Critical Essay

The Power of a Pandemic: How Covid-19 should transform UK construction worker health, safety and wellbeing

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Abstract

The world will never be the same again, and neither will the UK construction industry. As one of the few sectors projected to bounce back rapidly from the pandemic, positive rhetoric abounds in the industry press, Government and quasi-governmental bodies about the opportunity that lies ahead to 'Build Back Better'. Something else that could and more importantly *should* never be the same again is the health, safety and wellbeing (HSW) of the UK construction workforce. Pre-Covid-19, UK construction was neither a safe nor a healthy place to work, and transforming this situation is arguably the most important win our industry can secure from this situation. In this essay we argue that the pandemic and associated socio-economic crisis offers a unique, once-in-a-generation opportunity to bounce forward to a 'new normal' of healthy, safe and hygienic construction operations, one where the worker's psychological wellbeing shares the foreground with their physical welfare. This paradigm shift will require a radical redefinition of the matters of concern that shape construction practice, moving away from a focus on sites as the locus of production, to a focus on people. Moreover, we suggest that there is a concurrent obligation on the research community to support such a transition by using the pandemic as a new point of departure for shifting the safety discourse via more critical research approaches. These should question the axioms which currently define the ways in which projects are constituted and managed, and where production takes primacy over the workers that deliver it.

Keywords: health, human capital, safety, workers

Construction Health Safety and Wellbeing in a Pre-Covid-19 World

Construction sites are designed for production: maximisation, optimisation and efficiency, but they are certainly not designed for people. High accident rates, levels of ill health and poor wellbeing amongst UK construction workers continue to cause concern throughout the industry, academia and the government (HSE 2021a). Indeed, despite continued awareness of the human consequences of construction in the UK, and constant efforts to improve the situation, statistics that previously saw reductions in harm have, in recent years, plateaued (HSW 2021a). But given the motivations behind contemporary construction practice this should perhaps simply be seen as inevitable. Not unlike Perrow's (1999) normal accidents, this is perhaps just normal UK construction: People die, get hurt and have their lives negatively impacted by working in the industry. That recent efforts have not been able to 'shift the dial' any further in favour of the workers shouldn't be all that much of a surprise, when the roots of how and why we do what we do on sites are considered.

Fundamentally, construction sites are industrial workspaces that have been shaped and organised around the available technologies and material requirements of the times. They have a long history that has, to date, seen four industrial revolutions come to pass, with a fifth (IR5) already looming on the horizon (Nahavandi 2019). However, the prioritisation of people that will hopefully come with IR5 (World Economic Forum 2019) has never previously been a prominent feature of construction's industrial development, with arguments for respecting people largely resting on economic efficiency over moral imperatives (Ness 2010).

During the first industrial revolution, accidents were often classed as 'acts of god', meaning the risks and dangers associated with work were simply considered part of the 'natural order' of the new industrial society, rather than as a direct consequence of newly introduced industrial processes (Cooter 1997:107). Early UK legislation in the form of the Factory Acts was hard won from 1802 onwards by workers and others concerned with their plight, in the face of fierce challenge from those who preferred to prioritise profit and production over people (Sherratt 2016). That these were 'Factory' Acts says much about construction: in contrast to the factories, workers on nineteenth century construction sites were simply expected to die as part of the job and no Act could hope to save them – if they became a mason or joiner they should readily accept the risk of death as simply part of their trade (Warburton 1844).

Industrial development throughout subsequent revolutions rapidly enhanced and increased both production and profit and, unsurprisingly, workers had to adapt to the revolutionary changes rather than the other way around. The physical strain that the heavy manual operations of construction work can place on the worker reveals how people are often an afterthought in this space. For example, despite the introduction of electricity from IR2 onwards, an innovation able to provide mechanical means for much of the manual labour of construction, you can still find work as a Hod Carrier on UK sites today (Indeed 2021). The vast number of musculoskeletal problems suffered by construction workers (HSE 2021a) are a direct consequence of their having to twist and lift and bend and contort themselves in ways often incompatible with comfortable movement, and/or reflect the need for repetitive movements to enact particular tasks. Ergonomics and bricklaying, to continue with the same example trade, are certainly not the best of friends (Boschman et al. 2011), and IR4 has even seen the development of costly high-tech semi-robotic exoskeletons to help workers lift more for longer to maintain production through existing processes, rather than considering why exoskeletons should be needed at all. Throughout such developments, the ever-increasing pressure for production placed on workers, alongside ongoing intensification of work from digitisation (Gilbert and Thomas 2021) as management processes become further refined, has been to the

detriment of worker mental health and wellbeing overall; stress, depression and anxiety form over a quarter of all reported ill health in the UK construction industry (HSE 2021a).

The struggle between production and safety (see Oswald et al. 2020 for a contemporary example) has been a relative constant in the history of the construction industry. It can be suggested that the current plateau in occupational safety and health (OSH) incidents revealed by the statistics (HSE 2021a) simply represents the number of accidents our industry will *inevitably* have, given current prioritisations and practices. And this itself should come as no surprise. The negative relationship between profit and worker HSW was highlighted by Marx (1867 [1977]) as an inevitable contradiction within the capitalist system of production. Braverman's labour process theory, by explicitly situating labour processes and work within the wider capitalist systems of production, was also able to clearly reveal the detriment therein (Spenser 2000). More recently, Sherratt and Sherratt (2017) suggested that our current situation fundamentally negates any 'business case' for OSH, despite best efforts of academics to argue for it (e.g. Tymvios and Gambatese 2016), as the capitalist mode of production is necessarily complicit in the exploitation of those it needs to function; using up worker HSW is simply a 'natural' part of the process. Indeed, the model of human capital theory that pervades the current industry discourse raises a series of problems when it comes to value placed on people, and by expension the ways in which they are considered within the production process. Clarke (2006) suggests that many structural features of the UK labour market effectively bifurcate professional and craft workers, the latter suffering from a less stable set of employment practices, most markedly resulting in labour being rewarded for what it produces rather than for the knowledge that such work incorporates. This inherent devaluation of labour sustains a situation where technology and process often has primacy over people, a sitation also reinforced by the process focus of the research community (Green 1998).

McEvoy (1997:66) suggested that technological developments '…structure the ecology of the workplace in three differing ways: by posing hazards directly, by shaping the social organisation that exposes workers to risk, and by influencing society's awareness of danger to its working population.'

For construction, many of the hazards created by that first industrial revolution are still present today; for example falls of those working at height remain among the top five causes of fatalities for construction workers year on year (HSE 2021a). Such hazards have been added to as technology has developed; at one end of the scale plant and machinery now create significant risks on sites, in part due to their size and immobility, whilst at the other the use of nanoparticles in many construction materials is raising concerns of lung problems when such materials are cut or abraded (Jones et al. 2007). As such, the practice of construction continues to challenge the HSW of the worker, despite decades of technological progress. Social organisation has, over time, moved on from the Factory Acts to the Health and Safety at Work Act etc. of 1974 which still dictates contemporary practice, 'reasonably practicable' assessments enabling flexible controls in the face of changing work practices, aiming to reduce risk and place any residual risk under the control of those who created it.

However, it is McEvoy's (1997:66) third aspect of workplace restructuring is perhaps the most poignant in current times. Disappointingly, society's awareness of the risks construction workers face on a daily basis still echoes the views of Parliament from the mid-nineteenth century: the death of a construction worker on site in the UK simply does not make the news. More startling figures do emerge from time to time, for example the Guardian newspaper sought to highlight that although 448 British soldiers were killed overseas in the Afghanistan conflict between 2001 and 2014, 706 construction workers were killed on British construction sites in the same period, and merited far less coverage (Boffey 2014). But generally, construction just gets on with it, just as the UK government asked it to when the Covid-19 lockdown began (Sharma 2020). Indeed, the industry not

only kept going but was also able to deliver the Nightingale Hospitals in incredibly short timescales. But the Secretary of State for Business, Energy and Industrial Strategy's early 'tribute to all those who are working tirelessly within the construction industry' falls rather flat now the consequences are coming to light. Low-skilled construction workers are one of the most Covid-19 affected professions in the UK, with a death rate of 25.9 deaths per 100,000 males. Skilled workers were also affected, data revealing 87 deaths of male workers in the skilled construction and building trades category, giving a rate of 10.4 per 100,000 (Marshall 2020). When compared to 'normal' fatality rates of just 1.62 per 100,000 workers (HSE 2021a), these numbers are not insignificant. These figures are of course not final.

The Construction OSH Zeitgeist

However, those familiar with construction OSH will be aware that continued efforts from industry, the government and academia pre-Covid-19 constantly sought to improve OSH. In recent times, concern for occupational health has grown to almost match that around safety (Skan 2015), and then rapidly expanded further to incorporate public health and more general wellbeing concerns such as smoking and weight management (Sherratt 2017). Worker mental health is now also a prominent issue, promoted by initiatives such as Mates in Mind (2020) and in response to the shocking statistics around construction worker suicide, which found the risk of suicide for those working in construction as low-skilled labourers was 3 times higher than the national male average, and more than double for those in construction finishing trades (Office for National Statistics 2017). A recent review of the role of the Principal Designer under the Construction (Design and Management) Regulations of 2015 has been launched to understand how efforts to more equitably and effectively share responsibility for OSH across the design team are being realised (HSE 2021b). And safety does, of course, remain a key concern; the target of Zero set by many large firms as their ultimate goal in HSW management (Zwetsloot et al. 2017).

In keeping with wider all-industry research and practice, UK construction was also beginning to develop an interest in alternative theories of OSH management. Moving on from the traditional dichotomy of structural, top-down controls and bottom-up person-centred perspectives (Hale and Borys 2013), the industry had begun to explore what has been termed a 'New View' of occupational safety (Cooper 2022). The New View encompasses a number of different approaches to safety management including Safety II (Hollnagel 2014), Adaptive Safety (Borys. et al. 2009), High Reliability Organisations (HRO) (Weick and Sutcliffe 2007) and Resilience Engineering (RE) (Hollnagel et al. 2006). Such approaches bring sociotechnical perspectives to OSH management (Carayon et al. 2015), focusing on the interactions between the workers and their work systems (Kleiner et al. 2015) and looking to create opportunities for systemic change able to optimise safety at the sharp end. Many also aim to enhance worker resilience and adaptivity within the wider systemic context – but without exclusively relying on workers to remedy systemic failings (Rankin et al. 2014), giving them a more prominent standing in the construction delivery system as a whole.

Yet whilst New View perspectives have been applied to construction theoretically (Harvey et al. 2019; Peñaloza et al. 2020) and in very limited ways in practice (e.g. Laing O'Rourke 2020), empirical evidence of success has yet to be seen (Patriarca et al. 2018). Further research focused on New View/socio-technical perspectives certainly has the potential to reveal areas for impactful systemic change, however such work is yet to be undertaken. It can (and has – see Cooper 2022) even be questioned how radical any of these changes really are, or would be, and whether they even have the necessary potential or energy to disrupt the OSH plateau, given a suggested reliance on traditional OSH management tools.

For now, traditional approaches to OSH management remain dominant in the UK construction industry. Although recent times have begun to bring some changes in how we 'do' OSH in construction, for example the evolution towards incorporating mental health, worker wellbeing and some aspects of New View thinking such as the adoption of a 'no blame' culture into work practices, a human capital approach endures. Which itself perpetuates a fundamental problem, particularly when considered from human-centric and labour process perspectives (Spenser 2000): it is people who must change, not the system. The construction production system remains unchallenged and unchanged through human capital approaches; instead workers once again have to adapt to suit it. But this system was *never* designed for worker HSW, as history and contemporary statistics all too easily show. Whilst New View and sociotechnical approaches may bring new insights in time, something much more disruptive may be needed to bring about any real and more immediate change to practice – and that something might now have happened.

Post-Covid Reform Orthodoxy

As one of the few sectors projected to bounce back rapidly from the Covid pandemic (Glenigan 2021), construction finds itself enjoying the prospect of both more attention and more investment given the catalytic effect that it can have on other sectors of the economy. Positive rhetoric abounds in the industry press and via Government and quasi-governmental bodies about the opportunities that lie ahead. This is particularly prominent within the UK Government's flagship Covid recovery programme; to 'Build Back Better', with spending on infrastructure driving economic recovery (BBC 2020), providing jobs and apprenticeships and accelerating progress towards net-zero carbon targets. The Construction Leadership Council's 'Roadmap to Recovery' (CLC 2020) is also full of opportunity, as the Roadmap will '…increase the level of activity across the construction ecosystem, accelerate the process of industry adjustment to the new normal, and build capacity in the industry to deliver strategic priorities, including: increasing prosperity across the UK; decarbonisation; modernisation…; delivering better, safer buildings.'

Impressively, the 'new normal' brings with it seemingly unlimited potential. It will enable construction to address many of Farmer's industry 'ills' (2016), including low productivity, low predictability, structural fragmentation, a lack of collaboration and improvement culture and poor industry image, to name but a few. That considerable efforts to resolve these problems *outside* of challenging pandemic conditions have singularly failed to date seems to matter not, and indeed such ambitions also support the incumbent government in their other policy goals such as 'levelling up' (The Conservative Party 2021). Post-Covid recovery even has the power to even resolve such longstanding and thorny dilemmas as the UK housing crisis (Wilson and Barton 2021), the Housing Secretary pledging that the coronavirus recovery will 'boost building…speed up…get spades in the ground…protect hundreds of thousands of jobs and create many others' as it builds 'the homes the country needs…' (Jenrick 2020). Indeed, the 'to-do' list for post-pandemic construction seemingly knows no bounds.

Although the actual levels of investment in new UK construction work remain to be seen, the devil always being in the detail, and although OSH is acknowledged within the CLC's (2020) Roadmap to Recovery, most emphasis is placed on the safety of buildings when built and occupied (2020:4), the shadow of Grenfell Tower rightly looming large. For construction workers and their HSW during what is promised to be an accelerated and increased construction delivery process, there is far less opportunity, and much less hyperbole. The CLC strive for '…improving occupational health and safety for the workforce' (2020:3) and this continues in some form throughout the three stages they put forward in their strategy: Restart, Reset and Reinvent. Restarting naturally involves providing

'…training for workers on implementing safe procedures for working on construction sites' (2020:12). However, Resetting aims to 'Improve and embed higher standards of safety practices within the industry, including occupational and mental health and safety' (2020:17), whilst Reinvention looks to 'embed an industry-wide approach to occupational health and safety, and promote better mental health amongst the construction workforce', tasking this ambition to the CLC themselves, supported by the Health and Safety Executive and specialist Construction Advisory Committees (2020:20).

But, despite the potential in the point of departure, potential that is mobilised in the form of significant change for many other aspects of the UK construction industry, OSH remains trapped within depressingly familiar rhetoric. Workers remain an afterthought in the technical landscape of construction; they are *literally* the last bullet points on the list for action (CLC 2020:17 and 20). When increased investment in the sector promises corresponding increases in the volume of UK construction work overall *and nothing more*, the result can all too easily just be more places for workers to get hurt in. It has the potential to further enhance and exacerbate tensions between worker HSW and production, applying increasing pressure to an already inappropriate and highly detrimental delivery system. Thus, despite the myriad positive changes Covid-19 can bring to all things construction, there is no systemic shift here, no attempt to reposition HSW within the wider industry system, and certainly no attempt to bring about change to the system itself. In fact, this post-covid world could actually make things worse for worker HSW. It seems that whilst we can readily envision a new digital future, or a new green future, a future in which OSH is prioritised seems to be one dream too far.

Opportunity in a Crisis: Punctuating the Equilibrium

Yet this should not be the case. Covid-19 has given us an opportunity to seriously disrupt the plateauing OSH statistics of UK construction. An opportunity to rethink the system from a different perspective, challenging the orthodoxy which has maintained the current equilibrium. Arguably the Covid-19 crisis demonstrated to the industry that rapid onset change is not only possible, but also practicable and utterly deliverable when necessity drives invention, and specifically with regards to changes around worker OSH (Stiles et al. 2019).

The model of punctuated equilibrium provides a powerful theoretical framework in support of this argument. Drawing on theories from evolutionary biology, it offers a theoretical explanation for the ways in which social systems can suddenly shift in response to a considerable shock, and not return back to their former state. Baumgartner and Jones (1993) introduced it as a model to explain policy change, where periods of incremental change are punctuated by significant change induced by changes in conditions or opinion. The theory of punctuated equilibrium has been applied across numerous policy fields, from to the diffusion of innovations (Boushey, 2012) to energy regimes (Colgan et al. 2012), and more recently to Covid-19 (Amri and Drummond, 2020). It posits, *inter alia*, that long period of stasis in policy are challenged by events which induce rapid onset change.

A highly relevant historical example is that of the Boulevard Lefebvre disaster of Paris that occurred in the 1960s, which fundamentally changed construction OSH in France. Paskins (2013) described how this event, within which a housing block collapsed killing 20 workers, led to a fundamental shift in the attitudes towards safety on building sites and more importantly, bought into focus myriad anxieties about urban development and architecture at the time and ultimately led to the development of safety laws still in place today. This single event, although dwarfed in scale and significance by the Covid-19 pandemic, acts as a reminder of what can be achieved when HSW matters are brought into rapid and sharp focus during a crisis event. Indeed, just as neoliberalism

punctuated the post-war economic equilibrium, it could be postulated that Covid-19 has the potential to punctuate the HSW equilibrium that has endured for so long. The burning platform that this has created provides an opportunity – or even a necessity – not just to re-think OSH in construction, but to establish new practices which supersede the debates themselves. As Amri and Drummond (2020) suggest, Covid-19 should induce policy reforms which are durable rather than mere temporary solutions in the midst of a crisis. Covid-19 arguably gives us the opportunity to punctuate the equilibrium that has seemingly held back step-change improvements in safety reform since the construction sites of IR1.

Because in early 2020, OSH moved from being a supplementary consideration to become *the* greatest concern. The pandemic demanded that OSH be firmly placed at the very centre of the production system, and this shift generated wider benefits than just 'improved' OSH, including enhanced productivity and worker effectiveness (Jones et al. 2020). Indeed, it has arguably taken a global pandemic to bring about the kind of integrated whole-industry strategic response that years of attempts to vertically integrate the sector has failed to do. Firms have been forced, whether they like it or not, to look at their construction sites in new ways; not so much as 'sites of production', but as sites of disease and infection, sites of loneliness and depression, and sites of oppression whose effects must be mitigated. The opportunity to reposition construction sites in this way should not be ignored. By this we do not mean merely developing and adopting new OSH practices to work within such redefined site spaces, but instead fundamentally challenging the labour processes that sustain systems and the current equilibrium, but which demonstrably fail to create safe and healthy places to work.

Yet there is also a potential fragility in the opportunity that now faces us. Put simply, if the industry doesn't embrace its workers and keep their OSH at the centre of all they do, the missed opportunity that will result will certainly set the sector back in terms of its ability to promote itself as a safe and healthy place to operate; normal service will resume, not that it was anything to be particularly proud of in the first place. The inability of policy or practice to 'shift the dial' on worker HSW during business as usual is clearly evident: only an external shock of such magnitude that it overturns the norms of practice is likely to induce substantive change, puncture our current plateau, and Covid-19 has certainly delivered on that.

But both industry and academe now need to capitalise on the pandemic, rather than trying to regress to what is a now largely irrelevant former state. At the heart of addressing this challenge lies a need to think systemically. We need to consider the construction industry as a system, a production delivery system that runs from inception to operation – this is not itself particularly novel. But what would be novel is to fundamentally redefine the nature of labour relations in the sector and throughout this system, moving away from human capital approaches, and develop a deeper sense of partnership in bringing about reforms to the OSH landscape. We need to make people the priority over production and profit; aligning ourselves with the human-centric IR5 from the very outset may also provide much-needed ongoing support to that end.

For the research community, such a call brings with it a new relevance to New View and socio-technical approaches to OSH management to unpack and reveal the flaws in the *system* through robust, valid empirical investigations. The knowledge gained as we worked through the pandemic should be leveraged and supplemented to underpin arguments for systemic change in production processes, able to concurrently enhance OSH. The reprioritisation of workers within the construction production system will support human-centric research, with catalysing support provided through IR5. A markedly different approach to that mobilising human capital thinking will

bring very different findings, that do not result in the determination of human-centric failings within a system that has never been designed for them to succeed.

We propose this as a new agenda for both research and practice, which compliments and maps onto the existing reform agenda, adopting a whole systems thinking approach centred on the workforce. We should use the rethink Covid-19 necessitated to rapidly explore new standards in HSW practice and welcome the punctuation of our previous equilibrium.

Concluding Thoughts

Although the UK now finds itself much improved with regards worker HSW over recent decades, before the pandemic started there was a clear plateau in HSW statistical improvements. Covid-19 has given us the opportunity to punctuate that equilibrium. Tantalising reports of better organisation and the space and resources to undertake work as it should be done have emerged from the Covid-19 operational industry, bringing wider gains to construction productivity. But the question of whether we have created a 'new normal' on UK sites that can be sustained and, in turn, can provide the basis of a route towards a safer and healthier workplace, is yet to be fully answered. Indeed, there are not unfounded fears that 'business as usual' has already returned to UK construction. But if we continue to do what we have always done, we will get what we have always got, and levels of accidents and ill health amongst the workforce will remain at their currently unacceptable 'normal' levels.

By problematising this situation, and explicitly exploring the opportunities within the Covid-19 crisis to punctuate this equilibrium and rethink the positioning of construction worker OSH within the industrial delivery system, we have raised a number of issues for others to mobilise within their own research and practice. Fundamentally, the endurance of 'human capital' approaches, when considered from labour process perspectives, are themselves stubbornly problematic and simply valorise the system over all else. And this is a system that was never designed to optimise worker HSW, as history, statistics and emerging sociotechnical approaches to OSH all too easily demonstrate. Yet Covid-19 put worker HSW front and centre. It made us rethink our sites as places of illness and infection, and to mitigate accordingly – and by doing so, it also resulted in clear wins in the elusive areas of enhanced productivity and quality. It further makes us reassess the role of the site in shaping worker wellbeing and mental health, psychological considerations that have been brought into even sharper focus by the pandemic. Thus, continuing to put worker HSW first should form the new-normal narrative as we emerge from the Covid-19 crisis.

We here make a clarion call for the research and practice communities not to waste the Covid-19 pandemic as a catalyst for positive change and reform by coalescing around the construction of a new OSH discourse, building on the platform for change demanded by the pandemic. This new narrative reimagines construction *for* the workforce rather than reducing them to instruments of production. This does not infer that we ignore technological progress, efforts to enhance productivity or to improve the quality of the industry's products. It does suggest that we should pay more attention to both lessons learnt from Covid-19 and the most recent industrial revolution on the horizon, to ensure we do build back better from the pandemic, and through IR5 transform the construction delivery system for the better, and certainly to the betterment of the OSH of its workers.

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