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VOICES FOR THE NETWORKED SOCIETY

# On Algorithmic Management

## The Importance of Debate on Future Research

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ABSTRACT

A surge of research interest in platform work and the gig economy has seen debates around worker resistance and algorithmic management frequently come to the forefront. Many researchers will now be accustomed to reviewing journal submissions and taking in conference papers that cover these issues. The breadth of the emerging literature means that it builds upon various starting points, theoretical approaches, and histories. Pleasingly, research on work over the past decade has transformed from a relatively marginal pursuit to a highly popular focus across many disciplines, deepening and extending our collective understanding of the topic. This has the potential to introduce fresh ideas and new approaches. However, it does risk research failing to relate to and build upon historical debates in the field. This short article first presents some of the key arguments that have emerged in the research on algorithmic management and considers how knowledge has developed in relation to platform work. It examines some of the strengths and weaknesses of the literature in this area, especially the lack of theoretical debate in an exponentially expanding body of literature. The article finishes by suggesting some key areas in which future research needs to be directed, particularly interrogating the production, practice, and limits of algorithmic management.

## Introduction: On Algorithmic Management

The concept of algorithmic management has been useful for understanding the changes taking place in specific kinds of work. The first time I met a Deliveroo rider (in London in 2016), the literature was considerably thinner than it is now. This rider wanted to understand how their work was being organized, which led to a jointly authored article (Waters & Woodcock, 2017). That early piece discussed ideas about “electronic” and “algorithmic panopticons,” examining the way that data was being collected and used in the labour process. In the piece, Waters tried to reverse engineer their data, self-tracking their routes around the city. Some of the tensions within algorithmic management became clear quite quickly. For example, the strengths and weaknesses of the approach for managing workers, particularly those with a high propensity to strike (Woodcock, 2020).

The literature on the topic has covered issues including algorithms in general (Pasquale, 2015; Kitchin, 2017) and the more specific use of algorithmic management (Lee et al., 2015; Rosenbalt & Stark, 2016; Scholz, 2017). For some in the literature, this involved arguments about the potential for new forms of control that could undermine resistance (Veen et al., 2019; Mahnkopf, 2020) and even that it constitutes a form of “algorithmic domination” (Muldoon & Raekstad, 2022). Nick Srnicek’s (2017) foundational analysis remains an important starting point for understanding the implementation of algorithmic management. However, further research is needed to examine how this form of management is used in practice, especially the ways in which workers respond and resist (Leonardi et al., 2019; Tassinari & Maccarone, 2020; Joyce et al., 2020).

As I have argued elsewhere, the use of artificial intelligence (AI) and algorithmic management in transport platforms can be understood using the classic labour process conceptualization of direction, evaluation, and discipline (Woodcock, 2022). For transport platforms, “direction” is managed by separating the conception and execution of work on the platform. Workers receive instructions on their smartphones but have discretion over the route. This offers the strength of a form of work featuring a straightforward task with a clear start and end point. However, it also features weaknesses associated with the problems that might emerge during the labour process. There are few opportunities for communication or mediation of worker grievances. This form of direction is much harder to implement in the context of complex tasks and tasks without a clear start or end. On transport platforms, “evaluation” can be achieved automatically for the quantitative dimensions of the labour process. For example, where discrete tasks are performed, these can be measured and timed. To address qualitative dimensions (e.g., customer service), evaluation from customers can be elicited. Discipline is achieved through rewards and punishments, with bonuses used to encourage engagement during peak times and deactivations (i.e.,

the suspension or sacking of workers) playing a disciplinary function. These automated actions have proven effective in managing a highly dispersed workforce. However, bonuses increase the cost of labour power and may not always achieve the intended aims, especially if workers find a way to game the system. Similarly, deactivations can be a blunt disciplinary tool, drawing attention to the absence of other forms of intermediate intervention.

For transport platforms, these forms of algorithmic management allow for the automation of a layer of supervisory management (Woodcock, 2020). However, it is worth noting that this has not broadly automated management. For example, Deliveroo – whose core activity is charging customers and restaurants for the delivery of food (Deliveroo, 2023) – is estimated to have around 4,000 employees and approximately 135,000 couriers, around 50,000 of which are in Britain. This means that the company has one employee for approximately every 30 couriers internationally (or twelve in Britain). Although many of these are likely involved in marketing and other activities (which are, nonetheless, necessary for the success of the delivery business), numerous people are required to manage the courier workforce. Algorithmic management is often presented as a finished product that can be applied with little difficulty to manage workers. What this large number of employees suggests is that the practice of algorithmic management requires significant input and ongoing commitment from the company. The software requires maintenance and updating, changes are tested and implemented, and decisions continue to be made. As such, rather than automating the management function, the supervisory element is increasingly automated. In the case of transport platforms, this is the role of the dispatcher.

Deliveroo is not alone in facing challenges to the model upon which algorithmic management systems have been built. Across platforms in different jurisdictions, there have been challenges to employment status (De Stefano & Aloisi, 2019). Significant questions persist about the sustainability of this work organization model – for example, the average tenure of a Deliveroo courier is only 11 months. This means many of these platforms rely upon available access to potential workers who can be drawn onto the platform, workers who are either pushed out of the work directly or through problems that emerge from the work, including but not limited to low pay and dangerous conditions. Furthermore, since going public, Deliveroo has posted US\$777 million in operating losses, following the trend of food delivery companies across Europe and the US losing US\$20 billion after becoming publicly listed (Hodgson & Craggs Mersinoglu, 2024). It remains to be seen whether this model of bogus self-employment and algorithmic management can be used effectively to make a profit without the massive investment of venture capital prevalent within the platform economy.

## Debates on Algorithmic Management

Notably, the increasing research on platform work features limited discourse on the significance of this form of work organization, contrasting sharply with the extensive debates surrounding the organization of work and the use of technology in call centres. As Miriam Glucksmann (2004, p. 795) has argued, call centres became “one of the most researched” kinds of work, contributing “material for debates about ‘surveillance versus resistance,’ work degradation and the relevance of an electronic panopticon analogy.” For example, as I have argued, call centre technology allowed for “an unprecedented level of surveillance; every call encounter is permanent, every mistake could be punishable in the future” (Woodcock, 2017, p. 66). However, this leaves open many questions about the labour process and the implications of these management techniques. The literature on call centres features both empirical and theoretical debates, particularly relating to labour process theory (Taylor & Bain, 1999), emotional labour (Hochschild, 2012), Foucauldian analogies of the electronic panopticon (Fernie & Metcalf, 1997), and criticisms of the Foucauldian approach (McKinlay & Taylor, 1998). Despite some similarities to debates around algorithmic management (Woodcock, 2020), discussion has been less intense.

Developing these kinds of debates requires having a stake in the empirical research and different parts of the literature. Labour process theory approaches, at least in name (that is, without necessarily engaging with the theoretical lineage), have become commonplace in the literature. However, we are yet to have major debates about the development of theory to make sense of algorithmic management. To do so, we must move beyond empirical research presenting yet more case studies and instead interrogate the significance of this for management more widely. This requires researchers risking the fallout from debate to move the literature forward.

## Future Research

To develop research on algorithmic management, more empirical research is needed in three key areas. First, we need to inquire into how (and why) algorithmic management technologies are being developed. Like other forms of technology, configurations of algorithmic management used in platform work and other applications are developed from within existing social relations, that is, in the context of specific material interests and to achieve particular aims. Too little is understood about the process of developing algorithmic management tools. Further empirical data is needed to explore the contradictions behind the development, including the limitations and contradictions this involves.

Second, more research is needed to critically explore how (and why) algorithmic management is being used in practice. Technology has been introduced into workplaces already characterized by power relationships and conflicts over other parts of the work. Although many platforms began as systems featuring algorithmic management, further examples from other kinds of work demand attention. For instance, cases in which these tools are introduced to reorganize the labour process present important opportunities to further our understanding, including when they fail. In particular, this provides a way to understand the objectives being sought, namely, increasing efficiency, furthering managerial control, and reducing the workforce. Further research can also explore the limits to these tools in practice.

Third, and perhaps most interesting, is research that explores effective strategies being developed to challenge algorithmic management. This could involve the subversion of, resistance to, or alternative use of algorithmic management tools. By drawing attention to the contradictions inherent in the labour process and workers' ability to challenge management, we can examine the strengths and weaknesses of algorithmic management in practice, potentially also providing an important corrective to more abstract accounts of algorithmic management.

In each of these research areas, further empirical research is needed to interrogate the claims being made about how AI is used for algorithmic management. Similar to many AI implementations, important differences appear between the claims being made by companies (who often have an interest in overstating the possibilities) and the use in practice. As Mike Cook (2018) has reminded us, "many people are misrepresenting AI in order to make it appear more intelligent than it is." As such, a particularly interesting topic for further research could explore the limits of claims made about the role of AI within algorithmic management. Platform work has provided a "laboratory for capital" (Cant, 2019) to experiment with tools like algorithmic management. However, experiments do not always generalize. Many previous forms of management intervention have gone on to shape work much more widely. For example, although Taylorism was rarely applied in the specific and concrete way that Taylor envisaged, it became a guiding principle for the organization of work more generally, and we now see elements of Taylorism across many forms of work, including, but not limited to, platform work. What is needed now is critical research that can uncover or reconstruct the struggles over algorithmic management as they are developing. This means not being afraid to stake out positions in debates over the future of work. However, this also means recognizing that algorithmic management may not become a dominant form and could even be less significant than some researchers have argued. Alternatively, it could have ramifications far beyond what we currently imagine. Debating these issues in relation to the history of work is one way we can begin to chart a path forward in the literature.

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