which took into account for example slavery, imperialism and colonialism as critical causes of the Industrial Revolution. It is in such a sense that it seems that we should highlight continuity rather than disruption.

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3. R. Allen (2009), *The British Industrial Revolution in Global Perspective*, Cambridge University Press, 2011, p. 135.

Somehow the same interpretation could be maybe given for the "Industrial Revolution 4.0" too. Indeed, following the same list of publications you did that we briefly sketched out in the previous question, we can somehow clearly see a common life between "tele-working" and "platform working" both in term of social rights threat, social isolation etc. What do you think about this? What do you think about the so called "Industrial Revolution 4.0"? To what extent do you see a proper "Revolution" in it and to what extent do you see continuity with the evolution of labour? Furthermore, behind the contemporary transformations of labour it seems us to glimpse both technical and political reasons: would you see the "Industrial Revolution 4.0" as a kind of capitalistic answer to its own inability to reproduce itself or do you see it more as a labour force transformation?

Ursula Huws: It is a characteristic of capitalism that it does not develop smoothly but in a series of fits and starts, with each periodic crisis succeeded by a major wave of restructuring which simultaneously violently destroys old industries and ways of life and gives birth to the development of new commodities, with new means of production. The insatiable need of capitalism to expand is fed partly bye new forms of what Marx called 'primitive accumulation' bringing into being entirely novel forms of commodity based on aspects of the natural world or on human activities that previously lay outside the scope of the money economy, and partly on the cheapening of the costs of labour in the production and distribution of existing commodities. Technology can play a role in both of these.

Q3: Back to "*Cybertariat*" our third question is on the "subjects at work". The book *The Making of a Cybertariat? Virtual Work in a Real World,* was a collection of essays you wrote since 1978 until the early 2000s, and *Labor in the Global Digital Economy. The Cybertariat Comes to Age*, is somehow the continuation of the same topics, with a collection of text between 2006 and 2013, which was of course "a tumultuous period in the history of capitalism and the organization of labor". As you point out, this last period is the fourth of a series started with "the Glorious Thirty", followed by a slot which goes from the oil crisis of 1973 until the fall of Berlin Wall, and then concluded with the years between 1990 and 2007/8 when "general wave of deregulation, opening up free trade in goods and services and enabling unhindered flows of capital, intellectual property, and information across national borders throughout the world" (p. 9) as well as "of frenetic growth and of economic instability" (p. 11). All of these periods saw a modification in the work relation, but in the fourth one "the employment landscape was suddenly very different […] and ICTs had [...] become part of the taken-for-granted environment of all

work" (p. 13). ICTs changed dramatically how labor confronts capital in the new century, and a kind of paradigmatic example is given by "platform workers": it is on them that we would like to concentrate.

In *The Making of a Cybertariat? Virtual Work in a Real World*, in the namesake chapter, you face the high "degree of muddle about where to locate office workers" offering six different ways to categorize them "in terms of the *functional relationship of their work to capital*; their *occupations* (their place in the technical division of labour); their *social relation to production* (the ownership or non-ownership of the means of production); their place in the *social division of labour* (including the gender division of labour in the household); their *comparative income* (and hence their market position as consumers); and their social '*status*'»', concluding that somehow "a new cybertariat is in the making" even thought it would not always perceive itself as such. The question is automatically rising: after almost twenty years of your analysis something changed? Do members of the cybertariat reach a deepened acknowledge of themselves itself and what is their relation with proletariat? And then, how would you categorize laborers of the platform economy? Are they part of a cybertariat, proletariat, or should we identify a new terms more consonant with the "new phase" we are now living?

Ursula Huws: I think it is always dangerous to try to group workers into broad categories and to generalize too widely about the class position of these workers. Labour processes are constantly being changed, and so, therefore, are the occupational identities of the workers who carry out these forms of labour. In the process, new potential forms of conflict among different groups of workers are created, just as new potential bases for alliance are also emerging. What seems to me important is to look at workers' identities in two different, though interconnected ways. First, in relation to what Marx would have called their 'objective class position' – what form of value is their labour producing? Are they in a direct conflictual relationship with a capitalist? What commodity is being produced? How is that labour linked to that of others involved in the production or distribution of that same commodity or others like it? How could an alliance with other workers along the same value chain be used to strengthen their bargaining position? And vice versa? Second, what is their 'subjective class position'? How do they view themselves, and with what other groups do they feel aligned? How is this shaped by cultural factors? By ethnicity? How do their roles as consumers, or parents, support or challenge what they perceive to be in their best interests as workers? Once we have such a differentiated picture, and understand its internal contradictions and the dynamics of change, we can then start looking at what forms of action are possible, and

in what configurations of alliances. Experience tells us that the process of taking action in opposition to the capitalists with whom they engage in their daily lives (especially in the refusal to do what these capitalists ask them to do) is itself transformative. 'Class consciousness' is formed firstly in the realization of alienation from the products of one's own labour and secondly in taking part in a struggle which makes visible the way in which the capitalist's interests are opposed to one's own.

Q4: Which is the role of platforms and of digital technologies in the process of commodification of the care and domestic labors?

Ursula Huws: As I have written extensively elsewhere (for example in articles in *Socialist Register* and *Feminist Review* and in my 2019 book *Labour in Contemporary Capitalism: what next?*) platform technologies have made it possible to bring within the scope of the market (and hence under the discipline of global capitalism) a range of activities involved in social reproduction that were formerly provided by other means – through public services, through the labour of privately-employed servants or by means of unpaid labour carried out by household members or their extended families or neighbours.

Q5: Finally we would like to focus on future conflict scenario on labour area. Two different cases, similar in many aspects.

The first. In the last years the global value chain saw the rise of a new labour force taking the center stage: the logistics workers. From 2008 an astonishing series of strikes in logistics sector took place. From the main European container terminal Maasvlakte 2 located in Rotterdam and managed by Maersk (the world biggest sea trade company) to the port of Los Angeles/Long Beach; from Hong Kong to Vancouver, from Newcastle (Australia – the world's largest coal terminal) to Amazon warehouses in Germany as well as in Italy in the Po Valley and elsewhere. Many major world logistics hubs have been marked by conflict in the last few years, despite a lack of coordinating efforts, showing a clear global dimension to the striking logistics workers phenomenon. And even in these days, if we look for instance to the Chile revolt, we saw the Unión Portuaria de Chile went on strike in Valparaiso and elsewhere, followed by a declaration of the International Dockworker Council (which gather together 93 unions and 120.000 dockers worldwide) which is threatening to block all containers coming from Chilean docks. The circulatory dimension was something targeted by the *gilets jaunes* too, who are acting since almost one year on the blockade of the main traffic routes and of roundabouts (and of course not just that) all around France.

Even in the urban dimension (and this is the second case) the strikes and blockades of the so-called "new metropolitan logistics" are spreading worldwide. The most evident categories of this phenomena is offered by food riders. Looking at Europe, for instance, from Madrid and Barcelona to London, Birmingham or Manchester, from Milan, Bologna and Turin to Berlin, Bruxelles and Amsterdam: almost everywhere workers from platforms such as Deliveroo, Foodora, JustEat or Glovo went on to strike for protesting against the high degree of exploitation they face working with platforms. Indeed, if we assume that precarization and atomization are two characters that by far are pervading the contemporary dimension of labour at least since the 90s, under platform capitalism this tendency seems accelerated and exacerbated exasperated in as much as most of the platform workers are not considered employee but rather "autonomous" members part of a widespread "gig economy". And after all, it is not just a matter of riders. Talking about "new metropolitan logistics" we could recall the series of strikes by Uber drivers that occurred in Los Angeles (California) at the beginning of 2019, in Nairobi (Kenya) last July or in Kochi (India) in 2018: wherever the «low wages and poor working conditions» they face are so clear that they push them to protest.

Considering together these is logistics strikes (widely intended) appear to us to have at least two common features. The first one —quite self-evident— is that they acts on the circulatory dimension of capitalism. Although the sector of production still represents the major character of worldwide labour, we saw a proportional reduction in the strikes occurring in the place of production in favor of an increasing of action in order to block the flows of commodities (and of course, Amazon warehouses strikes are part of this). The "circulatory time", using Marx's term, is where labor mostly most laborer acts in order to maximize its voice and its action, hitting what seems the "weak point" of capitalism.

The second feature these two kind of strikes have in common is the centrality of new technology. On the one hand algorithms that are governing the apps are organizing work almost automatically, controlling the worker in almost every moment of his time at work answering to a kind of "Taylor dream". It may be worthwhile to stress that such an algorithmic power is threatening the role of managers too, whoich are basically almost completely bypassed by the computing power of the new devices. On the other hand, it is important to stress that also the workers on their side use technology in unusual ways. Many strikes that have occurred in the last years, particularly among platform workers, have seen a widel use of technological devices (both hardware – Smartphones, GPS, etc. – and software – Facebook, Whatsapp, Youtube etc.) for organizing the protest or

for spreading it. There are cases such as the London food riders who used Whatsapp intensively so as to know each other and organize protests, or other cases where Facebook groups are used in order to organize meeting and so on.

In this kind of scenario, which could be the new terrain of claiming and means by which workers could reach their target, what do are you foresee in terms of labour conflict in the platform era? In other words, to paraphrase the title of the last chapter of your last book: *what next*?

Ursula Huws: I do not have a crystal ball, but during the pandemic we have seen a number of developments that might prefigure what is to come in the future.

First, there has been a rapid growth in the logistics labour involved in bringing goods ordered online to housebound consumers. This has accelerated trends that were already evident. These include a replacement of wholesale for retail supply, with goods being delivered from warehouses, rather than shops, leading to a growth in the kinds of packing and picking labour, generally very tightly managed using digital technologies and sometimes using robots, typified by the Amazon warehouse, at the expense of more customer-facing work involving interpersonal communication found in shops (which may also be accompanied by a gender shift). Another trend is a strong convergence across different sectors providing last mile delivery. This convergence creates overlaps between workers who were traditionally unionized (such as postal delivery workers or workers employed by supermarkets to do home deliveries) and those who do not even have employee status, let alone union representation, such as food delivery workers and couriers. During the pandemic there has also been a convergence among platforms, for example in the UK Uber drivers are increasingly required to deliver food for Uber Eats rather than provide taxi services via UberX, and Deliveroo workers are being asked to deliver goods from shops as well as restaurants. Concurrently, warehouse and logistics workers have been publicly identified in many countries as 'key workers' making their work (and the physical risks they take in carrying out this work) much more visible than in the past. This seems to create a basis for new forms of alliance among these workers which could lead to new forms of organization, collective negotiation and political representation.

Simultaneously, the enormous growth in working from home among white-collar workers whose work can be done by digital means using video communication has made visible a new range of commonalities among these workers. It is likely that remote working will become increasingly common, with contradictory effects – on the one hand creating more isolation from each other, on the other hand engendering ever more familiarity with new means of intercommunication.

What the 'footloose' workforce of logistics workers has in common with the 'fixed' workforce of essential workers working in collective spaces (such as hospitals, factories or food processing plants) and the 'fractured' workforce of people working partly or wholly from their homes is an increasing likelihood of close surveillance and digital management. These commonalities could create the basis for new forms of organization and action focused on obtaining digital rights for all workers.

Finally, the pandemic seems to have ushered in a new wave of organization and action among diverse workers around the world. The need for governments to intervene to enforce lockdown and provide a means of subsistence for furloughed workers has exposed the hypocrisy of the neoliberal claim that 'there is no alternative' to the market, making it evident not only that the national state plays an important role but that this role involves political choices that can be influenced by popular action. Secondly, the divisions in the labour market between 'fixed', 'footloose' and 'fractured' workers, made newly visible in the discourses around 'key' workers and public risk, have drawn attention to the fact that those workers who are taking the greatest risks are also those who are on the most precarious contracts and the most poorly paid and, in many countries, are also those most likely to be from black and ethnic minorities. The upsurge in unionization and strikes among precarious workers has therefore converged, in many places, with the anger expressed by the Black Lives Matter movement in the United States. What is new about these movements has been the strong role played by new technologies in how they have been organized, for example the use of smartphones to record police violence and the use of social media to disseminate this evidence. This has in turn been linked to an unprecedented level of international solidarity. In that solidarity lies our hope for the future.