Zoe Adams, King's College, University of Cambridge*

Algorithmic Management: A Radical Approach

Abstract: This article develops a radical legal critique of algorithmic management with a view to providing strategic guidance to radicals seeking to navigate the problems caused by algorithmic management in a way that contributes to their wider, radical, political objectives. Contributing to a "radical" tradition in legal scholarship, the article's approach is distinctive for evaluating the merits and demerits of algorithmic management by reference to its impact on the conditions for radical political struggle, and for taking seriously the implications of the law's structural relationship with the capitalist system when it comes to whether, and if so, *how*, law might be mobilized in ways that can meaningfully remedy these effects or improve these conditions more generally.

Keywords: Algorithmic management, labor law, Marxism, strategy, platforms

I. Introduction

There already exists a wealth of literature that explores in depth the key features and novelties of algorithmic management, its actual and likely effects on workers and work organization, as well as how these effects relate to various gaps, or failures, in the legal frameworks in the context of which algorithmic management functions (Rogers 2023; 2020; Prassl 2018; De Stefano and Taes 2021; Adams-Prassl 2019; Bronowicka and Ivanova 2020; Duggan et al. 2020; Kellogg, Valentine, and Christin 2020; Lee et al. 2015; Moore and Woodcock 2021). This literature has also given rise to a range of proposals when it comes to how to adapt the legal framework in ways that might help minimize the risks and harms that result from algorithmic management, including in relation to its effects on worker organizing (Adams-Prassl et al. 2023; Rogers 2023; De Stefano and Taes 2021; Pasquale 2015; Hacker, Wiedemann, and Zehlike 2020). While there exist some critical accounts of these proposals, and more specifically, of transparency as the "key" regulatory strategy they endorse (Ananny and Crawford 2018), even these critiques make no serious attempt to evaluate algorithmic management from the perspective of its implications for *radical* political struggles, to situate reform proposals in the framework of such a critique, or to take seriously the risks and advantages to such struggles of relying on law for this purpose.

Radical political struggles are, by definition, struggles that, proceeding from an understanding of the structural basis of many of the problems facing society, and the integral relationship that exists between those problems and the basic organization of production and social reproduction, see as their long-term strategic goal the overcoming, or transcending of, the capitalist system—rather than the modification, perfection, or improvement of that system (Knox 2012). Unfortunately, existing literature on algorithmic management is not particularly useful when it comes to understanding the implications of algorithmic management for such struggles. There exist few analyses that have attempted to situate algorithmic management in a broader critique of the dynamics of capitalism, of capitalistic management, and of the structures that underpin the

* Law Fellow, King's College, and Affiliated Lecturer in Law, Law Faculty, University of Cambridge, Cambridge, UK. Please direct correspondence to zla20@cam.ac.uk.

conflicts and struggles to which algorithmic management responds.[1] Instead, and perhaps because much of the literature on algorithmic management has developed within the framework of industrial law and policy, this literature has tended to focus on its effects on workers and working conditions, proceeding on the basis of an implicit theory of what sort of living and working conditions are acceptable to workers; has tended to treat algorithmic management as an inevitable product of technological development, rather than something driven by conflict and struggle; and has taken as given the inevitability of algorithmic management and the technological developments that underpin it, as well as the wider structures in the context of which it functions. They have also taken for granted the desirability and capacity of law when it comes to responding to the problems with which algorithmic management is associated, failing to take seriously the significance of the law's complicity in these problems when it comes to the risks and limitations of strategies that seek to harness the law to address them.

This article seeks to fill this gap in the literature, developing a radical legal critique of algorithmic management and teasing out its strategic implications, with a view to providing meaningful guidance to radicals thinking strategically about how to respond to some of the immediate challenges posed by algorithmic management to their broader struggles for structural change. This will involve analyzing algorithmic management primarily from the perspective of its effects on the conditions for radical political struggle, and the role played by law in enabling, legitimizing, and shaping these effects. These conditions include, for example, opportunities for organization and mobilization; for the development of class-based solidarity and political consciousness; and for the development of structural awareness among workers that highlights the importance of structural change. Having explored the effects of algorithmic management on such conditions, and the role that law plays in enabling and legitimizing such effects, the article will then discuss what this means when it comes to whether, and if so how, radicals might harness the law in order to moderate or ameliorate such effects, or to contribute to radical political struggle more generally.

In taking such a "radical" approach, this article situates itself within a broad critical tradition in legal and socioeconomic scholarship, which is united by its attempt to root its critique of socioeconomic phenomena in a wider critique of the capitalist system to which that phenomenon is specific and that ultimately explains its evolution and dynamics.[2] It associates itself, however, with a radical current within this critical tradition, one that is defined by a particular political commitment, seeing as the ultimate purpose of that critique the desire to contribute favorably to a political project oriented toward transcending that system (Knox 2011; Rasulov 2010). Thus while, consistent with the various theoretical traditions that make up the critical stand of legal scholarship, it seeks to debunk taken-for-granted truths, or assumptions, challenging the prevailing discourse so as to make possible new ideas and understandings (Bowring 2011), and to provide political and contextual explanations of phenomena that are usually presented as natural and inevitable, it does this, ultimately, with a view to providing detailed prescriptions, or guidance, to radical political actors seeking to develop strategic responses to particular practices, problems, or circumstances as they endeavor to further both their more immediate organizational and/or mobilizational goals and their longer-term strategic goal of structural transformation (Rasulov 2010, 290–94).

The article will be structured as follows. Part II will introduce algorithmic management, before teasing out some of the problems it can be said to generate. Part III will then explore the role of law both in providing the conditions in which algorithmic management has been able to develop and in shaping its effects. This part will focus both on the contingent legal and political decisions

[1] A few exceptions to this are Van Doorn and Badger (2021), Adams and Wenckebach (2023), and Rogers (2020).
[2] This includes the Critical Legal Studies school of thought, as well as more recent studies of the transformative potential of the law. For a good overview, see Hunt (1986); Brabazon (2021).

that have transformed the institutional environment in which management operates, creating opportunities and incentives for the use of algorithmic management, *and* on the structural features of law that partly explain these decisions and that, in turn, serve to limit or constrain the effects and effectiveness of any regulatory reforms introduced in response to algorithmic management. Part IV will tease out the strategic implications of this legal critique, providing a series of examples of how law might be productively incorporated into strategic responses to algorithmic management today. Part V will conclude.

II. Algorithmic Management

The term "algorithmic management" is often used as a catch-all term to refer to the vast range of ways in which certain "new" digital technologies, technologies with advanced data-capture and processing capabilities, have impacted conditions and experiences of work. It involves prolific data collection from and surveillance of workers through a range of technologies, from smartphones to movement sensors, videos, cameras, accelerometers, and even technologies able to gauge worker mood; complex computational techniques that enable real-time responses to that data in the context of managerial decision-making; the use of that data for the purposes of automated or semiautomated decision-making; and the processing of data to inform more subtle forms of worker control (personalized nudges, penalties, etc.) (Duggan et al. 2020; Wood 2016; Rosenblat and Stark 2016). In many contexts, the development of algorithmic management has also facilitated a *disintermediation* of the working relationship through the partial or complete "automation" of the functions of middle management (ILO 2022). While increasingly deployed in "traditional" workplaces, the disintermediation enabled by algorithmic technologies has also led to the emergence of new business models, such as platform models, that allow workers to be placed into direct contact with clients or customers, and in the context of which consumer ratings or rankings function as an additional form of worker monitoring and control (Ajunwa and Greene 2018).

In order to understand the implications of algorithmic management, however, we cannot focus on the affordances of new technologies alone. Rather, and as the term algorithmic *management* rightly recognizes, we need to place these technologies in the context of the practices of, and conflicts at the heart of, a particular set of practices, or more precisely, set of social relations: management (Adams and Wenckebach 2023; Muldoon and Raekstad 2023).

In general terms, management simply refers to the process of coordinating inputs with a view to producing a given output. In capitalism, however, management assumes particular qualities because of the incorporation *into* those coordination processes of human labor power, and the conflicts, and challenges, that this situation creates in a context in which the suppliers of labor power are dependent on working for others in order to live, and so exist in a relationship of dependence with those exercising "managerial" functions (Cohen 1987). In this context, the imperatives shaping management practice come to include not only a desire to improve the coordination of resources in a way that minimizes cost and maximizes efficiency, but also to do so in a way that minimizes the scope for resistance by the human agents on whose labor power—and thus, cooperation—both of these things ultimately depend (Edwards 1980). It is precisely because of the pressures faced by capitalists in this context—their need to boost efficiency and minimize costs at a greater rate than their competitors, and to do so in an environment characterized by antagonism and resistance—that capitalists have tended to invest considerable sums in the development of technologies deemed capable of assisting with this task—of which "algorithmic" or "digital" technologies are just the latest example (Rogers 2023; 2020; Uddin and Hossain 2015; Lohmann 2020). The question to be asked, therefore, is whether these particular technologies possess affordances, or are capable of having effects, that differ from those of other

technologies historically deployed for this purpose. Or rather, whether algorithmic management is distinctive in some way when compared with other forms of technologically mediated management in the context of capitalism—whether it generates new harms, or risks, not shared with other forms of managerial practice not mediated by algorithmic technologies.

In this respect, it is generally agreed that *algorithmic management* differs from previous forms of managerial practice, or sets of managerial techniques, in the following ways.[3] First, the technologies employed enable extensive monitoring and surveillance, which extends to detailed aspects of worker behavior, including things such as mood, body temperature, etc. (Zenonos et al. 2016; Ajunwa 2018; Rosenblat, Kneese, and Boyd 2014), that are not immediately observable to the human eye, and not previously subject to capture or measurement (Steele 2020). Second, they enable real-time, automated, reactions to observed behaviors, and thus, even closer control over worker performance, leaving little room for resistance or negotiation (Kellogg, Valentine, and Christin 2020). Third, in many cases, they have enabled the complete automation of many managerial tasks, obviating the need not just for a human supervisor, but also, very often, for a physical workplace. Fourth, they have enabled a new way of directing worker behavior, one that relieves the necessity of generalized rules and prescriptions in favor of personalized nudges and suggestions (Rosenblat and Stark 2016). These "nudges" then rely for their effectiveness on implicit threats of adverse consequences of noncompliance originating outside the workplace—hunger, precarity, insecurity—to encourage workers to voluntarily align their decisions with the interests of their employer, thereby obscuring the existence of managerial control (for example, if you accept another shift, you will earn an additional £x this week; we have noticed you have repeatedly rejected shifts this week) (drawing on an implicit threat of dismissal or sanction), while artificially engineering "consent" to workers' own exploitation (Kellogg, Valentine, and Christin 2020). Finally, the technologies have made it possible to generate huge data sets about the behavior of various populations that can be relied on as a basis for predicting behavior (Richards and King 2013; Bodie et al. 2017), significantly exacerbating the information asymmetry between workers and employers and empowering the latter to make decisions in relation to the former even *before* a problem or event occurs, or manifests, and in a manner that leaves the basis of that decision extremely obscure from the perspective of the worker (Rosenblat and Stark 2016).

The use of algorithmic technologies in the context of management has additional benefits to capital. Most notable here is that they provide scope for an additional revenue stream, income that can be used to supplement core business operations, and effectively subsidize what might otherwise have been an unsustainable business model—thereby enabling employers to keep wages artificially low in their attempts to achieve market dominance and maintain a competitive advantage (Barwise and Watkins 2018). As Van Doorn and Badger have explained, employers can capture two forms of value from workers working in algorithmically managed workplaces: the monetary value associated with the goods and services produced by them, and the more speculative and volatile types of value that can be generated from the data that is extracted through the production process, and stored, captured, and analyzed by the technologies deployed for the purposes of management (Findlay and Seah 2020). The existence of this captured data is particularly attractive to venture capital because investors expect data-rich companies to be able to achieve competitive advantages by creating data-driven cost efficiencies, etc. They are thus willing to invest on the basis of the expected future value of the companies in which the data is employed, regardless of present-day profit rates (Jabłoński and Jabłoński 2020).

Thus, while algorithmic management entails the use of algorithmic technologies to facilitate and intensify the exploitation of workers' labor in the context of the production process, it has also

[3] For a good overview of these distinctive features, see Rogers (2023); Kellogg, Valentine, and Christin (2020).

made possible a process of expropriation as employers confiscate capacities and resources (data) generated through workers' activities and conscript those resources into capital's self-expansionary circuit, without the need to pay for or replenish those resources like they might if they were "purchased" through the medium of exchange (Sadowski 2019). In this sense, algorithmic management facilitates not just *exploitation* but another important process of accumulation, *expropriation* (Fraser 2016), forcefully privatizing what might otherwise be a valuable social resource, which could have been mobilized into the service of social need rather than private profit. This process exacerbates the process of degradation of living and working conditions toward which management in general is directed, moreover, by enabling a diversion of important social resources away from workers and into the hands of capital, often financial capital, while simultaneously increasing the opportunities available to capital when it comes to developing new and "data-informed" mechanisms of worker—and social—control (Baiocco et al. 2022).

There are several reasons why algorithmic management is particularly concerning from the perspective of radical politics, particularly given its tendency to obstruct and suppress worker resistance, and more generally, inhibit the building and sustaining of collective power (Rogers 2023). First, and particularly in the context of the platform business in which algorithmic management is particularly prevalent, because it removes the scope for human interactions, and fragments workplaces in ways that are obstructive to organization and collective action (Ferrari and Graham 2021; Rogers 2023, chap. 5). Second, because of the possibilities for ongoing monitoring and surveillance that algorithmic technologies enable, increasing workers' risk of being sanctioned for subversive or obstructive actions (Rogers 2023, 74; Rosenblat and Stark 2016). Third, because of the way in which algorithmic technologies exacerbate the information asymmetry between workers and employers, excluding the former from the data that would enable them to take control of their own work and thus performance and progression. Fourth, because, by automating many of the decisions taken in relation to workers, managerial decisions become harder to understand and challenge and, because they are increasingly individualized, close off opportunities for workers to share experiences and formulate common, or organized, responses (Lee 2018; Newman 2017). Finally, because they help to increase competition between workers and reduce the time available to them for organization and engagement in political activities and discussions, real-time scheduling makes it difficult for workers to meaningfully plan their on-work time (Rogers 2023).

These features of algorithmic management not only have tended to support a decline in living and working standards that leaves little space and opportunity for collective political action, but they have also tended to shift the orientation and terrain of struggle toward individualized and "invisible" forms of resistance, focused more on "gaming" the algorithms for personal gain than advancing broader, collective goals (Cameron and Rahman 2021; Allen-Robertson 2017). While there are some examples of workers taking advantage of digital communication technologies to share information about how algorithms work, to offer support to otherwise isolated workers, and to facilitate a degree of coordination (Bronowicka and Ivanova 2020), and some examples of new forms of worker mobilization emerging in the context of platform work more specifically (Cini 2023; Bertolini and Dukes 2021), generally speaking, the extensive and all-pervasive nature of the surveillance, coupled with the opacity of its operation, has tended to create more obstacles than opportunities for organization and resistance oriented toward broader, political goals, rather than addressing the more day-to-day concerns of individual workers.[4]

[4] It is not yet clear whether the more isolated examples of organization efforts by so-called "independent" trade unions reflect a generalized trend or a more isolated exception. On this, see Cini (2023); Adams (2023a).

III. A Radical Legal Critique

Management practices and technologies of worker control and surveillance do not operate in a vacuum. Rather, the *distinctive* advantages (for employers), effects, and characteristics of different managerial techniques, including *algorithmic* management, and the incentives that exist for capital to invest in the development of different management technologies in the first place, are highly dependent on the wider legal-institutional environment in which they function (Rogers 2023, chap. 2). This includes both specific legal and political decisions bound up with the political economy of neoliberalism and the more general assumptions built into the logic of the law, of which the former are ultimately an historically specific expression.

A. The Specific Legal Conditions of Neoliberalism

The term "neoliberalism" has been used to describe the particular way in which capitalist social relations have come to be institutionalized in the period following the 1970s, a product of a particular ideology, and set of practices, developed and deployed to serve the interests of particular factions of the capitalist class at a time of declining global profit rates and feared social and political disorder (Harvey 2016, 19). Central to this ideology, as well as the practices that support it and through which it finds expression, has been an attempt to extend the sphere of private, market-based relations into what was previously conceived as the public sphere. This has involved replacing a model of democracy predicated on the advancement of collectively determined visions of the common good with a market-based model of democracy predicated on the pursuit of private self-interest not just in the market, but in all spheres of life—spheres of life that come, as a result, to be modeled on markets and regulated in accordance with their "imperatives" (Dardot and Laval 2014, 4). Rather than protecting and upholding the general interest by pursuing directly redistributive policies, therefore, in the context of neoliberalism the state is cast as the guardian of individual freedoms, tasked with maximizing the space for the pursuit of individual private interest and extending market-based imperatives into all spheres of social life.

Neoliberalism thus implies a profound depoliticization of the state, something that is not only achieved via specific legal policies, but through a reorientation and reconceptualization of the nature and purpose of law (Brabazon 2016). In this context, rather than law being a means to advance certain policy objectives, it becomes a means to guarantee particular procedures and ways of interacting, in the context of which individualized, unrestricted competition becomes paramount (Hayek 1973; Alexander, Mazza, and Moroni 2012). This approach helps legitimize a position of ambivalence, or neutrality, toward unjust outcomes and toward structural inequalities and their effects (Brabazon 2021, 485). But it also helps to delegitimize the use of law to facilitate collective organization and action, by positing them as a direct threat to the individualized competition that is framed as the necessary means to advance social justice (Knox 2016).

This neoliberalization of the state, and its attendant implications for understandings of the purpose of law, is particularly significant for understanding how and why algorithmic management has been able to develop and bring specific advantages to employers, when it has, and why regulatory responses to the observed effects and harms caused by algorithmic management have assumed the form that they have in practice.

First, this orientation to law and understanding of the centrality of markets have helped legitimize the growth of powerful financial institutions engaged in speculative investment activity (Fudge 2017; Kotz 2008; Duménil, Duménil, and Lévy 2013); the individualization and contractualization of employment, and associated deregulation of labor markets, have helped expose the working population to near-unprecedented levels of economic risk. This combination of circumstances has

been vital for allowing employers to take advantage of the disciplinary effects of the market in their attempts to intensify work and undermine collectivization and resistance, where this would have been more difficult prior to the neoliberal era, where understandings of law and the role of the state were quite different.

During the welfare state period, for example, because law was seen as something that ought to advance substantive policies, oriented toward particular outcomes, rather than merely ensuring particular processes, there had existed a number of institutions that had insulated, to a limited extent, workers from market-based imperatives, and had facilitated and actively encouraged a model of work regulation predicated on collective self-regulation, as opposed to top-down, targeted individual rights (Fudge 2007). Equally, because the state was seen to have a role in advancing particular outcomes, different institutions and mechanisms of regulation—including collective self-regulation—were admitted as potentially legitimate and effective ways of advancing such outcomes, largely independent of any "negative" implications for individualized competition, thereby reducing the emphasis on individual contract as an (indirect) means to regulate socioeconomic outcomes (Adams 2022c; 2020; Dukes 2014).

The removal and scaling back of these various "mediating" institutions under the influence of neoliberalism is particularly significant to the effects and effectiveness of algorithmic management because the ability to control workers absent direct human supervision is only possible because of the way in which the ongoing threat of unemployment can intensify competition between workers in ways that undermine solidarity, encouraging workers to adapt their behavior to the demands and preferences of employers without the need for direct instructions or formalized procedures (Rosenblat and Stark 2016; Kellogg, Valentine, and Christin 2020). This would not be possible in conditions of near-full employment, widespread trade union organization, and comprehensive social protections capable of insulating workers from immediate social and economic risks, because workers wouldn't be faced with a de facto option of adapting their behavior to suit the desires and interests of their employers, or facing more or less immediate existential threat if they were to do otherwise (Adams 2022b). In effect, the removal of nonmarket supplements to workers' subsistence, combined with poor job security, has served to align workers' immediate interests with whatever is deemed to "please" their employers, making instructions to comply with explicit demands largely unnecessary. Instead, mere nudges, or suggestions, about what would be in workers' own best interests can often suffice to encourage workers to adapt their behavior in ways that maximize the interests of their employers (Rosenblat and Stark 2016; Kellogg, Valentine, and Christin 2020).

Second, the decline in union power and legal policies that have contributed to it, with which this unique orientation to law and the associated individualization and contractualization of employment has gone hand in hand, has also removed one of the few constraints that would have limited the ability of employers to develop and introduce the new forms of workplace surveillance at the heart of algorithmic management. This is because in workplaces with recognized trade unions, employers would usually be required to bargain with trade unions before introducing such technologies. Things are very different in a context in which workers' "associational" power is limited, particularly in enterprises with no union presence or where collective bargaining rights are more limited (Rogers 2023, 53–54). In this context, the main protection that exists for workers concerns rights in relation to privacy,[5] which tend to be reactive rather than proactive—and even where they provide a remedy to an individual worker who has suffered harm in response to use of a particular technology, this will not prevent employers from introducing or deploying such

[5] In the European context, this protection exists under Article 8 of the European Convention on Human Rights (ECHR), as well as in the EU Charter of Fundamental Rights. It also finds more explicit expression in the General Data Protection Regulations (see below).

technologies more generally. Because privacy rights are concerned in a more general sense with the value of privacy in relation to individual autonomy, they are not specifically tailored to the workplace context and, in fact, tend to be quite easily qualified by the conflicting interests of employers when it comes to securing the effective and efficient management of the workplace (Ford 2002).[6]

Finally, neoliberalism's emphasis on process over substance helps delegitimize attempts to use the law to prohibit what are constructed as natural and beneficial developments—such as the emergence of algorithmic technologies and their deployment for the purposes of management—helping focus attention in the regulatory context on questions of process. This helps prioritize transparency and consultation as regulatory strategies (Ananny and Crawford 2018) in place of more far-reaching red-line rules and complete prohibitions.

B. The Law's Form

It is clear that neoliberalism, and the particular orientation to law that is intrinsic to it, has helped create a legal-institutional environment that is particularly favorable to algorithmic management and its effects and effectiveness for employers. However, the features of law that neoliberalism specifically harnesses—such as its individualistic, abstract, and depoliticized nature—are not specific to the political economy of neoliberalism. Rather, the distinctiveness of neoliberalism lies in its attempt to embrace these more enduring and persistent features of the law for particular political purposes, imposing a legalistic logic on the political sphere in order to justify a fundamental shift in the orientation of the state to society and the overall shape, and purpose, of legal regulation.

As Marxist legal scholars have long recognized, those features of the law that neoliberalism harnesses, such as its individualistic, abstract, and depoliticized nature, find expression in the core concepts and assumptions that are integral to law as a particular discourse, and mode of regulation, where these reflect structural features of the system with which it coevolved (Pashukanis 1987). In this respect, the generalization of exchange that is a product of the separation of workers from access to the direct means of production, as that which brings into being the distinctive power relations between capital and labor, gave rise to the new subjectivity to which the legal form gives expression. This is a subjectivity in the context of which everyone is seen as fundamentally equal and free: equally free to engage in exchange, and to hold and alienate property, free from coercion. To be sustainable, such a subjectivity requires the monopolization of coercion outside the market, and its exercise in a manner consistent with this subjectivity, to enforce agreements and protect private property, while upholding and protecting the equal freedom of all. The enduring or persistent features of law, or the legal form, of which neoliberalism takes advantage are thus integral to the practices and relations through which capitalism as a socioeconomic system, and the power relations intrinsic to it, are reproduced.

The legal form profoundly shapes how the law perceives that which it is called on to regulate, and so constrains the effects and effectiveness of legal regulation introduced to "respond" to observed harms, such as those posed by algorithmic management. This is because it abstracts socioeconomic relations from their structural context, obscuring the power relations that underpin them (Adams 2022a). In the realm of labor law,[7] for example, despite being framed as a mechanism for regulating the power that employers exercise over workers and production, the law's structure constrains its

[6] See, for example, *Barbulescu v. Romania* [GC], no. 61496/08, ECHR 2017.

[7] Labor law is conceived here in broad terms to refer to those features of the legal-institutional environment oriented toward regulating the power that employers enjoy over workers, most specifically through direct regulation of working conditions and more indirect regulation that seeks to facilitate or structure forms of collective self-regulation.

understanding of the origins of that power in ways that limit or shape its effects (ibid.). For example, because of the law's assumption as to the freedom and equality of contracting parties, the law tends to frame observed inequalities as a product not of underlying structures and legally maintained property relations, but of isolated deviations from a norm of equality and freedom, or as the product of the free decisions *of* equal subjects—such as the free undertaking by contracting parties of contractual rights and obligations that are then deemed to *create* a position of hierarchy or inequality, the effects of which labor law is then deemed to respond to (Adams 2022a). This limits the extent to which the law can recognize the existence of, and regulate the effects of, employer power, particularly when it doesn't manifest itself in the structure of the contract by which workers are hired, rendering labor law underinclusive.

While this is a problem that is pervasive within labor law generally, and leaves outside the scope of labor law protection many people who are dependent on working for others in order to live, it is particularly problematic in the context of algorithmically managed workplaces where the affordances of algorithmic technologies are often harnessed to *replace* traditional contractual and bureaucratic mechanisms of control, leaving no clear "legally legible" manifestation of control to which the law can cling when analyzing working relations and when responding to the potential for abuse of power that capitalistic control implies (Adams 2022b). Thus, whereas historically labor law identified the existence of the control over work that is deemed a prerequisite for the employee status that secures access to labor law rights with contractually mediated rights of control, often inferred from the presence of a managerial hierarchy and express rules and procedures, algorithmic management is predicated on employers being able to subtly influence worker behavior through a combination of increased labor precarity—making it difficult for workers to refuse even formally voluntary opportunities and requests—and through an active shaping of the choice environment to which workers are exposed (Adams 2022b; Kellogg, Valentine, and Christin 2020, 372). Because the constraints on workers' freedom of action in this context cannot be conceptualized through a lens in which such constraints can only be the product of the free actions and decisions of formal equals, legal regulation struggles to conceptualize the nature of working arrangements in the context of algorithmic management *even more than usual*, and this can lead to labor law being both underinclusive—failing to recognize all those relationships to which its function is relevant—and ineffective—being ill-adapted to the full range of working arrangements in the context of which risks associated with the exercise of power manifest (Adams 2022c).

The logic and structure of legal discourse limits the scope and effectiveness of legal regulation of management in general, and algorithmic management more specifically, in other ways too. For example, the law simply assumes from the employers' property in business assets, including labor power, that they have a right to control both workers and work processes, as well as anything produced by those assets throughout the production process. This assumption explains the general deference the law exhibits to employers when it comes to controlling workers and introducing technologies of monitoring and surveillance, as well as with regard to the substance of the decisions made in relation to workers (as compared with the process by which they are made) (Mummé 2015). These assumptions also explain why, moreover, in the realm of data protection law, it is simply assumed that those who own and control the technologies through which data is captured and stored *ought* to enjoy de facto control over that data.[8] While data protection law may grant workers rights in relation to that data, this always appears as an "exception" to a norm that is already constituted by property principles to be specifically justified, closing off scope for the alternative of thinking about how to allocate resources in collectively produced goods (such as data).

[8] This assumption finds its expression in the statuses of data controller and processor that are simply assigned to the entity that does in fact control/process someone's personal data, regardless of the legitimacy of its being in a position to do so. Article 4, GDPR.

These property-based assumptions also explain why data protection law tends to focus on granting rights to data subjects and limiting what data controllers can *do* with data, rather than modifying the underlying and implicit allocation of control that locates data spatially and conceptually within the domain of the employer and, by implication, the business. When it comes to the extent of those rights and/or limits, moreover, property again constrains what can be achieved, because the impact of such rights *on* private property always operates as a constraining consideration. This is particularly evident in the weight afforded within the framework of data protection law to trade secrets and confidentiality. These doctrines enable employers to claim property-like protection over information that has value due to its secrecy and in relation to which they have taken reasonable steps to ensure confidentiality (Sunga 2020).[9] This is so despite the fact that the initial generation of and access to that information, and ability to take such steps, is only possible as a result of the legal powers attributed to employers as a result of their property, in algorithmic technologies or the business; the economic freedoms that this property is deemed to underpin; and the law's prior construction of data as something available for appropriation, rather than something in which certain public rights might already exist.

The centrality and implications of private property, freedom of contract, and the abstract legal subject are particularly evident in the realm of human rights law, an area of law that has been seen as particularly important for compelling states to update domestic law in light of the "new" threats that algorithmic management is deemed to pose to workers (McGregor, Murray, and Ng 2019),[10] particularly when it comes to their ability to exercise rights such as privacy or freedom of association (De Stefano and Taes 2021).

But human rights law operates according to the same property-centric, abstract, and depoliticized logic as the domestic legal framework. This has the effect not only of limiting the effects and effectiveness of human rights law when it comes to imposing a meaningful constraint on employer power, but actively legitimizing the failure of the domestic legal framework to do this as well. In the framework of human rights law, for example, the question whether a practice is unlawful comes to depend not only on whether the right in question has been infringed, but also whether or not that infringement was necessary and proportionate. However, when assessing this question, the purposes of the allegedly infringing act are assumed to be inherently legitimate where they operate to safeguard private property rights or are an expression of the freedom to conduct a business that is assumed to follow from those rights. The result of this is that human rights law does not contest the legitimacy of the very framework that gives rise to "rights" violations, nor does it acknowledge the power relations that underpin and explain them (Marks 2011). Instead, it seeks to strike a balance between rights and interests deemed to be of equal importance, even though the capacity of different individuals and groups to enjoy and exercise those rights is unequally distributed. Even where human rights law offers a remedy to an individual, therefore, in the event that an act is deemed to go further than is necessary to pursue a legitimate aim, that ruling does nothing to challenge the underlying distribution of power, which explains how, and why, such violations occur and how and why they come to disproportionately affect certain groups more than others.

While these observations about the inherent limitations of human rights law are not specific to algorithmic management, they are of particular relevance in this context for a number of reasons. First, as alluded to above, algorithmic management's effects are parasitic on the individualization and contractualization of employment that has helped undermine workers' collective power, and that has reduced the scope, and effectiveness, of trade unions when it comes to preempting the

[9] For examples of conflicts between data protection provisions and trade secrets, see correspondence at http://www.europe-v-facebook.org/FB_E-Mails_28_9_11.pdf; see also McNealy (2013).
[10] On the relationship between human rights and private property rights, see Chimni (2017, 291).

introduction of the technologies that produce the harms that human rights law is then more likely to be called on to address. This makes the potential gaps and inadequacies, and legitimizing effects, of human rights law potentially more significant. Second, the balancing logic of human rights is likely to help legitimize and present as natural and inevitable the introduction and deployment of algorithmic technologies, offering remedies that are oriented toward redressing the individual harms produced by such technologies, rather than the systemic and institutional failings that allow for such technologies to be developed and disproportionately impact particular groups in practice. Finally, human rights law tends to frame the importance of rights such as privacy or freedom of association in highly individualistic terms, potentially shifting the orientation of struggles against algorithmic management so that they focus on individualized harms, rather than group or class-based effects. This risks reinforcing the depoliticized and individualized logic of algorithmic management, rather than providing a means to challenge it, creating a further barrier to organization and resistance.

C. Strategic Implications

The above discussion has explored the complex role that law has played in providing the condition for the emergence, legitimization, and sustaining of algorithmic management and its advantages for employers. In so doing, it has sought to expose some of the risks and limitations of law as a strategy through which to respond to the problems associated with algorithmic management, vis-à-vis its effects on the conditions for radical political struggle.

This analysis is not, however, only important for highlighting the limitations of law as a means to respond to some of the more immediate challenges posed by algorithmic management from the perspective of radical political struggle. It also highlights the profoundly contradictory relationship between radical political struggle and law more generally. While engaging with law—trying to bring about particular legal outcomes or reforms—will be necessary to establish conditions favorable to organization and mobilization, etc., there is always a real risk in doing so that radicals will not only endorse the abstract, individualized, and depoliticized image of the world that the law projects, potentially fragmenting movements and organizations and obscuring the structural causes of social problems and the necessity of structural change, but that they will also be lending the legitimacy of the law to their radical objectives, *valorizing* law in the process. While this is particularly problematic in the neoliberal era, given the role played by the legal form in legitimizing neoliberal ideology (Brabazon 2021), and thus, the vast array of policies through which it finds expression, it is also of broader and more generalized significance. As explained above, law, as a particular form of regulation and a particular form of normative discourse, is part and parcel of the system, and set of social relations, that it is the ultimate objective of radicals to challenge. If radicals rely, or over-rely, on law, therefore, they potentially make future challenges to the law, and thus, the system, more difficult, endorsing the image of justice that the law projects rather than exposing the inequalities and power relations that it helps to sustain.

IV. Strategy

There is now a vast literature discussing potential regulatory responses to some of the harms associated with algorithmic management. Generally speaking, these have focused on filling regulatory "gaps" deemed to have been opened up by the introduction of algorithmic technologies in the practices and processes of management (Adams-Prassl et al. 2023). In this context, particular emphasis has been placed on how to address the privacy-related harms and informational asymmetries deemed to be particularly acute in the context of algorithmically managed workplaces, leading to a focus on transparency (Pasquale 2015; Diakopoulos 2016) and consultation (Adams-Prassl et al. 2023) as key regulatory strategies. In making the case for such reforms, moreover,

recourse is increasingly made to human rights law, most particularly, to privacy rights and freedom of association, with which aspects of algorithmic management practices are deemed to come into particular conflict (McGregor, Murray, and Ng 2019; De Stefano and Taes 2021).

As alluded to above, however, such approaches are inadequate from the perspective of radical political struggles for a number of reasons. First, these approaches tend to accept uncritically the way in which the problems associated with algorithmic management are framed in law, which, as we have seen, frames such problems in a manner that obscures their structural origin and accepts certain features of the world bound up with capitalism as natural and inevitable. Second, they tend to take the values protected by human rights law, such as privacy and autonomy, as ends in themselves, rather than thinking about how the protection of such values might advance, or obstruct, struggles for structural change. This means that law is valorized as a solution to the problems associated with algorithmic management, obscuring these problems' structural basis. Finally, however, this also means that law's role in producing and legitimizing those problems is often ignored in the context of these accounts, potentially obscuring the necessity for structural change beyond the law when it comes to addressing them.

A radical "legal" response to algorithmic management, by contrast, would focus on those legal changes that would address the particular challenges algorithmic management poses *to the conditions for radical political struggles* (in terms of class consciousness and solidarity and capacities for organization and mobilization), and would develop tactics for bringing about such changes that not only avoid endorsing the law's abstract image of the world and the core assumptions, explored in the previous section, that reflect structural features of capitalism, but actually problematizes it, building a critical orientation *to* the law, even while harnessing its ideological and material power to support various shorter-term instrumental purposes (Brabazon 2021). A radical "legal" response to algorithmic management would thus always be thinking about how to harness the ideological and material power of the law to bring about changes in the conditions from which political struggles are enacted and how to harness legal interactions as opportunities to mount a more direct political attack on the law itself, emphasizing not just the necessity but the insufficiency of those legal responses and improved conditions.[11]

Without neglecting the importance of thinking about how specific legal tactics can be incorporated into a broader strategy, the need to update and adapt that strategy in light of changing circumstances, and the need to take seriously the shifting organizational and economic constraints that different organizations and movements face, the rest of this section will provide a series of examples of aspects of the legal framework relating to algorithmic management that might prove useful "focal" points when it comes to developing the sort of "radical" legal engagements envisioned above. While the discussion below is of potentially wider relevance, the examples given draw primarily from the UK, and to some extent wider European, context.

A. Legal "Regulation" of Algorithmic Management

1. Labor Law

Labor law has long been concerned with protecting workers against the effects of managerial power, placing constraints on the exercise of that power, and providing protection against some of its perceived negative effects (Davidov and Langille 2011). As argued above, however, the effectiveness of labor law in the context of algorithmic management is hampered by employers' ability to make use of the new business forms and working arrangements enabled by algorithmic

[11] The key features of radical legal strategy are explored in more depth in Adams (forthcoming).

technologies to exclude workers from the scope of its protection and render any rights to which they do have access relatively meaningless or unenforceable. As we have seen, while labor law is inherently limited when it comes to identifying the relationships to which it is relevant, because of the abstract and individualistic lens through which it conceptualizes power, and thus, "control," this problem is particularly acute in the context of algorithmically managed work where that control does not also find expression in contractual obligations or formal workplace procedures. For this reason, prioritizing reforms to the way in which the law identifies the scope of labor law rights and protections would be an important focal point for radicals insofar as it could help reduce the extent of this problem, and thereby reduce the size of the group excluded from labor law's scope. The challenge, however, is how to do this without valorizing law and labor law as an adequate solution to the problems associated with algorithmically mediated work, and work more generally, and how to do it in a way that makes the structural *reasons* for the law's limitations, and thus, the ultimate inadequacy of any proposed reform, explicit.

Drawing on the observations about the legal form presented in the previous section, radicals might advance a more favorable interpretation, or approach, to employment status, one that keeps the socioeconomic position of the parties at the forefront and seeks to navigate terms that have quite explicit contractual, or interpersonal, connotations.[12] This might be a definition that focuses on economic dependency, for example, and deliberately eschews the language of contract in favor of the language of "arrangement," encouraging the court to depart as far as possible from its abstract, individualistic image of the world and engage more with the socioeconomic realities surrounding work in capitalism. While this will not overcome the law's structural limits, as even economic dependency, in law, is conceptualized in abstraction from the structural inequalities that explain its existence, it would go some way toward focusing attention away from highly contractual tests that systematically disadvantage those subject to algorithmic management, given the often obscure and diffuse ways in which control manifests in that context.

Having done this, having set the stage for their wider campaigns, radicals might then bring a claim for employment rights in respect of a worker, or group of workers, who it is known in advance do not meet prevailing legal definitions and who, in turn, would likely *still* fall outside the scope of labor law's protection, even if the more "favorable" definition/interpretation for which they were advocating were adopted.[13] This would provide radicals with an opportunity both to "air" their favored interpretation of the law and/or approach to employment status and simultaneously expose the structural limits of the law when it comes to engaging with and conceptualizing the origins and nature of the vulnerabilities against which labor law purports to protect. Radicals can then harness the arguments publicized in the context of their litigation campaigns to further their arguments for legal reform, while simultaneously exposing the necessity of wider reforms beyond the labor law sphere. These would be reforms, moreover, the objective of which would be to minimize the impact of the law's structural failings, and thus, the implications for workers of being excluded from access to labor law. This might include the introduction of universal rights and protections, not connected with one's status as worker, or role in relation to production, or universal access to basic social goods—such as decent housing, adequate food, health care, childcare, etc.—so as to reduce the dependence of all workers on both work *and* labor law for access to the means for a dignified existence.

By these means, radicals would take advantage of the opportunity to publicly air certain "legally acceptable" ideas about how to *improve* the problems identified and minimize the extent of labor

[12] A good example of this is, to some extent, provided by Lord Hendy's status of workers bill. Status of Workers Bill 2021-2, HL Bill [242].

[13] A potential example would be a wage-dependent author or a YouTube influencer: see the analysis in Adams and Grosse Ruse-Khan (2020); Adams (2022a).

law's underinclusivity, while simultaneously exposing that, while such improvements might be necessary, they will ultimately be insufficient, and helping to focus attention on wider, structural reform.

2. Data Protection Law

Another legal framework that speaks quite directly to algorithmic management is that of data protection law (Wachter, Mittelstadt, and Floridi 2017). As argued previously, the information asymmetry that exists between employers and workers is exacerbated as a result of algorithmic technologies, because they obscure the basis of many of the decisions that are taken in relation to workers, while limiting access, by workers, to the reasoning processes (here, algorithms) on which such decisions are based.

The legal framework that speaks most directly to this situation of information inequality is data protection law, which, in the EU, is mostly found in the General Data Protection Regulations (GDPR) and associated implementing legislation. This branch of the law purports to provide data subjects with certain rights of access to "their" personal data. While this framework is not addressed to the specific context of work, it is often conceptualized as a specific branch of consumer protection law (Romanosky and Acquisti 2009), a means to balance the scales between unequal parties. It does so by providing a way in which "data subjects" can come to understand the nature of the data that employers and other data processors and controllers have about them, how it is used, and to what effect, thereby better empowering them to make informed decisions about their interactions with data processors and controllers.[14] Thus, despite not being addressed to the specific nature, and implications, of the distinct forms of informational asymmetry facilitated by algorithmic technologies when deployed in the work context, data protection law can still be seen as a potentially useful target for political actors seeking to change the law in ways that might be beneficial to workers, given the existence of algorithmic management, from the perspective of radical struggle.

Having said this, there are certain features of data protection law that make a focus on "data protection rights" to advance radical struggles problematic. Most notably, there is the fact that the GDPR simply take as given the original separation, or exclusion, that makes it possible for workers to claim rights to access something from which they would otherwise be excluded, assumptions that locate de facto control of data not in the hands of those potentially affected by its use, nor those to whose activities or behavior it refers, or those best placed to ensure it is used for social benefit, but rather, in the hands of those who own the technologies that extract and store that data. This assumption finds its expression in the GDPR in the categories of data controller and data processor, statuses that are simply assigned, and assumed, from de facto control of data, rather than being explicitly assigned by the legal system to a particular agent on the basis of policy concerns, such as considerations about which agent or organization is best placed to ensure that data is used for the public benefit.[15] Equally problematic, however, is the fact that the data protection framework implicitly excludes the possibility that workers might have an interest in having access to data that does not directly refer to them, or rather, from which they are not identifiable.[16] This it does by concerning itself exclusively with rights in relation to *personal* data, data from which specific data subjects can be identified.[17] Indeed, the very existence of this framework implies that nonpersonal data—data that has been aggregated and anonymized—is not

[14] Preamble, GDPR.
[15] Article 4, GDPR.
[16] See Recital 26, GDPR.
[17] Recital 26 and Article 4, GDPR. Similar restrictions exist in US data protection law.

data that people might have an interest in accessing.[18]

In reality, however, a lot of the data extracted from workers and worker activities is aggregated and anonymized, because its use to capital lies not in controlling or manipulating individuals, but entire processes and activities, and allowing them to generate predictions relevant to particular individuals based on data about individuals deemed *similar* to them (Mahieu and Ausloos 2020; Purtova 2018; Mantelero 2016; Taylor 2017). And it is this use of data that has the greatest impact on the conditions for political struggle, as it collectively disempowers the working class relative to capital, giving the latter—whether in the guise of larger businesses or public sector agencies—the capacity to predict and preempt behavior in a way that the former cannot.[19]

When it comes to harnessing data protection law to advance their objectives, therefore, radicals ought to focus their attention on potential reforms that, while potentially advantageous to the working class, might also help reveal these problematic assumptions. Thus, radicals might focus their arguments for reform on the concept of data subjecthood and the related notion of personal data, challenging the idea that an individual's interest in data arises from *identifiability* rather than the potential impact on them of any uses made by particular forms of data regardless of identifiability (Case C-434/16, Novak v. Data Protection Commissioner, ECLI:EU:C:2017:994 (December 20, 2017)).[20] Strategically speaking, rather than defending an interpretation of "personal data" more consistent with this approach, drawing on the way in which the Article 29 Working Party, and independent European Union advisory body on data protection and privacy, had interpreted this concept, radicals should publicly challenge the idea that interests in data are individual in nature, deriving from the content of the information rather than being class-based or societal, linked with the uses to which data is put.[21] They would thus be advocating for an approach to data protection law in which the quasi-proprietary notion of *personal* data would be transplanted with one that recognizes the function of the law not in protecting *individual* rights and interests, but in guarding against the detrimental *societal* or *collective* impacts of certain uses of data in the context of the imperatives of a capitalist society (Mantelero 2016). Challenging the assumption that harms resulting from data processing are individualistic, and that the interests protected by data protection law concern an individual's relationship with particular information, radicals would be facilitating a far-reaching rearticulation and reimagining of the substance and function of data protection law while making visible the highly political decisions that underpin its current incarnation, making it difficult for the EU to defend the existing framework and thereby helping trigger the institutional processes that might lead to beneficial reform.

3. Collective Labor Law

Algorithmic management reveals particularly acutely the antidemocratic nature of capitalism and the inability of trade unions and collective labor law to remedy it. In capitalism, workers are not only marginalized from participating in the economic decisions that are made in the workplaces in

[18] This is so even if, in practice, it might be possible to include some forms of such data within the scope of such a definition, broadly interpreted. See the discussion below.
[19] For a discussion of the limitations of identifiability, see Urgessa (2016); Galič and Gellert (2021).
[20] While personal data has been given a broad interpretation by both the Court of Justice of the European Union and the Article 29 Working Party, it still emphasizes identifiability as the key criterion for inclusion within the scope of the GDPR. See the discussion in Purtova (2018). The Article 29 Working Party has said that the criterion of identifiability incorporates all data that can be linked to an individual, and this was implicitly endorsed by the 2017 *Novak* decision.
[21] There is some scope for doing this within the existing framework. The Article 29 Working Party, as endorsed implicitly in *Novak*, emphasized that someone might be identified or identifiable by *result* or *purpose*. See the discussion in Galič and Gellert (2021).

which they work (absent provisions for trade union organization or workplace representation),[22] but they are systematically marginalized in the context of the vast range of economic decisions that shape the basic structure and organization of society and the use and distribution of social resources more generally (Adams and Wenckebach 2023). This marginalization is a product of the delegation to the private realm of exchange, of the majority of decisions about how resources will be used and distributed, and the concentration of those resources—and thus, the "right to decide"—in the hands of a particular class.[23] Formal democratic processes, such as the franchise, do not compensate for this marginalization, insofar as unequal access to property also influences access to political decision-makers, and insofar as only a small proportion of the decisions made about how resources should be used are brought into the sphere of public decision-making. While traditional mechanisms of workplace representation and participation—such as trade unions and worker representatives—are beneficial, they are also insufficient ("Marxism and the Trade Union Question" n.d.). This is because such rights do not conventionally extend to rights of co-decision, leaving the ultimate authority to decide in the hands of the "property owner"—capital—and because even those rights to consultation and/or collective bargaining that exist only refer to a narrow range of decisions directly linked with immediate conditions of work.[24] Generally speaking, therefore, legal rights to collectively bargain do not provide trade unions with a right to participate in the vast range of decisions about investment, strategy, procurement, etc., that profoundly shape the options available when it comes to making decisions in the "managerial" context—decisions, that is, about terms and conditions (Adams and Wenckebach 2023).

The effects and implications of this democratic deficit, and the failure of extant legal frameworks to address it, are particularly apparent in the context of algorithmically managed workplaces, because the degree of workers' exclusion from the vast range of decisions that affect them and their working conditions is so acute (Adams-Prassl et al. 2023). This is so not only because such workplaces tend to lack formal structures of collective bargaining, but because of the physical isolation of workers, the deliberate placing of them in competition with each other, and the extent of monitoring and surveillance, all of which tend to impede voluntary organization efforts. It is also so because the "black box" of the algorithm obfuscates even basic decisions in relation to working conditions and their determination, impeding scrutiny and participation (Pasquale 2015).

While adapting the legal frameworks that support organization and collective bargaining to take account of these realities is one way to mitigate some of the *acute* problems, there is always a risk that focusing on these specific gaps will simply further obscure the wider democratic deficit to which such frameworks speak. This will then risk valorizing trade unionism and collective labor law as adequate responses to a democratic deficit that is built into the structure of capitalism. When considering how to respond to some of the more immediate challenges that algorithmic management poses to organization and mobilization, then, radicals need to think about how they might generate political pressure for more modest changes to the existing framework that will be beneficial to workers in algorithmically managed workplaces in the short run, while simultaneously highlighting the existence, and basis, of a broader, structural problem of antidemocracy, which such changes cannot address and which they and law more generally help to obscure.

In order to do this, radicals might harness the publicity and general legitimacy of the human rights framework as a means to challenge domestic legal frameworks, while simultaneously publicly exposing its limitations and complicity in the more general problem to which it purports to speak.

[22] This is the democratic deficit to which Davidov refers to in his work, focusing entirely on the deficit as it exists internally to the employment relationship (Davidov 2016).
[23] On the tension between capitalism and democracy, see generally Fraser (2022).
[24] For example, Trade Unions and Labour Relations (Consolidation) Act 1992, s.178.

As alluded to above, human rights law protects certain rights in relation to trade unions, a protection that is explicitly linked with ideas about liberal democracy (Mutua 1996). In the context of Article 11 ECHR, for example, Article 11 is said to impose certain obligations on states to ensure that individuals are able to join and form trade unions and take action in the context of those unions for the advancement of their interests, something deemed necessary to a democratic society, and to support the values of individual autonomy and equality on which such a society is deemed to be predicated. These obligations require states both to remove obstacles to such organization and action and to refrain from introducing, or maintaining, laws that interfere with these processes where such interferences cannot be shown to be "necessary in a democratic society in the interests of national security or public safety, for the prevention of disorder or crime, for the protection of health or morals or for the protection of the rights and freedoms of others."[25]

Despite this clear link between the scope of Article 11 and democracy it is clear that the structure and underlying assumptions of human rights law prevent it from adequately grappling with the democracy problem at the heart of capitalism, or with the potential ways in which trade unions *might* help respond to it.

In this respect, it was suggested above that the democratic deficit at the heart of capitalism—the fact that decisions about how social resources should be used is delegated to the private realm of exchange, where the right to decide is unevenly distributed between classes—poses problems for capitalism's sustainable reproduction, and thus, for ensuring that social resources are allocated in a way that can ensure the reproduction of labor power. This is so, it was suggested, *unless* there exist mechanisms capable of meaningfully constraining the pursuit of private self-interest, forcing economic decision-makers to take into account considerations of social need, and, thus, the material interests of the laboring classes, when making economic decisions in the market. Trade unions are one potential mechanism through which this can be achieved, insofar as they provide an opportunity for the collectively articulated interests of workers to be expressed, and for practical constraints to be placed, through industrial action, on employers' ability to disregard them. If trade unions are to be able to perform this function in practice, however, they must be capable of functioning as representatives of a given class, organizing beyond the boundaries of a given legal relationship, such as employment, and beyond the boundaries of a given workplace. They must, moreover, be able to assert and articulate the collective interests of those they represent, and take action to ensure that those interests are taken into account in practice by those making major economic decisions in the market. However, they cannot do this absent specific legal support, both because such activities often conflict with the private law framework underpinning market activities and because of the power that employers enjoy when it comes to exposing workers to risks—of sanction, dismissal, or legal action—that make involvement in trade unions either practically difficult or risky, and so unattractive. These risks are only exacerbated in the context of algorithmically managed workplaces, because of both the uncertain legal status that such workers often enjoy and the sense of constantly being monitored and watched that algorithmic management engenders.

If these necessary legal supports are to enable trade unions to act, and operate, in the manner envisaged above, however, more is required of the legal framework than mere permission to bargain or consult with employers—and thus, an obligation on the latter to consult and/or engage in collective bargaining. Instead, or in addition, trade unions need to benefit from an obligation of economic decision-makers more generally to engage in joint decision-making with trade unions not simply over matters linked with terms and conditions of work, but over those that impact the entire context in which such decisions are taken: decisions about investment and innovation, and

[25] Article 11(2), ECHR.

about strategy and deployment (Adams and Wenckebach 2023). Consistent with this, trade unions would also need to be empowered to engage in collective action not only in relation to disputes arising in the framework of a given workplace, or employment relationship, but also in relation to any of the matters that the decision-making capacities of employing entities can affect. This would mean that industrial action should not be unlawful simply because it significantly affects persons not party to a given "dispute" because it interferes with private property rights, and the actions and decisions of consumers and business more generally. Instead, collective action would be recognized as a necessary mechanism through which to publicly assert the priority of social need over private profit, with the resulting disruption and inconvenience recognized as an inherent part of the process through which this assertion takes place, and recognition of social need more systematically incorporated into economic decision-making more generally.

Law in general, and the structure and logic of human rights law more specifically, cannot accommodate such an ideal framework (Knox 2019). The law's, and more specifically human rights law's, presupposition of individuals' formal equality and freedom, and its resulting blindness to structural inequalities and the societal contradictions that they underpin, prevent the legal system from recognizing the extent of the democratic deficit that trade unions might be required to address, the nature and scope of the inequality that trade unions purport to mitigate, as well as the basis of the common interests that different groups share in capitalism, most notably, the interests workers share as workers and as consumers, and the class-based interests that different workers share regardless of occupation or workplace (Knox 2019; Adams 2023b). At the same time, these presuppositions prevent human rights law from acknowledging the need for a hierarchy in the protection provided to the interests protected by different rights, depending on the position of a given individual in the structure of capitalism (Wall 2013), *and* depending on the wider function that the protection of those interests serves—interests linked with requirements for social reproduction and/or interests linked with the immediate economic imperatives facing individuals and businesses in their capacity as market actors, prioritizing their immediate economic survival.

These limits to the law, and human rights law more generally, can be seen in the jurisprudence of the European Court of Human Rights (ECHR). Here, in relation to Article 11, trade unions are conceptualized as private organizations representing the *occupational*[26] interests of those party to a particular type of legal relationship, namely, employment.[27] Thus, the "right" in question is not one that the law requires states to extend to those who work under a legal arrangement other than employment, regardless of whether those persons are in a similar class, or structural position, to that of standard employees.[28] Equally, while the framework requires that states ensure that workers can join trade unions and take action in defense of their interests,[29] this obligation is not deemed to extend to a requirement to ensure that workers can take action in solidarity with workers in a different workplace employed by a different employer, nor a requirement to engage in industrial action that has the effect of interfering with the rights and interests of those not party to a particular workplace dispute. This is so even where those rights and interests are intimately linked with the ability of those persons to pursue their private self-interest in the market: to access goods and services, to carry on one's business, or to attend and engage in work or employment.[30] Consistently with this, while the law does require that states make possible collective bargaining between

[26] *Swedish Engine Drivers' Union v. Sweden*, no. 5614/72, § 40, ECHR 1976; *Tüm Haber Sen and Çınar v. Turkey*, no. 28602/95, § 28, ECHR 2006.
[27] *Sindicatul "Păstorul cel Bun" v. Romania* [GC], no. 2330/09, §§ 141, 148, ECHR 2013.
[28] *Manole and "Romanian Farmers Direct" v. Romania*, no. 46551/06, § 62, ECHR 2015. See also the domestic decision in *IWGB (Deliveroo) v. CAC* [2023] UKSC 43.
[29] *Wilson, National Union of Journalists and Others v. United Kingdom*, nos. 30668/96, 30671/96, 30678/96, § 46, ECHR 2002.
[30] On all these points, see the extensive discussion in *RMT v. UK*, no. 31045/10, ECHR 2014.

workers and employers,[31] and thus, limit the extent to which employers can obstruct attempts at collective bargaining through various unfair industrial practices,[32] it does not require that states mandate that decision in relation to certain matters be taken *jointly*, nor that any collective bargaining that does take place result in a particular binding outcome or agreement.[33] Rather, the law still allows states to assume that the ultimate decision-making authority lies with the employer, even if it provides limited rights for trade unions to *attempt to* encourage employers to take their views into account when those decisions are made, in certain narrowly defined contexts.

The fact that human rights law is structurally predisposed to bar legal developments that are not only beneficial to radical political struggle but are also, arguably, necessary for capitalism's sustainable reproduction is what makes human rights law a potentially powerful resource to be mobilized by radicals in support of their wider objectives: to support campaigns for modest reforms that might be moderately beneficial to radicals while providing a public forum through which to publicize a more radical vision of trade unions. That is, a vision that can be shown to be necessary for capitalism and the advancement of the values to which human rights law purports to speak, but that is systematically blocked by human rights law and its basic logic and assumptions. In this way, it can simultaneously provide opportunities to bring about short-term legal changes beneficial to radicals and to help further the broader goal of revealing the limitations of law, and legal reform, and the necessity of structural transformation.

Thus, human rights law, and jurisprudence in relation to trade unions, such as in the context of Article 11, would provide scope for condemning the failure of states to put in place mechanisms capable of overcoming the disincentive effects that extensive worker surveillance can have on the ability of workers to exercise "formal" rights in relation to trade unions, to call into question, for example, minimum requirements with regard to the bargaining units required to secure formal rights to trade union recognition, where employers are able to structure work and workplaces in ways that deliberately fragment workplaces and prevent such numerical requirements from being reached (De Stefano and Taes 2021). The law would also provide scope for advancing arguments for more far-reaching positive interventions by states to make rights in relation to trade unions meaningful in a context in which technologies play a profound role in mediating working conditions. This might include, for example, arguments in favor of positive obligations of employers to establish representative committees in workplaces in which trade union representation is absent, conferring on those committees specific rights with regard to bargaining and consulting over matters related to the design, introduction, and deployment of technologies and the use, storage, and processing of data (Adams and Wenckebach 2023); or extending legal protections for striking workers so that they cover a broader range of persons than what prevailing legal definitions of workers or employers currently encompass (Dukes and Streeck 2022).

While existing jurisprudence suggests that the court would be reluctant to interpret Article 11 as requiring such steps,[34] the language and logic of human rights could still be harnessed to impose pressure on states with regard to the introduction of such reforms, even if a direct legal challenge to their failure to do so were to fail in practice. This is because, while such reforms might run up against the prevailing interpretation of human rights law by particular courts, they are not fundamentally incompatible with its basic logic or structure. For example, they are entirely

[31] *Demir and Baykara v. Turkey* [GC], no. 35403/97, ECHR 2009.
[32] *Wilson, National Union of Journalists and Others v. United Kingdom*, nos. 30668/96, 30671/96, 30678/96, ECHR 2002.
[33] *UNISON v. United Kingdom* (admissibility), no. 53574/99, ECHR 2002.
[34] See, for example, *Unison v. United Kingdom*, no. 65397/13, ECHR 2016 (narrow interpretation of scope of state's obligations with regard to facilitating collective bargaining); *IWGB (Deliveroo) v. CAC* [2023] UKSC 43 (narrow interpretation of personal scope of Article 11); *RMT v. UK*, no. 31045/10, ECHR 2014 (refusal to recognize a complete ban on secondary action as incompatible with Article 11).

consistent with the assumption that rights granted to workers should not extend beyond bargaining/consultation to include co-decision—giving primacy to the property that the employer has in the resources the use of which is affected by such rights. While arguments in favor of such reforms would indirectly challenge the proportionality of any failure by the state to introduce such policies, and thus, of the interference implied by certain employer practices, they do not challenge the balancing logic, or the premise that the courts ought to balance the need to protect workers' rights against the conflicting rights of employers or of the wider public.

Precisely because these reforms are potentially compatible with, and can be accommodated within, the existing structure of human rights law, radicals risk legitimizing existing understandings of the scope and function of trade unions that human rights law endorses, even if they provide an opportunity to expose the political nature of any decision not to accommodate them. As a result, radicals risk becoming complicit in the law's obfuscation of the broader democratic deficit to which they constitute an inadequate response if they seek merely to make these demands and criticize any refusal to meet them on a purely political basis. In addition to advancing these modest reforms, therefore, and implicitly criticizing the political choice potentially made by courts or states not to support them, radicals must embed such demands in a wider narrative that shows why even these more modest reforms are inadequate, and why human rights law is structurally *incapable* of accommodating them.

While this could and should be done as part of their wider political campaigning, radicals might also seek to do this in the courtroom. For example, a legal challenge to the failure of a domestic legal system such as the UK to provide meaningful opportunities for workers in algorithmically managed workplaces to bargain with their employers, focusing, for example, on the lack of a duty to bargain, or restrictions on the scope of the statutory recognition procedure,[35] could be used as an opportunity to take advantage of the publicity of the courtroom in order to advance a more *radical* vision of trade unionism like that advanced above, one that neither the domestic legal framework *nor human rights law* can accommodate. This form of "defiant rights claiming" (Eristavi 2021) would simultaneously place political pressure on domestic governments to reform the legal framework, harnessing the perceived legitimacy of human rights law to help bolster the case for more modest reforms, and creating an opening to publicly advance the radical model of trade unions and expose the inability of human rights law—and law more generally—to support it. By these means the particular issues thrown up by algorithmic management for worker organizing and the legal frameworks that accommodate it can become an opening into which a more subversive attack on both law and the system can be advanced.

4. Socioeconomic Rights

The previous section shows how the particular challenges that algorithmic management poses to the truncated form of democracy protected by extant legal frameworks can be harnessed as a means to *improve* the scope for democracy, improving conditions for worker organizing in algorithmically managed workplaces and more generally, *and* for mobilizing support for the structural changes that will be required to overcome the limitations *of* such frameworks and the democratic deficit that they reinforce. In this section, we can see how a similar approach might be taken in the realm of socioeconomic rights.

It was suggested in the previous section that the effects and effectiveness of algorithmic management are highly predicated on the distinctive institutional environment that has developed under neoliberalism, one in which workers are exposed to near-unprecedented levels of

[35] Trade Union and Labour Relations Act 1992, pt. 1, schedule 1.

socioeconomic risk. This is due, among other things, to a rolling back of previously well-established social institutions, public services, and mechanisms of social security; and the evolution, and implicit legal endorsement, of modes of contracting labor power that undermine the effectiveness of labor law, the collective power of workers, and, thus, workers' ability to refuse to adapt themselves to the demands or perceived desires of employers. Given this situation, certain shorter-term, institutional reforms would go a long way toward both limiting the effects of algorithmic management on workers, and, thus, their advantages to employers, *and* reducing the implications of the limitations of the law, and labor law, when it comes to modifying or regulating them. Examples of such reforms would include the (re)introduction of robust job protection, giving workers meaningful choice when it comes to deciding whether to submit to employers' requests/demands; the introduction of generous social security protection, providing support for workers' subsistence outside the market, so as to reduce the impact of any potential threat of unemployment on their decision-making capacities; and the introduction of "universal" public services, such as social housing, public health care, public childcare, etc.—reducing workers' market dependency, and, thus, undercutting some, although not all, of the power that employers enjoy over workers.

The benefits of such reforms are not unique to algorithmically managed workplaces. However, their importance is particularly acute in that context given the way in which algorithmic management has been shown to encourage labor market casualization and to facilitate the use of business models that treat workers as substitutable and disposable, and so provide for minimum security, increasing the power that employers have over workers by exposing them to higher levels of socioeconomic risk. Given that this problem is exacerbated by the observed failure of labor law systems to adapt both the scope and structure of labor law protections to the realities of such workplaces, the case for shifting attention away from regulation, toward the wider institutional framework in which such regulation operates, is particularly persuasive in this context.

Having said this, and while such reforms are clearly beneficial when it comes to minimizing some of the more immediate negative implications of algorithmic management on conditions relevant to workers' capacity to engage in radical struggle, they do not overcome, but merely limit the extent of, the basic structural inequality that exits between labor and capital and that underpins the power that the latter has over the former. They also embody the same legal logic and set of assumptions that, it has been shown, help to legitimize capitalism and its central practices and relations. For this reason, reforms like these cannot be unquestionably pursued by radicals, nor placed at the heart of their political campaigns. Rather, and in a similar manner as was suggested in relation to reforms to collective labor law, radicals should see these reforms as the likely compromises that might be introduced in response to more defiant or radical demands, demands that are oriented toward a similar end, but that go one step further.

These more "defiant" demands would not presuppose a basic inequality between labor and capital, and thus, the preservation of workers' wage dependence, but would imply the sort of structural changes that are necessary to overcome that separation, and that dependence, entirely. These demands might thus take the form of demands for guaranteed and unmediated access to work, to decent housing, to adequate food, to a clean environment, and to public childcare and health care—demands formulated not as a request for a right that can be enforced against a state, rights of access to something from which workers are otherwise excluded, but rights that are unconditional and unmediated, rights that are guaranteed as a product of the way in which society is organized, rather than as a "benefit" conferred by a state under certain legally imposed conditions.

The advantage of such an approach is that radicals could simultaneously generate support for, and

pressure for, institutional reforms oriented toward reducing workers' market dependence by problematizing and exposing how a lack of certain institutions capable of mediating such dependence exacerbates problems associated with algorithmic management (but that are more generalized in practice), while doing so in a way that links that problem to certain structural features of capitalism, and that, therefore, poses a greater threat to existing interests, making the introduction of "compromises" more likely.[36] Insofar as these compromises are oriented toward undermining the effects and effectiveness of algorithmic management, moreover, such compromises can simultaneously function to improve the conditions of particular groups, facilitating their engagement in radical struggles, *and* to reveal the duplicity of the state, publicly exposing its unwillingness to concede to more radical demands. In this way, radicals can help focus attention on the advantages of the reforms that have been shown to be *necessary* but that have been denied by the state, as compared with the more modest reforms that the state has been willing to introduce. This can then help to ensure that improvements can be made to the immediate conditions that exist for radical struggle in a way that helps sustain momentum for further, and future, struggle beyond the law.

V. Conclusion

This article has sought to demonstrate the potential contribution that radical legal scholarship can make to radical political struggles, focusing specifically on the problems for such struggles posed by certain recent developments in the world of work, most specifically, the introduction of "algorithmic management." It has done this by showing how a radical legal critique of a given practice or phenomenon can be used to provide strategic guidance to political actors, and can thereby feed into their wider political campaigns and attempts to forge comprehensive political programs that will necessarily require some engagement with, or navigation of, the law and legal-institutional processes.

While the final section of the article set out a series of examples of focal points to be used in the context of struggles against, and in response to, algorithmic management, it should be emphasized that political tactics—including those involving law—will always have to be forged, and adapted, in light of prevailing circumstances. It is thus not possible to prescribe in advance exactly what should be done by radicals in response to specific challenges or problems. What is possible, however, and what this article has attempted to do, is to develop general principles, or overall approaches, that can be adapted and revised in light of immediate demands and shifts in the wider context in which radicals function. The examples presented in the final section should thus not be adopted wholesale or uncritically, but should be used as strategic pointers when it comes to developing strategic programs that are appropriate to the contemporary environment. For this reason, moreover, while the suggestions presented in the previous section were formulated in the UK context, there is no reason why they cannot, or should not, be adapted to the conditions prevalent in different countries and other legal systems—just as there is no reason why they shouldn't be adapted to respond to the challenges associated with problems or practices other than, or additional to, algorithmic management. Instead, the guidance presented in this article should be seen as guidance that radicals can embrace when it comes to forging politically appropriate responses to the myriad challenges facing workers and wider society and when it comes to harnessing the emancipatory potential of the law, however limited, for this purpose.

[36] For examples of such subversive uses of socioeconomic rights, see O'Connell (2021); Patnaik (2010).

REFERENCES

Adams, Zoe. 2020. *Labour and the Wage: A Critical Perspective*. Oxford University Press.

Adams, Zoe. 2022a. "A Structural Approach to Labour Law." 46 *Cambridge Journal of Economics* 447. https://doi.org/10.1093/cje/beac008.

Adams, Zoe. 2022b. "Aspirational Work: A UK Labor Law Analysis." 3 *Journal of Law and Political Economy* 326. https://doi.org/10.5070/LP63259634.

Adams, Zoe. 2022c. *The Legal Concept of Work*. Oxford University Press.

Adams, Zoe. 2023a. "Legal Mobilisations, Trade Unions and Radical Social Change: A Case Study of the IWGB." 52 *Industrial Law Journal* 560.

Adams, Zoe. 2023b. "Trade Unions and the Law: A Materialist Perspective." 82 *Cambridge Law Journal* 30. https://doi.org/10.1017/S0008197322000927.

Adams, Zoe. Forthcoming. "Strategic Implications of Legal Constitution." *Industrial Law Journal*.

Adams, Zoe, and Henning Grosse Ruse-Khan. 2020. "Work and Works on Digital Platforms in Capitalism: Conceptual and Regulatory Challenges for Labour and Copyright Law." 28 *International Journal of Law and Information Technology* 329.

Adams, Zoe, and Johanna Wenckebach. 2023. "Collective Regulation of Algorithmic Management." 14 *European Labour Law Journal* 211.

Adams-Prassl, Jeremias. 2019. "What If Your Boss Was an Algorithm? Economic Incentives, Legal Challenges, and the Rise of Artificial Intelligence at Work." 41 *Comparative Labor Law & Policy Journal* 41. https://ora.ox.ac.uk/objects/uuid:674dbed4-317d-47a9-b10a-688892aeaf34.

Adams-Prassl, Jeremias, Halefom Abraha, Aislinn Kelly-Lyth, Michael "Six" Silberman, and Sangh Rakshita. 2023. "Regulating Algorithmic Management: A Blueprint." 14 *European Labour Law Journal* 124. https://doi.org/10.1177/20319525231167299.

Ajunwa, Ifeoma. 2018. "Algorithms at Work: Productivity Monitoring Applications and Wearable Technology as the New Data-Centric Research Agenda for Employment and Labor Law." 63 *St. Louis University Law Journal* 21. https://scholarship.law.slu.edu/lj/vol63/iss1/4/.

Ajunwa, Ifeoma, and Daniel Greene. 2018. "Platforms at Work: Automated Hiring Platforms and Other New Intermediaries in the Organization of Work." SSRN Scholarly Paper No. 3248675. Social Science Research Network. https://papers.ssrn.com/abstract=3248675.

Alexander, Ernest R., Luigi Mazza, and Stefano Moroni. 2012. "Planning Without Plans? Nomocracy or Teleocracy for Social-Spatial Ordering." 77 *Progress in Planning* 37. https://doi.org/10.1016/j.progress.2011.12.001.

Allen-Robertson, James. 2017. "The Uber Game: Exploring Algorithmic Management and Resistance." Paper presented at AoIR 2017: The 18th Annual Conference of the Association of Internet Researchers, Tartu, Estonia, October 2017. https://repository.essex.ac.uk/20603/.

Ananny, Mike, and Kate Crawford. 2018. "Seeing Without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability." 20 *New Media & Society* 973.

Baiocco, Sara, Enrique Fernández-Macías, Uma Rani, and Annarosa Pesole. 2022. "The Algorithmic Management of Work and Its Implications in Different Contexts." JRC Working Papers Series on Labour, Education and Technology. https://www.econstor.eu/handle/10419/262292.

Barwise, Patrick, and Leo Watkins. 2018. "The Evolution of Digital Dominance." In *Digital Dominance: The Power of Google, Amazon, Facebook, and Apple*, edited by Martin Moore and Damian Tambini, 21. Oxford University Press.

Bertolini, Alessio, and Ruth Dukes. 2021. "Trade Unions and Platform Workers in the UK: Worker Representation in the Shadow of the Law." 50 *Industrial Law Journal* 662. https://doi.org/10.1093/indlaw/dwab022.

Bodie, Matthew T., Miriam A. Cherry, Marcia L. McCormick, and Jintong Tang. 2017. "The Law and Policy of People Analytics." 88 *University of Colorado Law Review* 961. https://scholar.law.colorado.edu/lawreview/vol88/iss4/4/.

Bowring, Bill. 2011. "What Is Radical in 'Radical International Law'?" 22 *Finnish Yearbook of International Law* 27. https://eldh.eu/wp-content/uploads/2020/10/What-is-radical-in-radical-international-law.pdf.

Brabazon, Honor, ed. 2016. *Neoliberal Legality: Understanding the Role of Law in the Neoliberal Project*. Routledge.

Brabazon, Honor. 2021. "Nomocratic Social Change: Reassessing the Transformative Potential of Law in Neoliberal Times." In *Research Handbook on Law and Marxism*, edited by Paul O'Connell and Umut Özsu, 477. Edward Elgar.

Bronowicka, Joanna, and Mirela Ivanova. 2020. "Resisting the Algorithmic Boss: Guessing, Gaming, Reframing and Contesting Rules in App-Based Management." SSRN Scholarly Paper No. 3624087. Social Science Research Network. https://doi.org/10.2139/ssrn.3624087.

Cameron, Lindsey, and Hatim A. Rahman. 2021. "(Not) Seeing Like an Algorithm: Managerial Control and Worker Resistance in the Platform Economy." 2021 *Academy of Management Proceedings* 10248.

Chimni, Bhupinder Singh. 2017. *International Law and World Order*. Cambridge University Press.

Cini, Lorenzo. 2023. "Resisting Algorithmic Control: Understanding the Rise and Variety of Platform Worker Mobilisations." 38 *New Technology, Work and Employment* 125. https://doi.org/10.1111/ntwe.12257.

Cohen, Sheila. 1987. "A Labour Process to Nowhere?" 165 *New Left Review* 34.

Dardot, Pierre, and Christian Laval. 2014. *The New Way of the World: On Neoliberal Society*. Translated by Gregory Elliott. Reprint. Verso.

Davidov, Guy. 2016. *A Purposive Approach to Labour Law*. Oxford University Press.

Davidov, Guy, and Brian Langille. 2011. *The Idea of Labour Law*. Oxford University Press.

De Stefano, Valerio, and Simon Taes. 2021. "Algorithmic Management and Collective Bargaining." European Trade Union Institute.

Diakopoulos, Nicholas. 2016. "Accountability in Algorithmic Decision Making." 59 *Communications of the ACM* 56. https://doi.org/10.1145/2844110.

Duggan, James, Ultan Sherman, Ronan Carbery, and Anthony McDonnell. 2020. "Algorithmic Management and App-Work in the Gig Economy: A Research Agenda for Employment Relations and HRM." 30 *Human Resource Management Journal* 114. https://doi.org/10.1111/1748-8583.12258.

Dukes, Ruth. 2014. "Labour Law or the Law of the Labour Market?" In *The Labour Constitution: The Enduring Idea of Labour Law*, 194. Oxford University Press.

Dukes, Ruth, and Wolfgang Streeck. 2022. *Democracy at Work: Contract, Status and Post-Industrial Justice*. John Wiley & Sons.

Duménil, Gérard, Gérard Duménil, and Dominique Lévy. 2013. *The Crisis of Neoliberalism*. Harvard University Press.

Edwards, Richards. 1980. *Contested Terrain: The Transformation of the Workplace in the Twentieth Century*. New ed. Basic Books.

Eristavi, Konstantine. 2021. "Performing Defiance with Rights." 32 *Law and Critique* 153.

Ferrari, Fabian, and Mark Graham. 2021. "Fissures in Algorithmic Power: Platforms, Code, and Contestation." 35 *Cultural Studies* 814. https://doi.org/10.1080/09502386.2021.1895250.

Findlay, Mark, and Josephine Seah. 2020. "Data Imperialism: Disrupting Secondary Data in Platform Economies Through Participatory Regulation." SMU Centre for AU & Data Governance Research Paper No. 2020/06. https://doi.org/10.2139/ssrn.3613562.

Ford, Michael. 2002. "Two Conceptions of Worker Privacy." 31 *Industrial Law Journal* 135.

Fraser, Nancy. 2016. "Expropriation and Exploitation in Racialized Capitalism: A Reply to Michael Dawson." 3 *Critical Historical Studies* 163. https://www.journals.uchicago.edu/doi/10.1086/685814.

Fraser, Nancy. 2022. *Cannibal Capitalism: How Our System Is Devouring Democracy, Care, and the Planet and What We Can Do About It*. Verso.

Fudge, Judy. 2007. "The New Discourse of Labor Rights: From Social to Fundamental Rights." 29 *Comparative Labor Law & Policy Journal* 29.

Fudge, Judy. 2017. "The Future of the Standard Employment Relationship: Labour Law, New Institutional Economics and Old Power Resource Theory." 59 *Journal of Industrial Relations* 374.

Galič, Maša, and Raphaël Gellert. 2021. "Data Protection Law Beyond Identifiability? Atmospheric Profiles, Nudging and the Stratumseind Living Lab." 40 *Computer Law & Security Review* 105486. https://doi.org/10.1016/j.clsr.2020.105486.

Hacker, Philip, Emil Wiedemann, and Meike Zehlike. 2020. "Towards a Flexible Framework for Algorithmic Fairness." Preprint, submitted October 15, 2020. http://arxiv.org/abs/2010.07848.

Harvey, David. 2016. "Neoliberalism Is a Political Project." *Jacobin Magazine*. https://jacobin.com/search?query=neoliberalism+is+a+political+project.

Hayek, F. A. 1973. *Law, Legislation and Liberty: A New Statement of the Liberal Principles of Justice and Political Economy*. Vol. 1, *Rules and Order*. Routledge.

Hunt, Alan. 1986. "The Theory of Critical Legal Studies." 6 *Oxford Journal of Legal Studies* 1.

ILO [International Labor Organization]. 2022. "Decent Work in the Platform Economy." https://www.ilo.org/resource/decent-work-platform-economy.

Jabłoński, Adam, and Marek Jabłoński. 2020. *Digital Business Models: Perspectives on Monetisation*. Routledge.

Kellogg, Katherine C., Melissa A. Valentine, and Angéle Christin. 2020. "Algorithms at Work: The New Contested Terrain of Control." 14 *Academy of Management Annals* 366. https://doi.org/10.5465/annals.2018.0174.

Knox, Robert. 2011. "What Is to Be Done (with Critical Legal Theory)?" 22 *Finnish Yearbook of International Law* 21.

Knox, Robert. 2012. "Strategy and Tactics." *21 Finnish Yearbook of International Law* 193.

Knox, Robert. 2016. "Law, Neoliberalism and the Constitution of Political Subjectivity: The Case of Organised Labour." In *Neoliberal Legality: Understanding the Role of Law in the Neoliberal Project*, edited by Honor Brabazon, 82. Routledge.

Knox, Robert. 2019. "A Marxist Approach to *RMT v the United Kingdom*." In *Research Methods for International Human Rights Law: Beyond the Traditional Paradigm*, edited by Damian Gonzalez-Salzberg and Loveday Hodson, 13. Routledge.

Kotz, David M. 2008. "Financialization and Neoliberalism." https://people.umass.edu/dmkotz/Fin_and_NL_08_09.pdf.

Lee, Min Kyung. 2018. "Understanding Perception of Algorithmic Decisions: Fairness, Trust, and Emotion in Response to Algorithmic Management." 5 *Big Data & Society* 2053951718756684. https://doi.org/10.1177/2053951718756684.

Lee, Min Kyung, Daniel Kusbit, Evan Metsky, and Laura Dabbish. 2015. "Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers." In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems-CHI '15*, 1603–12. ACM Press.

Lohmann, Larry. 2020. "Interpretation Machines: Contradictions of 'Artificial Intelligence' in 21st-Century Capitalism." 57 *Socialist Register* 50.

Mahieu, René, and Jef Ausloos. 2020. "Recognising and Enabling the Collective Dimension of the GDPR and the Right of Access." Law Archive. https://doi.org/10.31228/osf.io/b5dwm.

Mantelero, Alessandro. 2016. "Personal Data for Decisional Purposes in the Age of Analytics: From an Individual to a Collective Dimension of Data Protection." 32 *Computer Law & Security Review* 238.

Marks, Susan. 2011. "Human Rights and Root Causes." 74 *Modern Law Review* 57.

"Marxism and the Trade Union Question." n.d. World Socialist Web Site. https://www.wsws.org/en/special/library/globalization-international-working-class/21.html.

McGregor, Lorna, Daragh Murray, and Vivian Ng. 2019. "International Human Rights Law as a Framework for Algorithmic Accountability." 68 *International & Comparative Law Quarterly* 309. https://doi.org/10.1017/S0020589319000046.

McNealy, Jasmine. 2013. "Who Owns Your Friends: *PhoneDog v. Kravitz* and Business Claims of Trade Secret in Social Media Information." 39 *Rutgers Computer & Technology Law Journal* 30.

Moore, Phoebe, and Jamie Woodcock, eds. 2021. *Augmented Exploitation: Artificial Intelligence, Automation and Work*. Pluto.

Muldoon, James, and Paul Raekstad. 2023. "Algorithmic Domination in the Gig Economy." 22 *European Journal of Political Theory* 587. https://doi.org/10.1177/14748851221082078.

Mummé, Claire. 2015. "Property in Labour and the Limits of Contract." In *Political Economy and Law: A Handbook of Contemporary Practice*, edited by Ugo Mattei and John Haskell, 400. Edward Elgar.

Mutua, Makau. 1996. "The Ideology of Human Rights." 36 *Virginia Journal of International Law* 589. https://digitalcommons.law.buffalo.edu/journal_articles/572/.

Newman, Nathan. 2017. "Reengineering Workplace Bargaining: How Big Data Drives Lower Wages and How Reframing Labor Law Can Restore Information Equality in the Workplace." 85 *University of Cincinnati Law Review* 693.

O'Connell, Paul. 2021. "The Poetry of the Future: Law, Marxism, and Social Change." SSRN Scholarly Papers. https://doi.org/10.2139/ssrn.3831933.

Pashukanis, Evgeny. 1987. *Law and Marxism: A General Theory*. Rev. ed. Pluto.

Pasquale, Frank. 2015. *The Black Box Society: The Secret Algorithms That Control Money and Information*. Harvard University Press.

Patnaik, Prabhat. 2010. "A Left Approach to Development." 45 *Economic and Political Weekly* 33.

Prassl, Jeremias. 2018. *Humans as a Service: The Promise and Perils of Work in the Gig Economy*. Oxford University Press.

Purtova, Nadezhda. 2018. "The Law of Everything: Broad Concept of Personal Data and Future of EU Data Protection Law." 10 *Law, Innovation and Technology* 40. https://doi.org/10.1080/17579961.2018.1452176.

Rasulov, Akbar. 2010. "'The Nameless Rapture of the Struggle': Towards a Marxist Class-Theoretic Approach to International Law." 19 *Finnish Yearbook of International Law* 243.

Richards, Neil M., and Jonathan H. King. 2013. "Three Paradoxes of Big Data." 66 *Stanford Law Review Online* 41. https://www.stanfordlawreview.org/online/privacy-and-big-data-three-paradoxes-of-big-data/.

Rogers, Brishen. 2020. "The Law and Political Economy of Workplace Technological Change." 55 *Harvard Civil Rights-Civil Liberties Law Review* 531. https://journals.law.harvard.edu/crcl/wp-content/uploads/sites/80/2020/10/Rogers.pdf.

Rogers, Brishen. 2023. *Data and Democracy at Work: Advanced Information Technologies, Labor Law, and the New Working Class*. MIT Press.

Romanosky, Sasha, and Alessandro Acquisti. 2009. "Privacy Costs and Personal Data Protection: Economic and Legal Perspectives." 24 *Berkeley Technology Law Journal* 1061. https://www.heinz.cmu.edu/~acquisti/papers/RomanoskyAcquisti-INFORMS-2009.pdf.

Rosenblat, Alex, Tamara Kneese, and danah boyd. 2014. "Workplace Surveillance." Open Society Foundations' Future of Work Commissioned Research Papers. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2536605.

Rosenblat, Alex, and Luke Stark. 2016. "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers." 10 *International Journal of Communication* 27. https://ijoc.org/index.php/ijoc/article/view/4892/1739.

Sadowski, Jathan. 2019. "When Data Is Capital: Datafication, Accumulation, and Extraction." 6 *Big Data & Society* 2053951718820549. https://doi.org/10.1177/2053951718820549.

Steele, Chandra. 2020. "The Quantified Employee: How Companies Use Tech to Track Workers." *PC Magazine*, February 14, 2020.

Sunga, Jeanel. 2020. "Trade Secrets and the GDPR: 'Reasonable Efforts' of Cybersecurity and the Right for Trade Secrets to Be Forgotten Note." 48 *AIPLA Quarterly Journal* [i].

Taylor, Linnet. 2017. "Safety in Numbers? Group Privacy and Big Data Analytics in the Developing World." In *Group Privacy*, edited by Linnet Taylor, Luciano Floridi, and Bart Van Der Sloot, 13. Springer International.

Uddin, Nasir, and Fariha Hossain. 2015. "Evolution of Modern Management Through Taylorism: An Adjustment of Scientific Management Comprising Behavioral Science." 62 *Procedia Computer Science* 578. https://doi.org/10.1016/j.procs.2015.08.537.

Urgessa, Worku Gedefa. 2016. "The Protective Capacity of the Criterion of Identifiability Under EU Data Protection Law." 2 *European Data Protection Law Review* 521. https://doi.org/10.21552/EDPL/2016/4/10.

Van Doorn, Niels, and Adam Badger. 2021. "Dual Value Production as Key to the Gig Economy Puzzle." In *Platform Economy Puzzles: A Multidisciplinary Perspective on Gig Work*, edited by Jeroen Meijerink, Giedo Jansen, and Victoria Daskalova, 123. Edward Elgar.

Wachter, Sandra, Brent Mittelstadt, and Luciano Floridi. 2017. "Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation." 7 *International Data Privacy Law* 76. https://doi.org/10.1093/idpl/ipx005.

Wall, Illan Rua. 2013. "On a Radical Politics for Human Rights." SSRN Scholarly Papers. https://doi.org/10.2139/ssrn.2259010.

Wood, Alex J. 2016. "Flexible Scheduling, Degradation of Job Quality and Barriers to Collective Voice." 69 *Human Relations* 1989.

Zenonos, Alexandros, Aftab Khan, Georgios Kalogridis, Stefanos Vatsikas, Tim Lewis, and Mahesh Sooriyabandara. 2016. "HealthyOffice: Mood Recognition at Work Using Smartphones and Wearable Sensors." In *2016 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshops)*, 1. IEEE. https://ieeexplore.ieee.org/abstract/document/7457166/.