

Unfulfilled?



Setting a Research Agenda for Work, Labour and Employment in E-Commerce Logistics Jobs

Based on a Review of the Public Evidence about Amazon

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Executive Summary

E-commerce logistics is an important area of employment, in the UK and many other countries. Amazon announced, in May 2021, that it was increasing its UK workforce by 10,000, to a total of 55,000, leading change in a sector employing around 188,000 warehouse operatives in 2018. These jobs are undergoing rapid change, including the introduction of many new automated and digitalised systems that work alongside humans. This raises a number of important questions on the future of work in this sector.

Questions have been raised about the quality of these jobs, and the challenges employers face in recruiting and retaining workers. By way of example working conditions in Amazon's warehouses, or 'fulfilment centres', have been the subject of considerable criticism in recent years, by journalists, campaigners, trade unions, and politicians. These conditions have important implications for the future of work in e-commerce and logistics because Amazon is a leading, multinational company in this sector. It is surprising, therefore, that there is a lack of sustained academic research into these work and employment practices. Journalists and campaigners have of course investigated Amazon, but some may dismiss their accounts as partial or anecdotal.

This paper sets out to outline the research themes that these disparate accounts pose. Informed by an extensive review of available evidence, totalling more than 500 academic and non-academic sources we have used Amazon's fulfilment centres as a case study to explore how the changing world of work is unfolding. This paper explores the working conditions inside these centres, as well as the process of work and employment. It forms an initial stage of a larger programme of research, and its purpose was to clarify the most important questions to be addressed in subsequent stages.

The review was conducted over a nine-month period in 2020, alongside conversations with trade union officials who have considerable experience of representing Amazon workers in the UK. The researchers also attempted to interview fulfilment centre employees, but this was not possible due to a combination of factors arising from the Covid-19 pandemic and workers' stated apprehension to engage following discussions we had with union officials to facilitate these sessions due to fear of recrimination by their employers. A draft report was shared with Amazon with an invitation to contribute their perspective, but the company did not respond. The perspective of Amazon management has nevertheless been reflected in this review through the inclusion of 21 sources published by Amazon.

While this working paper highlights key issues identified through the review, and areas requiring further investigation, the accompanying presents the theoretical framework and research methodology, as well as a more detailed presentation of the available evidence and the process informing this working paper.

This paper is split into four main topic areas that connect the evidence we have reviewed. This paper will discuss these topics and the questions that they pose for future research inquiry.

These topics are:

- The way the work is done in fulfilment centres
- The employment models and systems used for warehouse operatives
- The conditions of work in warehouses
- How workers responded to Physical and Mental Demands

Questions for further research

This report sets out a range of important areas for investigation within warehouse jobs in the e-commerce and logistics sector, to guide future research in strengthening job quality and sustainability. In particular, given the rapid development of automation and digitisation within this sector, we propose that the following questions should be addressed:

1. How do workers experience the application of digital technologies at work?
2. What inequalities exist in workers' relationship to digital technologies? (including differences in access to work benefits, other beneficial information and differences in subjection to management control)
3. How do workers and trade unions use digital technologies to try to improve experiences of work?
4. What are the conditions of employment and working conditions, both formally determined and experienced, which emerge from these digitally mediated relationships between employers and workers?
5. How do these conditions of employment and working conditions affect workers' wellbeing, and how do these vary by gender, age, ethnicity, nationality, and disability?
6. How could digital technologies be used by employers, workers, and TUs, to enhance workers' wellbeing more effectively, to improve workforce equality and diversity, and to avoid harm?

Fulfilment centre work is socially complex, increasingly mechanised, and highly digitised.

Our research to date highlights that the work in this sector is socially complex, increasingly mechanised and highly digitised. These three core components raise many questions for researchers considering the future of work and we plan to continue to research these themes in greater detail in the future.

The success of this model of work means that receiving, stowing, picking, sorting, and packing customer orders efficiently is essential to the success of e-commerce operations.

To understand it you must be aware of these three inter-linked issues.

- *socially complex* – in the sense that it comprises a line of production that is organised into a set of distinct, yet connected, work roles carrying the same level of authority and status intersecting with a line of management that is organised into a set of distinct, yet connected, work roles carrying successively higher levels of authority and status;
- *increasingly mechanised* – in the sense that, with each iteration of the fulfilment centre model to date, the level of mechanisation of the work process (the replacement of labour power by mechanical power and human control by mechanical control) has increased;
- *highly digitised* – in the sense that the process of fulfilment, including the actions of workers, is closely monitored, recorded, and directed by computer.

The available evidence suggests this work can also be precarious and in some cases harmful to workers.

The research that informs this report is part of a wider programme of research on the nature of work and employment that is being undertaken by members of the Work Futures Research Group¹ at Nottingham Trent University.

1. Work Futures Research Group, <https://www.ntu.ac.uk/research/groups-and-centres/groups/work-futures-research-group>

Introduction

This report is intended to be a contribution to research concerning the future of work in the e-commerce and logistics sector. It proposes important questions for investigation concerning the understanding of work, labour, and employment, by collating and analysing the available evidence regarding Amazon's fulfilment centres around the world. The literature that was reviewed for this report was published both online and offline, and the largest part of it was non-academic, amounting to more than 500 sources that are detailed in the bibliography of the evidence review that accompanies this working paper. The purpose of the evidence review is to provide a comprehensive analysis and synthesis of the available evidence about work in Amazon's fulfilment centres, in order to inform debates about the future of work, worker organising, and our relationship to online commerce. This working paper outlines the key topics and insights from our research. The evidence review, which includes a greater range of sources, examples, and quotations from workers' accounts, is available at <https://www.ntu.ac.uk/research/groups-and-centres/projects/unfulfilled-work,-labour-and-employment-in-amazons-fulfilment-centres>.

1.1. Overview of Amazon's E-Commerce Operations

Amazon is a multinational corporation, based in Seattle, Washington, whose services include 'e-commerce, cloud computing, digital streaming, and artificial intelligence.'² This report focuses on Amazon's e-commerce division – more precisely, the process by which it fulfils orders for products that are made via its retail website. The physical basis of this process is the network of warehouses in which Amazon stores items of merchandise, which are advertised for sale on its website and which Amazon prepares for delivery to the customer's address.

Amazon is a retailer, competing on the basis of price and speed of delivery. However, unlike other companies, Amazon provides its retail service entirely electronically, and the process of fulfilment results in a good that can be purchased swiftly, delivered quickly, and, if necessary, returned easily. According to Amazon's UK corporate website, it 'has more than 175 operating fulfilment centres and more than 150 million square feet of space where employees pick, pack, and ship Amazon customer orders to the tune of millions of items per year'.³

The process of work, the working conditions, and the employment of workers within Amazon's sortable and non-sortable fulfilment centres are the focus of this piece of research as an example of the development of work within the e-commerce sector. Amazon was chosen due to its market position and distribution across the world.

2. 'What We Do,' *Amazon*, <https://www.aboutamazon.com/what-we-do>.

3. 'Fulfilment in our buildings,' *Amazon*, <https://www.aboutamazon.co.uk/amazon-fulfilment/fulfilment-in-our-buildings>.

Process of Fulfilment

The available evidence gives a generally consistent picture of the way labour is organised within Amazon's fulfilment centres. This section outlines findings regarding the distinct work processes and roles within the line of production, the impact of mechanisation, including the increasing use of robots, and of digitisation, and presents the limited available evidence on management structure and ancillary roles. This outline is intended as a guide and context for future research to focus in greater detail on particular roles and the relationship between them, as well as to identify roles and elements of the work process where less information is currently available publicly.

2.1 Line of Production

The construction of a packaged order may be analysed as a series of distinct, yet connected, processes. The evidence highlights the need to understand how the roles and processes react with each other and how mechanisation and digitisation are being utilised.

2.1.1 Work Processes

Exactly how many processes are involved is confidential to Amazon. However, at least twelve, distinct, work processes can be identified from published information about work in Amazon's fulfilment centres, between the arrival of goods at the fulfilment centre and their dispatch as packages to Amazon's sortation centres and delivery stations. John Holland describes these tasks as being organised into five distinct roles and says: 'These groups have almost zero contact with each other. In fact, the way work is organised means you can quite easily go all day without ever having a conversation with a co-worker'.⁴ Of these, 'stowers' and 'pickers' have received the most attention in published accounts, and consequently feature prominently in this report. Further research is needed concerning other roles in the fulfilment process, and how all of these roles interact with each other, with managers, and with digital systems and robots.

2.1.2 Mechanisation

The range of equipment that has been used in successive versions of Amazon's fulfilment centres includes, at the lowest level of mechanisation, the use of simple hand tools, such as a trolley, a tote, or a pallet; at the highest level of mechanisation, the use of fully automatic machine tools such as conveyors and robots; and, between the highest and the lowest levels, the use of semi-automatic machine tools, such as a forklift truck.

Since it introduced robots into its fulfilment centres in 2014, Amazon has deployed over 200,000 robotic drive units in locations across the world.⁵ Some of these transport objects

4. John Holland, 'Amazon Inquiry,' *Notes From Below*, October 7, 2020, <https://notesfrombelow.org/article/amazon-inquiry>.

5. Brian Heater, 'Amazon says it has deployed more than 200,000 robotic drives globally,' *TechCrunch*, June 5, 2019, <https://techcrunch.com/2019/06/05/amazon-says-it-has-deployed-more-than-200000-robotic-drives-globally/>.

from one area of the fulfilment centre to another, thereby eliminating the need for transportation by labour power or by mechanical conveyor.⁶ The movement of these robots is fully automatic; that is, it is controlled by a computer programme, by sensors on the body of the robot, and by QR codes on the floor of the fulfilment centre. Indeed, such is the level of sophistication of the technology employed that hundreds of robots can be in operation simultaneously, without collision.⁷ They are also capable of detecting when their battery is running out of charge, of self-docking at a charging point, and of determining when their motor should be replaced.⁸ Other forms of robots in use by Amazon include the Pegasus robotic drive unit, the robotic palletiser, the robo-stow, the automatic packing machine, and the SLAM machine.

The introduction of robots into the fulfilment process has been associated with significant changes in work processes and roles. For example, at its Denver sortation centre, Amazon introduced the role of flow control specialist, to monitor the operation of the Pegasus robots.⁹

As it continues to improve the technology of fulfilment, it seems likely that Amazon will continue to increase the level of mechanisation and thus to continue to replace labour power with mechanical power and human control with automatic control. However, as each new technology calls for new forms of labour, the process of mechanisation may well run up against limits arising from the relative cost of machines and labour or other factors.¹⁰ As discussed further below, the available evidence suggests that, so far, the introduction of robotics into the process of work may have had some negative consequences for workers. Although Amazon disputes this, there are important questions here which need to be addressed through further research.

2.1.3 Digitisation

The mechanisation and automation of fulfilment has gone hand in hand with digitisation, which is “the process of converting information into a digital (i.e. computer-readable) format” through organising it into “bits.”¹¹ Digitisation plays an important role in the speed with which Amazon fulfils customer orders, and also affects the required speed of

6. ‘What robots do (and don’t do) at Amazon fulfilment centers,’ *Amazon*, <https://www.aboutamazon.com/amazon-fulfillment/our-innovation/what-robots-do-and-dont-do-at-amazon-fulfillment-centers/>, and Nick Wingfield, ‘As Amazon Pushes Forward With Robots, Workers Find New Roles,’ *The New York Times*, September 10, 2017, <https://www.nytimes.com/2017/09/10/technology/amazon-robots-workers.html>. According to Christoph Roser, the introduction of the robotic drive units has enabled Amazon to increase the size of the inventory by 50% and to reduce the cost of fulfilment by approximately 40%. See Christoph Roser, ‘The Inner Workings of Amazon Fulfillment Centers – Part 1,’ *All About Lean*, October 22, 2019, <https://www.allaboutlean.com/amazon-fulfillment-1/>.

7. Christoph Roser, ‘The Amazon Robotics Family: Kiva, Pegasus, Xanthus, and more...,’ *All About Lean*, March 31, 2020, <https://www.allaboutlean.com/amazon-robotics-family/>.

8. Michael Kenward, ‘Inside Amazon’s technology test-bed,’ *The Engineer*, February 18, 2019, <https://www.theengineer.co.uk/inside-amazons-technology-test-bed/>.

9. Meg Coyle, ‘New robots, new jobs,’ *News, Amazon*, June 5, 2019, <https://www.aboutamazon.com/news/operations/new-robots-new-jobs>.

10. Nick Statt, ‘Amazon says fully automated shipping warehouses are at least a decade away,’ *The Verge*, May 1, 2019, <https://www.theverge.com/2019/5/1/18526092/amazon-warehouse-robotics-automation-ai-10-years-away>.

11. ‘Digitization,’ *Wikipedia*, last edited February 3, 2021, <https://en.wikipedia.org/wiki/Digitization>.

the labour process.¹²

By tracking the movements of workers' hands during robotic stowing and picking and converting this information into digital format, Amazon can calculate, via software algorithms, the location of items of merchandise in the inventory, thereby optimising space, and the efficient movement of the Kiva robots. Further research is needed concerning how these automated and digitised systems can best be deployed in a way that fosters the wellbeing of human workers.

2.2 Line of Management

Much less has been written about the positions that constitute the line of management inside a typical Amazon fulfilment centre than about the positions that constitute the line of production. However, some workers have referred to particular management roles, when talking about their experiences of working in Amazon's fulfilment centres, and it is possible to work out from these reports how the management of at least some fulfilment centres is organised.¹³ The lowest position in the management hierarchy appears to be that of 'process guide' or 'production assistant' and the highest position appears to be that of 'general manager', with the positions of 'area manager', 'operations manager', 'senior operations manager' and 'assistant general manager' in between. The experiences and perspectives of Amazon managers could be a valuable area for future research because of the unique perspective afforded by their role in the fulfilment process, including their position as a sometime intermediary between business targets and human workers.

2.3 Ancillary Roles

It is apparent, from reports of experiences of working in Amazon's warehouses, that the process of fulfilment also depends on the work of people who occupy a number of ancillary roles. These roles include that of 'problem solver', 'inventory controller', 'amnesty processor', 'ambassador', 'facilities technician', and on-site 'medical representative'. There are likely to be other roles (whether provided through external contractors or not), such as caterer, cleaner, and security guard, although we found no discussion of these roles in the published accounts. Of course, there will also need to be workers in human resources to assist with such functions as worker recruitment, discipline, and termination of contracts.

As there is far less available evidence regarding ancillary roles, this is an important area for further research.

12. According to Christoph Roser, Amazon processes about 37 million orders every day; see Christoph Roser, 'The Inner Workings of Amazon Fulfillment Centres – Part 5,' *All About Lean*, November 19, 2019, <https://www.allaboutlean.com/amazon-fulfillment-5/>.

13. The sortable and non-sortable fulfilment centres, in particular.

Employment of Warehouse Operatives

This section of the report presents important areas for further research regarding the conditions of employment for e-commerce and logistics workers, including their contractual status, pay, benefits, and discipline, and the implications of these conditions for the character of their employment.

3.1 Conditions of Employment

Conditions of employment refer to the rights and obligations pertaining to the roles of employer and employee, providing the formal framework under work is performed.

3.1.1 Contractual Status

Our analysis identified that workers are employed on two employment models. They are either employed as workers on open-ended contracts of employment hired directly by Amazon, whereas fulfilment centre workers on fixed-term contracts are hired indirectly via employment agencies, under contract with Amazon.

3.1.2 Pay

On 1 November 2018, Amazon increased the minimum hourly wage for its workers to \$15 in the USA and £10.50/£9.50 (inside/outside London) in the UK, presenting this as a response to demands for higher pay that politicians and trade unions had been making.¹⁴ However, some commentators interpreted the increase in hourly wage rates as being driven by changes in conditions in the labour market since Amazon's US competitors, such as Target, Costco, and Walmart, had also decided to increase hourly rates of pay.¹⁵ At the same time, Amazon removed its Variable Compensation Plan (VCP) and Restricted Stock Units (RSU) scheme, for which some of its workers had been eligible.¹⁶ It also raised wages in response to the Covid-19 pandemic, in March 2020, but reversed this decision two months later. Following complaints

14. See Bernie Sanders, 'If the economy is "roaring", why are so many Americans still struggling?' *The Guardian*, July 16, 2018, <https://www.theguardian.com/commentisfree/2018/jul/16/bernie-sanders-town-hall-low-wages-amazon-mcdonalds-walmart>, and the campaign by trade unions in the USA for \$15 per hour: 'About Us,' Fight For \$15, <https://fightfor15.org/>. See also Section 2 of 'GMB Response to the Low Pay Commission General Consultation on National Minimum Wage 2014,' GMB Policy Passed at Congress 2014, GMB Union, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/425236/LPC_consultation_response_GMB_2014-15.pdf.

15. Richard Partington, 'Amazon raises minimum wage for US and UK employees,' *The Guardian*, October 2, 2018, <https://www.theguardian.com/technology/2018/oct/02/amazon-raises-minimum-wage-us-uk-employees>; Dominic Rushe, 'Critics fear Amazon's minimum wage hike will distract from its other issues,' *The Guardian*, October 6, 2018, <https://www.theguardian.com/us-news/2018/oct/06/critics-fear-amazons-minimum-wage-hike-will-distract-from-its-other-issues>; and Laura Stevens, 'Amazon to Raise Its Minimum U.S. Wage to \$15 an Hour,' *The Wall Street Journal*, October 2, 2018, https://www.wsj.com/articles/amazon-to-raise-its-minimum-u-s-wage-to-15-an-hour-1538476027?mod=hp_lead_pos1.

16. 'Amazon Raises Minimum Wage to \$15 for all U.S. Employees,' News, Amazon, October 2, 2018, <https://www.aboutamazon.com/news/workplace/amazon-raises-minimum-wage-to-15-for-all-u-s-employees>.

over the reversal, Amazon announced that it would give its frontline workers, including those in its warehouses, a bonus payment of \$500, if they worked full time, and \$250, if they worked part time, throughout the month of June.¹⁷ This highlights the contested and variable character of wages, indicating it is an important area for future research.

3.1.3 Benefits

Time Off

The available evidence identifies three types of time off for Amazon workers:

- paid time off (PTO), subject to prior approval
- vacation time, subject to prior approval
- unpaid time off (UPT), allocated as a lump sum of 20 hours each quarter.¹⁸

According to John Burgett, writing about his experiences working for Amazon in the United States, the allowance of PTO is 48 hours per year, while the allowance of vacation time is 40 hours in the first year.¹⁹ He also tells us that leave cannot be taken during periods of peak demand, that it is deducted for missing compulsory overtime shifts, and that, if too much unpaid leave is taken, workers will be dismissed automatically.^{20,21}

Amazon's seasonal workers, who are employed through agencies, are also entitled to take time off work but the entitlement appears to be less generous than the entitlement for Amazon employees. In the USA, for example, Integrity Staffing Solutions gives their employees 40 hours of 'Approved Time Off (ATO)' on 'Day 21' of the assignment; what this means is that the only type of time off that these workers are entitled to take is unpaid time off.²²

In addition to the time off work that is accrued, workers are sometimes offered what is called 'Voluntary Time Off' (VTO). Workers are supposed to be able to decide whether or not to accept VTO, which is unpaid. However, there have been some claims of pressure from managers to accept VTO, calling its voluntary character into question.²³

Workers' entitlement to time off, their remuneration for this time off, and their control over when they do and don't take time off, therefore appear to be important areas for further research.

17. Annie Palmer, 'Amazon gives front-line workers a \$500 coronavirus bonus,' News, June 29, 2020, <https://www.cnbc.com/2020/06/29/amazon-gives-front-line-workers-a-500-coronavirus-bonus.html>. See also 'Victory: Amazon workers win bonus for working through the pandemic,' Blog, Organise, June 30, 2020, <https://www.organise.org.uk/blog/2020/6/30/victory-amazon-workers-win-bonus-for-working-through-the-pandemic>.

18. Bryan Menegus, 'On Amazon's Time,' *Gizmodo*, June 13, 2018, <https://gizmodo.com/on-amazon-s-time-1826570882>.

19. These figures are for full-time, hourly paid employees. See 'Paid Time Off for U.S. Amazon Employees,' Amazon Jobs, https://www.amazon.jobs/en/landing_pages/pto-overview-us.

20. John Burgett, 'UPT, VCP,' *Amazon Emancipatory*, 2016, <https://amazonemancipatory.com/upt-vcp>.

21. See also Isobel Asher Hamilton and Áine Cain, 'Amazon warehouse employees speak out about the "brutal" reality of working during the holidays, when 60-hour weeks are mandatory and ambulance calls are common,' *Business Insider*, February 19, 2019, <https://www.businessinsider.com/amazon-employees-describe-peak-2019-2?r=US&IR=T>.

22. John Burgett, 'October 2015 Mass Exodus,' *Amazon Emancipatory*, 2016, <https://amazonemancipatory.com/october-2015-mass-exodus>.

23. Bryan Menegus, 'On Amazon's Time,' *Gizmodo*, June 13, 2018, <https://gizmodo.com/on-amazon-s-time-1826570882>.

Insurance

Another benefit to which directly employed, full-time Amazon employees are entitled to receive, in the USA, is health insurance (that is, medical, dental, vision, and disability insurance). However, questions have been raised about whether part-time employment may be used in some cases strategically to avoid paying health insurance.²⁴ This could be further explored by comparing part-time and full-time employment between countries that do and do not have employment-based health insurance schemes.

Pensions

Some Amazon employees in the USA, who are at least 18 years of age, are also eligible to join Amazon's pension plan, also known as the 401(k) Plan, as soon as they are hired. By contrast, it seems that agency employees who work for Amazon are not entitled to join any form of pension plan.²⁵

3.1.4 Discipline

Predicated on the speed and consistency with which it fulfils customer orders, Amazon's business model requires workers to move as directed and at pace. The available evidence highlights a range of mechanisms by which Amazon workers are disciplined to fulfil these goals, with a focus on speed and attendance. These could therefore be important areas for further research.

Performance

Many workers have disclosed that they have been disciplined for not meeting Amazon's expectations with regards to 'time off task' and productivity. These accounts suggest that if the computer system detects that a worker has been inactive for longer than a pre-determined period of time, a manager is alerted and is expected to talk to the worker to get them back on task as quickly as possible. Various workers have also confirmed that the computer system monitors their productivity or 'rate' and that they may be given a written warning, or even dismissed, for not working quickly enough. It also appears that workers can be disciplined for failing to meet quality expectations. The interaction of human managers and computerised systems within this disciplinary process should be taken into account for future research.

There are indications that the disciplinary process, at least for productivity violations, is becoming harsher. For example, William Stolz reports that the Shakopee fulfilment centre in Minnesota has been 'experimenting [with] a new system that looks at us on a curve, depending on our productivity rate, without telling us what our actual rate is. The bottom 5% performers will

24. Brian Johnson, 'Unpacking the Supply Chain: The Struggle Against Amazon in Portland,' in *Strike the Giant! Transnational Organization against Amazon, Fall 2019 journal*, ed. *Transnational Social Strike Platform* (Transnational Social Strike Platform, 2019), 29, https://www.transnational-strike.info/wp-content/uploads/Strike-the-Giant_TSS-Journal.pdf.

25. See 'Benefits Overview for U.S. Amazon Employees excluding CT, IL, IN, MD, NC, PA, UT, & WI,' Amazon Jobs, [https://www.amazon.jobs/en/landing_pages/benefitoverview-us#:~:text=Amazon%20401\(k\)%20Plan,up%20contributions%20are%20not%20matched](https://www.amazon.jobs/en/landing_pages/benefitoverview-us#:~:text=Amazon%20401(k)%20Plan,up%20contributions%20are%20not%20matched).

have to speed up their work if they are below rate.’ Other reports suggest the bottom 10% are threatened with disciplinary action, if they do not improve.²⁶ It is important to bear in mind that, in such a system, some workers will always be at the bottom of the performance ranking, and that the pressure to avoid being in this position will be felt across the workforce. Gathering further evidence to test these claims about the targeting of the bottom 5% or 10% and, if confirmed, to explore the impact across the workforce, is therefore an important area for further research.

Attendance

Published reports indicate that for absences from work or lateness starting a shift, Amazon disciplines workers by issuing them with disciplinary points (which are also called ‘Credits,’ by Integrity Staffing Solutions, or strikes, by some workers).²⁷ Integrity agency employees are told that they ‘can accrue a maximum of 6 Credits per assignment’ and that their contract may be terminated, if they accrue more than this number. Similar arrangements have been described in the UK, from a number of different sources.²⁸ Further research would be beneficial here to explore how such disciplinary mechanisms are applied across the workforce, taking into account reasons for absence or lateness related to caring responsibilities, which may have implications for gender equality.

26. Ralf Ruckus, ‘Confronting Amazon,’ *Jacobin*, March 31, 2016, <https://www.jacobinmag.com/2016/03/amazon-poland-poznan-strikes-workers>; Transnational Social Strike Platform, ‘Migrants and Locals Together in the Strike: Interview with William Stolz,’ in *Strike the Giant! Transnational Organization against Amazon, Fall 2019 journal*, ed. Transnational Social Strike Platform (Transnational Social Strike Platform, 2019), 54, https://www.transnational-strike.info/app/uploads/2019/11/Strike-the-Giant_TSS-Journal.pdf.

27. Spencer Soper, ‘Inside Amazon’s Warehouse,’ *ZNET*, September 24, 2011, <https://zcomm.org/znetarticle/inside-amazons-warehouse-by-spencer-soper/>; James Bloodworth, *Hired: Six Months Undercover in Low-Wage Britain* (London: Atlantic Books, 2019), 39.

28. BBC, ‘The Truth Behind the Click,’ *Panorama*, November 25, 2013, <https://www.bbc.co.uk/programmes/b03k5kzp>; Mary O’Connor, ‘Sick Amazon “elves” face sack,’ *The Times*, December 11, 2016, <https://www.thetimes.co.uk/article/sick-amazon-elves-face-sack-plp32qwtz>; James Bloodworth, *Hired: Six Months Undercover in Low-Wage Britain* (London: Atlantic Books, 2019), 42.

Working Conditions in Warehouses

There is a remarkable degree of consistency in the accounts that fulfilment centre workers have given about the demands placed on them by the fulfilment process and its impact on their physical and mental health; and these issues have consequently attracted the attention of investigative journalists, trade unionists, and social campaigners. This provides a strong case for further research concerning the level of physical and mental demands placed on workers, and the extent to which they enable workers' to meet their essential needs, and the physical and mental harms arising from this work.²⁷ This section elaborates on the key areas of concern, and presents a conceptual framework for exploring physical and mental demands and their consequences.

4.1 Physical Demands

Different characteristics of the fulfilment process impose various types of physical demand on Amazon workers. These characteristics include the ways in which workers are required to move, which can be conceptualised as the frequency, duration, and extension of their movement, and the ambient temperature and humidity under which this movement is performed, which is highlighted in the evidence review as an important factor in how work activity affects the human body.

4.1.1 Frequency

The frequency of the work process can be understood as the number of repeated occurrences of a work activity in a unit of time, which is a standard way to measure the productivity of workers. For example, the productivity of a stower is measured as the number of units successfully stowed within an hour, and productivity targets are enforced by management.

Published reports make apparent that an increase in the frequency of the work process has been associated with the introduction of robotic systems of stowing and picking. For example, a former senior operations manager at Amazon told *Reveal* that, when robots were introduced, 'the productivity expectations for workers more than doubled' so that, whereas a worker would be expected to pick at 'about 100 items an hour' without the use of robotics, a worker would be expected to pick at 'rates of up to 400 an hour at robotic fulfilment centers.'²⁸ Further evidence of this tendency is presented in the evidence review that accompanies this summary. Such evidence cautions against the assumption that robots will reduce the physical demand on workers, and calls for further empirical research to understand the ways robots interact and affect workers.

27. Marina Jabsky and Charlene Obernauer, *Time Off Task: Pressure, Pain, and Productivity at Amazon* (New York: New York Committee for Occupational Safety & Health, 2019), 4-5.

28. Hamilton Nolan, 'Inside an Amazon Warehouse, the Relentless Need to "Make Rate"', *Gawker*, June 6, 2016, <https://gawker.com/inside-an-amazon-warehouse-the-relentless-need-to-mak-1780800336>.

4.1.2 Duration

Duration relates to the length of the working day, which encompasses both the expected working hours and breaks in the work process.

The length of the shift for fulfilment centre workers is usually reported as being ten-and-a-half hours with a half-hour unpaid lunch break and two, paid, 15-minute breaks; and the number of shifts that are worked each week is usually reported as being four. Shorter night-time shifts have been reported, including an eight-hour overnight shift that ends at 4.45am and four- and five-hour morning shifts; however, the DCH1 Amazonians United organisation and an Amazon official spokesperson were cited in early 2021 describing the replacement of these shorter shifts by a new 'megacycle' of shifts involving 10-hour shifts starting around 1am, to enable customers to place orders right up to midnight and then have them immediately packed.²⁹

4.1.3 Extension

The extension of the work process describes the spatial organisation of work activity, with implications for how far workers must move their bodies to complete work tasks.

The distance some workers must walk is often mentioned in published accounts. The work processes that are usually referred to, in this respect, are manual stowing and picking, which involve movement by foot, along aisles of shelving, for distances of up to 10 miles, or sometimes more, each shift. While the introduction of robots is reducing the literal distance walked, as discussed below there are indications it might not have reduced equivalent physical exertion.

As discussed in Section 2.2, the use of robots eliminates the need for stowers and pickers to walk to the shelves of inventory because the robots bring the shelves ('pods') to the stowers and pickers at their workstations. However, stowing and picking remain physically demanding because they still involve repetitive movements such as bending downwards to reach bins on lower levels of the pod or stretching upwards to reach bins on higher levels. Indeed, Amazon has publicly recognised the demands of such work, although their response appears to have been to introduce advanced training in 'body mechanics' rather than to reduce productivity targets.³⁰ Moreover, the fact that productivity targets for both stowing and picking are significantly higher in the newer fulfilment centres suggests that the introduction of robotics, far from making the work process less physically demanding, may be making it more physically demanding. For example, when Alan Selby worked as a picker alongside Kiva robots in the Tilbury fulfilment centre, his fitness tracker showed that, for one shift, his level of physical exertion was equivalent to walking at least 10 miles.³¹ This requires further study.

29. Lauren Kaori Gurley, 'Amazon Is Forcing Its Warehouse Workers Into Brutal 'Megacycle' Shifts,' *Vice*, February 4, 2021, <https://www.vice.com/amp/en/article/y3gk3w/amazon-is-forcing-its-warehouse-workers-into-brutal-megacycle-shifts>.

30. Amazon press release, 'From Body Mechanics to Mindfulness, Amazon Launches Employee-Designed Health and Safety Program called WorkingWell Across U.S. Operations', 17 May 2021, <https://press.aboutamazon.com/news-releases/news-release-details/body-mechanics-mindfulness-amazon-launches-employee-designed>.

31. Alan Selby, 'Timed toilet breaks, impossible targets and workers falling asleep on feet: Brutal life working in Amazon warehouse,' *The Mirror*, November 25, 2017, <https://www.mirror.co.uk/news/uk-news/timed-toilet-breaks-impossible-targets-11587888>.

4.1.4 Ambient temperature and humidity

The review identified numerous examples of fulfilment centres where workers complained about changes in the ambient temperature and humidity of the work process, including extremes of heat and cold, making the work process more demanding, physically, at these times.³² Without further research it will be hard to ascertain the impact short, medium and long term impacts for workers.

4.2 Impact of Physical Demands

Trade unions and investigative journalists have generated a wealth of evidence, through surveys of workers' experiences and through requests for information from public authorities, which gives us an approximate idea of the rate at which workers in the line of production in Amazon's fulfilment centres are being injured, as well as of the types of injuries that they are suffering. This has been verified by data shared by public bodies. This indicates a need for further research to explore in more detail the differences in physical demands between work roles, between fulfilment centres, and between Amazon and other companies in the e-commerce and logistics sector—it is hoped that such comparisons may help to identify comparatively safe working practices which might inform a reduction of harm in the future. Some key examples of this evidence are presented below in order to make the case for further research, and are discussed further in the evidence review.

4.2.1 Ambulance Call-Outs

Business Insider submitted requests, under the UK's Freedom of Information Act (2000), for information about ambulance call-outs to some of Amazon's fulfilment centres in the UK and found that the rates at which ambulances were called out increased during the peak season.³³

Such evidence calls for serious consideration of the causes of these increased risks, including the consequences of the increased pace of work during these peak periods, and the development of measures to better protect workers.

4.2.2 Physical Pain

The GMB trade union carried out a survey, in 2018, of its members who were working in seven Amazon fulfilment centres in the UK. Using a technique called 'body mapping', which involves asking workers to identify parts of the body in which they experience pain,

32. Kate Davidson, 'Amazon Workers Describe Heat And Noise At Portland Warehouse,' News, July 13, 2019, <https://www.opb.org/news/article/amazon-flex-portland-warehouse-working-conditions/>; Hamilton Nolan, 'True Stories of Life as an Amazon Worker,' *Gawker*, February 8, 2013, <https://gawker.com/true-stories-of-life-as-an-amazon-worker-1002568208>. For other examples, see the evidence review that accompanies this summary.

33. Isobel Asher Hamilton and Áine Cain, 'Amazon warehouse employees speak out about the "brutal" reality of working during the holidays, when 60-hour weeks are mandatory and ambulance calls are common,' *Business Insider*, February 19, 2019, <https://www.businessinsider.com/amazon-employees-describe-peak-2019-2?r=US&IR=T>.

the GMB found that 87% of respondents experienced both constant or occasional pain, 10% experienced only occasional pain, and only 3% did not experience any pain. From the written responses, the GMB said, that many workers were 'either suffering or starting to suffer' from musculoskeletal conditions and that 'fatigue' was 'a major issue' for them because productivity targets were 'high' yet there was insufficient 'recovery time'.³⁴ Particular issues were highlighted regarding how the company responded to the needs of pregnant workers; and similar issues were identified in a survey conducted by the New York Committee for Occupational Safety and Health (NYCOSH) in 2019. This suggests there is an urgent need for further research into the causes of such pain to inform strategies for harm reduction at Amazon and in other businesses using similar processes.

4.2.3 Work-Related Injuries

In a survey of workers at Amazon's Staten Island fulfilment centres, carried out by the New York Committee for Occupational Safety and Health (NYCOSH), 18% said that they had sustained an injury while at work, and 10% said that they had sustained an injury more than once.³⁵ As the researchers noted, an injury rate of 18% is three times higher than the national, average, work-related injury rate for the warehouse industry as a whole in 2017 (5.2%) and almost seven times higher than the national average for all industries.³⁶

In the UK, the GMB trade union requested information under the Freedom of Information Act (2000) from local authorities about accidents that Amazon warehouses had reported to the Health and Safety Executive. It found that the total had increased from 152 in 2016-17 to 230 in 2017-18 and 240 in 2018-19.³⁷

In its latest investigation of injury rates in Amazon's fulfilment centres in the United States of America, *Reveal* found that the rate of serious injury was significantly higher in fulfilment centres operating with robots than in those without and that, over the course of a year, the rate of serious injury was highest during the weeks of Prime Day and Cyber Monday.³⁸

These indications of differences in injury rates between companies, over time, and between more and less automated sites, can help to direct further longitudinal and comparative research in order to identify the critical factors that contribute to safer workplaces for future work design for Amazon and other companies.

34. GMB, GMB Union Report On Amazon, 2018 (London: GMB Union, 2018), 7, https://www.etui.org/sites/default/files/ez_import/working-in-a-modern-day-amazon-fulfilment-centres-in-the-uk.pdf.

35. Marina Jabsky and Charlene Obernauer, *Time Off Task: Pressure, Pain, and Productivity at Amazon* (New York: New York Committee for Occupational Safety & Health, 2019), 9.

36. *Ibid.*, 12.

37. Rob Davies, 'Concerns over safety at Amazon warehouses as accident reports rise,' *The Guardian*, February 17, 2020, <https://www.theguardian.com/technology/2020/feb/17/concerns-over-safety-at-amazon-warehouses-as-number-of-incidents-rise>; GMB Union, 'GMB calls for parliamentary inquiry into Amazon as conditions for workers worsen,' News, February 17, 2020, <https://www.gmb.org.uk/news/gmb-calls-parliamentary-inquiry-amazon-conditions-workers-worsen>.

38. Will Evans, 'How Amazon hid its safety crisis,' *Reveal*, September 29, 2020, <https://www.revealnews.org/article/how-amazon-hid-its-safety-crisis/>.

4.3 Mental Demands

The review of evidence on Amazon suggests that at least five mental demands on workers should be considered. These concern questions about control over the work process, trust in co-workers, accommodation of physiological needs, feeling valued, and opportunities for personal development. Each of these demands relates to a particular human need and they are discussed, in detail, in the evidence review.

4.3.1 Work Control

The published literature raise questions about the extent to which Amazon workers who receive, pick, stow, sort, and pack within fulfilment centres have any significant degree of control over:

- how hard they must work (task intensity);
- which tasks they must carry out (task allocation);
- how they are required to carry out the tasks that they are set (task execution);
- the standard to which they must work (task quality).

This calls for further research, including the implications of such control, or lack thereof, on workers' physical and mental wellbeing.

4.3.2 Trust

Consistent themes emerge within the published reports, regarding claims of managers

- emotionally manipulating production workers;
- attempting to deceive both external authorities and production workers;
- victimising production workers and other managers;
- harassing and intimidating production workers;
- subjecting production workers to unreasonable surveillance;
- showing negligence with regard to production workers' health and safety.

In addition, production workers in the USA report problems with receiving compensation from Amazon's insurers, when they are seriously injured.

Further research is called for to explore the veracity of these claims and, where proven, the extent to which they are isolated incidents or systemic. Such an understanding can then inform appropriate action.

4.3.3 Accommodation of Physiological Needs

Published reports reveal a common set of complaints, which call into question the extent

to which production workers' need for physiological stability are fully satisfied by the working environment. The most common complaints refer to:

- workers being sanctioned, when unwell, or receiving inadequate medical treatment, when injured;³⁹
- managers not making reasonable adjustments to the work process, in light of workers' physical disabilities;⁴⁰
- scheduled breaks being too short, given the time that workers must spend walking to the break area;⁴¹
- the allowance of time off task being inadequate, given the time that workers must spend finding a toilet or water dispenser that is operational;^{42,43}
- managers failing to accommodate the physical limitations and other needs of pregnant workers.^{44,45}

This calls for further research to establish the veracity and extent of such issues, and the implications for equality across the workforce, in order to inform strategies to ensure all workers needs are accommodated in the future.

39. Organise, Amazon: What's it like where you work? (Organise, 2018), 7-8, <https://static1.squarespace.com/static/5a3af3e22aeba594ad56d8cb/t/5ad098b3562fa7b8c90d5e1b/1523620020369/Amazon+Warehouse+Staff+Survey+Results.pdf>; H. Claire Brown, 'How Amazon's On-Site Emergency Care Endangers the Warehouse Workers It's Supposed to Protect,' *The Intercept*, December 2, 2019, <https://theintercept.com/2019/12/02/amazon-warehouse-workers-safety-cyber-monday/>.

40. Michael Sainato, "'I'm not a robot": Amazon workers condemn unsafe, grueling conditions at warehouse,' *The Guardian*, February 5, 2020, <https://www.theguardian.com/technology/2020/feb/05/amazon-workers-protest-unsafe-grueling-conditions-warehouse>; Max Zahn and Sharif Paget, "'Colony of Hell": 911 Calls From Inside Amazon Warehouses,' *The Daily Beast*, March 11, 2019, <https://www.thedailybeast.com/amazon-the-shocking-911-calls-from-inside-its-warehouses>.

41. Organise, Amazon: What's it like where you work? (Organise, 2018), 11, <https://static1.squarespace.com/static/5a3af3e22aeba594ad56d8cb/t/5ad098b3562fa7b8c90d5e1b/1523620020369/Amazon+Warehouse+Staff+Survey+Results.pdf>; James Bloodworth, *Hired: Six Months Undercover in Low-Wage Britain* (London: Atlantic Books, 2019), 52.

42. Chavie Lieber, 'The human costs of Black Friday, explained by a former Amazon warehouse manager,' *Vox*, November 20, 2018, <https://www.vox.com/the-goods/2018/11/20/18103516/black-friday-cyber-monday-amazon-fulfillment-center>.

43. In its response to the investigation by *Business Insider* into working conditions inside its fulfilment centres, Amazon said that its warehouse workers 'have easy access to toilet facilities which are just a short walk from where they are working.' However, one Amazon worker in the United States challenged this response, telling *Business Insider* that it was 'not true' that toilets were 'a short distance' from work areas; the worker said that there were not enough toilets and that 'they are always a good distance from you.' See Shona Ghosh, 'Peeing in trash cans, constant surveillance, and asthma attacks on the job: Amazon workers tell us their warehouse horror stories,' *Business Insider*, May 5, 2018, <https://www.businessinsider.com/amazon-warehouse-workers-share-their-horror-stories-2018-4?r=US&IR=T>.

44. GMB, GMB Union Report On Amazon, 2018 (London: GMB Union, 2018), 8, https://www.etui.org/sites/default/files/ez_import/working-in-a-modern-day-amazon-fulfillment-centres-in-the-uk.pdf; Organise, Amazon: What's it like where you work? (Organise, 2018), 10, <https://static1.squarespace.com/static/5a3af3e22aeba594ad56d8cb/t/5ad098b3562fa7b8c90d5e1b/1523620020369/Amazon+Warehouse+Staff+Survey+Results.pdf>.

45. The TUC reports the case of a pregnant supervisor at the Doncaster fulfilment centre, who had been working for Amazon for eight years with an 'unblemished record' and who was called to attend a disciplinary hearing for gross misconduct, in the summer of 2019, for five hours and without food or drink. (The supervisor had been absent from work through pregnancy-related illness.) After Amazon gave her a final written warning, the supervisor appealed the decision; but Amazon organised the appeal to take place on the day she was due to give birth, and 'wanted her punishment to commence after her maternity leave.' See TUC, *Challenging Amazon: What can we do about Amazon's treatment of its workers?* (London: TUC, 2020),

4.3.4 Feeling Valued

Some reports suggest that some fulfilment centre workers do not feel that their managers appreciate their achievements at work, with implications for mental wellbeing.⁴⁶ This calls for further investigation.

4.3.5 Opportunities for Personal Development

The extent to which Amazon's fulfilment centre workers are able to develop reflects the extent to which they can realise their human potential. Published reports suggest that, although workers are sometimes moved between departments, these transfers are usually made in accordance with the needs of the business (for example, to cover labour shortages); and we found no evidence that they are part of a systematic policy of relieving workers from same task through single or multiple shifts.⁴⁷

Moreover, the published reports of workers' experiences suggest there is little opportunity for internal promotion.⁴⁸ There are reports that Amazon offers some of its employees the opportunity to become an Amazon Ambassador, a role which involves training new workers;⁴⁹ but some claim that this involves additional work and responsibility without monetary benefit.⁵⁰ Developmental opportunities within the e-commerce and logistics sector would therefore benefit from further research.

4.4 Impact of Mental Demands

Although there is less evidence about the consequences of the mental demands of working inside an Amazon fulfilment centre, the evidence that does exist highlights risks of mental harm, including disorders of anxiety, mood, and stress, which suggest an urgent need for further research.

46. Alan Selby, 'Timed toilet breaks, impossible targets and workers falling asleep on feet: Brutal life working in Amazon warehouse,' *The Mirror*, November 25, 2017, <https://www.mirror.co.uk/news/uk-news/timed-toilet-breaks-impossible-targets-11587888>.

47. John Burgett suggests that the movement of workers between departments also has the effect of making worker organisation more difficult to achieve. See John Burgett, 'Union Fight,' *Amazon Emancipatory*, 2016, <https://amazonemancipatory.com/union-fight>, and Alana Semuels, 'What Amazon Does to Poor Cities,' *The Atlantic*, February 1, 2018, <https://www.theatlantic.com/business/archive/2018/02/amazon-warehouses-poor-cities/552020/>.

48. Josh Dzieza, "'Beat the Machine": Amazon Warehouse Workers Strike to Protest Inhumane Conditions,' *The Verge*, July 16, 2019, <https://www.theverge.com/2019/7/16/20696154/amazon-prime-day-2019-strike-warehouse-workers-inhumane-conditions-the-rate-productivity>.

49. Michael Sainato, "'I'm not a robot": Amazon workers condemn unsafe, grueling conditions at warehouse,' *The Guardian*, February 5, 2020, <https://www.theguardian.com/technology/2020/feb/05/amazon-workers-protest-unsafe-grueling-conditions-warehouse>.

50. Lindsay Rittenhouse, 'Amazon Warehouse Employees' Message to Jeff Bezos – We Are Not Robots,' *The Street*, September 29, 2017, <https://www.thestreet.com/investing/stocks/amazon-warehouse-employees-discuss-grueling-work-14312539>.

4.4.1 Anxiety

In the second wave of the Organise survey of UK-based fulfilment centre workers, 57% of respondents said that they had become ‘a lot more anxious’ since they started working at Amazon.⁵¹ *Business Insider* also reported Amazon fulfilment centre workers being in a constant state of anxiety about losing their jobs, if they did not meet their performance targets.⁵² This was confirmed by many other accounts, as detailed in the evidence review, and calls for further research.

4.4.2 Mood

In the second wave of the Organise survey of UK-based fulfilment centre workers, 55% of respondents said that they had ‘suffered from depression’ since they had started working at Amazon, while just under 10% said that they had ‘considered suicide’.⁵³

In the United States, *The Daily Beast* examined 911 call logs, and ambulance and police reports, relating to 46 Amazon fulfilment centres across 17 states and calculated that emergency workers had been ‘summoned to Amazon warehouses at least 189 times for suicide attempts, suicidal thoughts, and other mental-health episodes’.⁵⁴ Other workers, including undercover journalists, also reported feeling depressed or exhibiting symptoms of depression, while working in an Amazon fulfilment centre. This calls for further comparative research to put such figures in context, and detailed qualitative investigation to ascertain the extent to which the experience of work contributes to these mood disorders.

4.4.3 Stress

Many reports of experiences of working in an Amazon fulfilment centre refer to the stress and pressure of the work. It should also be noted that, according to a former manager of the packing section of a fulfilment centre in California, area managers were under pressure to remove “‘the weak links”’ in production – a pressure that they transmitted to the workers in the line of production.⁵⁵ Indeed, another former manager, this time in Kentucky, said: “‘There would be phone conferences [with Seattle], and all this screaming, about production numbers. That was always the problem; the production

51. Organise, Amazon: What’s it like where you work? (Organise, 2018), 3, <https://static1.squarespace.com/static/5a3af3e22aeba594ad56d8cb/t/5ad098b3562fa7b8c90d5e1b/1523620020369/Amazon+Warehouse+Staff+Survey+Results.pdf>.

52. Shona Ghosh, ‘Peeing in trash cans, constant surveillance, and asthma attacks on the job: Amazon workers tell us their warehouse horror stories,’ *Business Insider*, May 5, 2018, <https://www.businessinsider.com/amazon-warehouse-workers-share-their-horror-stories-2018-4?r=UK>.

53. Organise, Amazon: What’s it like where you work? (Organise, 2018), 3-5, <https://static1.squarespace.com/static/5a3af3e22aeba594ad56d8cb/t/5ad098b3562fa7b8c90d5e1b/1523620020369/Amazon+Warehouse+Staff+Survey+Results.pdf>.

54. Max Zahn and Sharif Paget, “‘Colony of Hell”’: 911 Calls From Inside Amazon Warehouses,’ *The Daily Beast*, March 11, 2019, <https://www.thedailybeast.com/amazon-the-shocking-911-calls-from-inside-its-warehouses>.

55. Chavie Lieber, ‘The human costs of Black Friday, explained by a former Amazon warehouse manager,’ *Vox*, November 20, 2018, <https://www.vox.com/the-goods/2018/11/20/18103516/black-friday-cyber-monday-amazon-fulfillment-center>.

numbers weren't high enough".⁵⁶ This highlights both the importance of including managers' accounts in future research and the need for research to document the sources and means of transmission of such stress.

56. Hal Bernton and Susan Kelleher, 'Amazon warehouse jobs push workers to physical limit,' *The Seattle Times*, April 3, 2012, <https://www.seattletimes.com/business/amazon-warehouse-jobs-push-workers-to-physical-limit/>.

Workers' Responses to Physical and Mental Demands

The responses by workers to the demands of their job can provide important insights into the nature of the work process. Our review identified a pattern of resistance to job demands at Amazon that at times has taken both collective and individual forms.

5.1 Collective Resistance

In some cases, Amazon's fulfilment centre workers are showing that it is possible to challenge management's performance expectations and put forward demands for change that relate to unmet human needs. So far there is little evidence that this has resulted in positive changes, and the scale of the task facing Amazon workers attempting to organise cannot be understated; yet there are indications that worker organisation is gaining momentum. This is manifest in Amazon workers organising themselves to carry out protests in the form of demonstrations, work stoppages, slowdowns, and petitions, all of which represents an attitude of collective resistance to the working environment of the fulfilment centre. Moreover, in 2020, a new international interest group coalition was launched, under the banner 'Make Amazon Pay'.⁵⁷ Other examples of collective resistance are detailed in the evidence review that accompanies this summary.

There are reports that Amazon has taken steps to undermine these efforts. For example, in early 2021 the company launched a website targeting workers at its warehouse in Bessemer, Alabama, with the intention of convincing them to vote against a proposal to form a union, and the company was also accused of sending anti-union text messages to workers.⁵⁸

5.2 Individual Resistance

Finally, it should be noted that, in addition to the forms of collective resistance described above, Amazon fulfilment centre workers have also tried to resist managers' demands individually – for example, by sabotaging equipment, cheating Amazon's computer system, speaking to managers about specific issues, making confidential disclosures to government agencies, taking legal action, and resigning.

Engaging with workers' resistance offers a means for future research to draw insights from an important form of worker voice, carrying expertise because of their position embedded within the work process. Of course, there are also many workers who cooperate willingly and do not resist, and research also needs to understand their perspectives.

57. A set of 'Common Demands' can be downloaded from the coalition's website; see 'Make Amazon Pay: Common Demands,' *Make Amazon Pay*, <https://cloud.progressive.international/s/W9Td3D592F5NY4x/download>.

58. Lauren Kaori Gurley, 'Amazon Launches Anti-Union Website to Derail Alabama Union Drive,' *Vice*, January 15, 2021, <https://www.vice.com/amp/en/article/5dpkad/amazon-launches-anti-union-website-to-derail-alabama-union-drive>.

Working Paper Summary

This working paper and evidence review highlights a number of critical research topics that the NTU Work Futures Research Group will be pursuing in the future.

Whilst we have used Amazon fulfilment centres as a case study our knowledge of the wider logistics sector and others highlights that further research is required to understand the role increasing mechanisation and digital technologies have on the work process and on individuals physical and mental wellbeing.

Our goal is to help understand the changing nature of work across the UK and to ensure that the future of work allows for fulfilling work for all that provides benefits beyond pure monetary return.

This working paper outlines a number of key areas for further research that we will be exploring. These are summarised below in the form of six questions.

1. How do workers experience the application of digital technologies at work?
2. What inequalities exist in workers' relationship to digital technologies?
(including differences in access to work benefits, other beneficial information and differences in subjection to management control)
3. How do workers and trade unions use digital technologies to try to improve experiences of work?
4. What are the conditions of employment and working conditions, both formally determined and experienced, which emerge from these digitally mediated relationships between employers and workers?
5. How do these conditions of employment and working conditions affect workers' wellbeing, and how do these vary by gender, age, ethnicity, nationality, and disability?
6. How could digital technologies be used by employers, workers, and TUs, to enhance workers' wellbeing more effectively, to improve workforce equality and diversity, and to avoid harm?

Please contact Work Futures to discuss developing future work on any of these research questions.

1. Methodology

1.1 Reviewing the evidence

Given the aim of the research, which was to develop an understanding of work, labour, and employment in Amazon’s fulfilment centres, and given the lack of academic research on Amazon’s fulfilment centres, the researchers adapted the traditional method of literature review into an expanded evidence review; that is, instead of only reviewing academic knowledge about work, labour, and employment in Amazon’s warehouses, the researchers looked for all publicly available sources that could add to our understanding about the nature of work, labour, and employment in Amazon’s fulfilment centres and thus help to direct further enquiry to inform the future of work in the e-commerce and logistics sector.

The vast majority of the evidence that was reviewed for this report was non-academic and published online. Relevant items were identified through entering appropriate search terms – for example, ‘Amazon and fulfilment’, ‘Amazon and work’, ‘Amazon and working conditions’, ‘Amazon and robots’, etc. – and through following embedded links in online items.

The research team was particularly interested in sources containing workers’ accounts because it recognised that fulfilment centre workers are best placed to describe the demands of the process of fulfilment and its impact on their wellbeing.¹³

In all, over 500 items of literature were consulted. These can be categorised according to the type of organisation that produced them, as shown in Table 1 below. In addition, the research team consulted various news videos about Amazon, personal videos in which current and former Amazon warehouse workers communicate their experience of working in an Amazon warehouse, and information published by one of Amazon’s employment agencies (Integrity Staffing Solutions). 21 of these sources were published by Amazon, and a further Amazon source published in 2021 was added because it represented an important statement on the health of Amazon workers.

	Mainstream media	Academia	NGO	Government	Corporations	Labour movement
Journal						1
Book	3	19				
Book chapter		1				
Article	265	35		1	8	95
Working paper		1				
Research report			3			11
Survey		1				
Blog post	12				4	10
Press release			2		2	6
Letter				4	2	1
Job advertisement					4	
Social media post/ page						5
Petition						6
Website				2		3
Submission to government						1
Wikipedia entry	4					

1.2 Limitations

The researchers attempted to ensure the validity of the evidence that they used through triangulation of different sources of information. The researchers found a remarkably high degree of consistency in workers' accounts of their working conditions and conditions of employment and in the existing analyses of the process of fulfilment; and these accounts and analyses were also consistent with the information obtained through interviews with trade union officials. Where inconsistencies were found, these are noted and discussed in the evidence review; it should of course be noted that these sources do not present a comprehensive picture of the sector.

As is noted above the researchers also engaged a number of stakeholders to review the material that was presented to add additional context. We wish to thank academic and non-academic colleagues for their comments and thoughts which we have endeavoured to incorporate into this working paper.

This paper aims to be the start of a conversation about the future of work and the way we research work in a rapidly changing environment where innovation and technological developments alter the way many people undertake their work. This review has highlighted two key challenges when conducting research in this arena.

Firstly, this paper has only been able to review information that is in the public domain. The design and operation of fulfilment centres is commercially sensitive and therefore held confidentially and many businesses in this sector are unwilling to engage with researchers to understand the work process and its impact on the workforce. Whilst some of the material we have reviewed has been shared by current or ex-employees it may be limited by the extent to which workers can recall and communicate, accurately, their experiences of work and any inherent bias they may have to their employer. Additional material shared by FOI requests is also limited by the detail of any internal record keeping. Further in-depth work with and at specific sites may well help to improve our understanding of the sector and how work is changing.

This evidence review that informs this working paper was also unable to engage directly with workers within these businesses due to the restrictions in place from the Covid-19 pandemic. It is therefore unable to directly engage with the voices of workers or managers in this sector. Where possible we have triangulated our themes and research questions through interviews with trade union officials and secondary source material but in the future we will aim to develop more in-depth research to include the views of workers across the sector. Recruitment of workers as peer researchers is intended to aid with this.

Finally we would like to acknowledge that material we reviewed is presented from across different regulatory and legislative boundaries where employment law and cultural differences do affect both workers and workplaces in significant ways. These have been highlighted in the evidence review but further study into the way new work models and patterns interact with regulation and legislation is required.

Work Futures Research Group

The rapidly changing world of work has been highlighted as an urgent concern by government, academics, and numerous professional bodies. The Work Futures Research Group builds on and consolidates areas of strength across the School of Social Sciences that are addressing some of the most challenging issues these changes present.

The group takes a distinctive approach in that it encompasses the wider social, economic, political, and organisational contexts in which work takes place and connects the study of work to the development of innovative work practices and healthy workplaces.

For more information visit:

<https://bit.ly/NTUWorkFutures>

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