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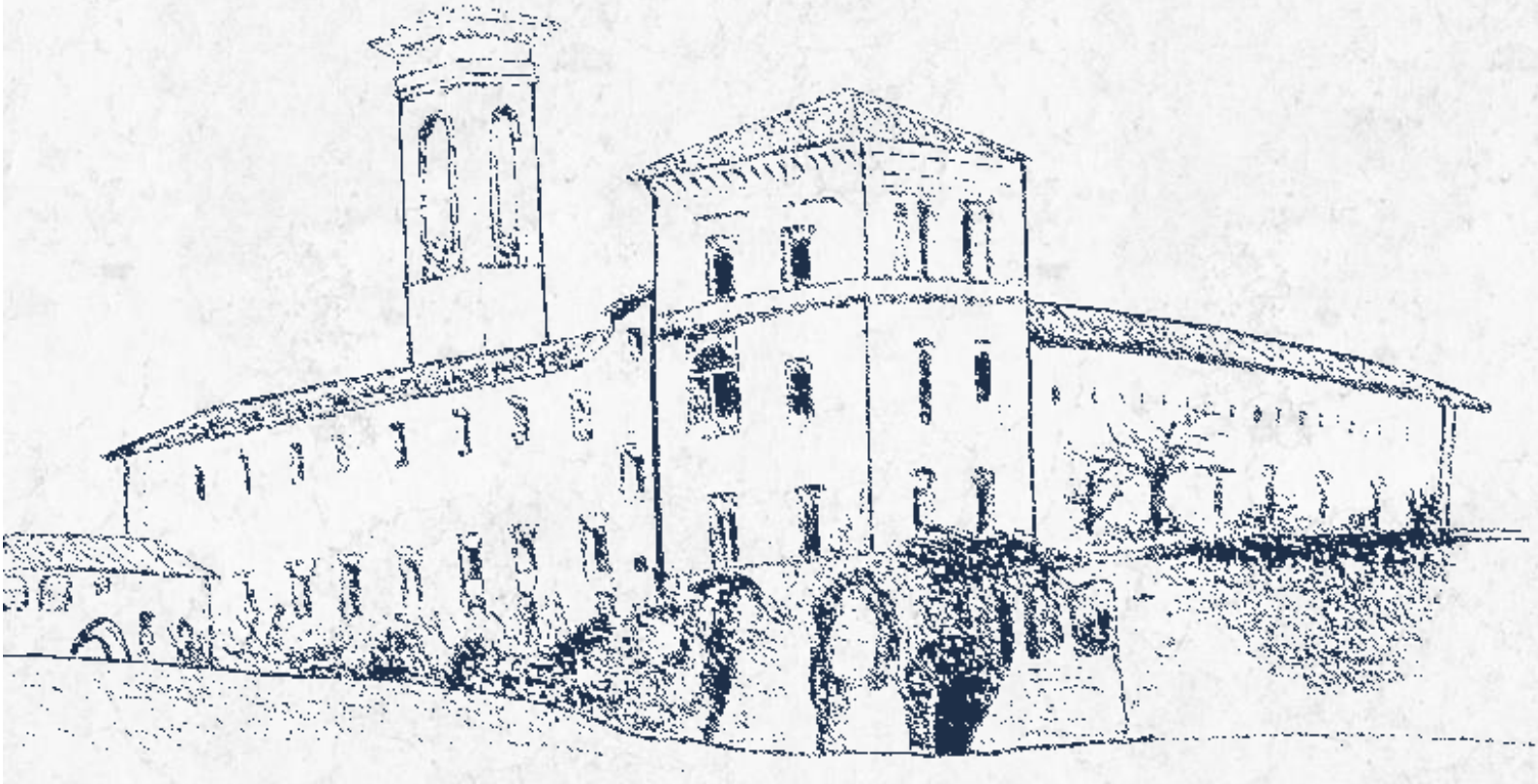

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We're Not Robots": Legal Limits on Work Intensity at the AI-Powered Warehouse

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Abstract. Do legal norms in the OSH sphere set a boundary for the use of AI and algorithms at the workplace? With a focus on Amazon warehouses, this paper compares the rationale underlying recent laws enacted in Poland and the United States, which aim to define the amount of physical labour that can be performed by an employee during the working shift. In the U.S., warehouse quota laws were passed in five states in response to an organization of the work process that was found to cause high worker injuries. This system also came under scrutiny in Poland. At its centre were violations of an ergonomics standard that sets limitations on the workload, quantified as admissible values of energy burned by workers on the job. Such regulations express the OSH principle that employers must adapt the work to the individual. This paper argues that "individualization" as a legal premise might present a real challenge to AI-powered work organization, which overlooks individual predispositions and tailors the work to the most productive employees.

Keywords: *OSH; AI; Amazon; Work intensity; Energy expenditure.*

1. Introduction

Speaking at a rally about why he and his co-workers were demanding union recognition at DCK6, an Amazon delivery station in San Francisco, Dori Goldberg, a warehouse associate and Teamsters member, explained: "I'm literally sick and tired of being sick and tired all the time. I'm

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motivated to organise because I want to be able to live my life outside of work and have a good-quality job where I am not overextended"[1]. Despite Amazon's AI-augmented cobots, robotic arms, advanced algorithmic management systems, and other cutting-edge technology, Goldberg performs repetitive manual labour that involves sorting packages and loading them onto trucks. Like many other Amazon workers in the U.S., Goldberg and his co-workers are also demanding wage increases and a union[2].

Since Amazon is a highly centralised global employer, warehouse associates around the world are subject to very similar workplace policies and perform tasks in the same work processes. In effect, work conditions at U.S. company warehouses mirror those at company warehouses in countries like Poland. In 2021, Maria Magdalena Malinowska, an Inicjatywa Pracownicza union representative and Amazon associate at the POZ1 fulfilment centre near Poznań, was dismissed for allegedly taking photos documenting the removal of a co-worker's dead body from the warehouse by a funeral company. Malinowska had come to the warehouse that day to attend accident assessment proceedings following the death of yet another co-worker on the shift two months earlier. Amazon refused to allow her to enter the warehouse and participate in the accident assessment. She was fired after speaking to the press about the possible circumstances of these deaths, which she believed were linked to overwork[3].

These accounts testify to the low quality of many of the jobs that are left to humans in the warehousing industry, especially at companies like Amazon, often seen as synonymous with technological innovation. What follows is a discussion of work intensification as a key issue that underpins the demanding nature of physical labour at the AI-powered warehouse. Following Todolí-Signes, work intensification is understood here as the "process of raising the expected workload of an employee by increasing the amount of tasks to be undertaken or shortening the time allowed to

[1] L. Feliz Leon, *Efforts to Organize Amazon Are Advancing Across the US*, Jacobin, (11 October 2024), https://jacobin.com/2024/10/amazon-teamsters-union-san-francisco (last accessed: 28 February 2025).

[2] J. Rosenblum, *For Amazon Workers, $30 Is the New $15*, The Nation, (8 August 2024), https://www.thenation.com/article/activism/amazon-workers-30-demand/ (last accessed: 28 February 2025).

[3] The labour court in Poznań ruled Malinowska's termination was unlawful and she was reinstated in the spring of 2024.

complete those tasks'"[4]. The process of work intensification can be distinguished as more exploitative for workers than the process of raising productivity quotas (sometimes called standards). The latter tends to be governed by labour law or is subject to rules set during collective bargaining between social partners. Work intensification seems to be the outcome when rules on productivity quotas are either not in place, are unenforceable, or are easily bypassed.

This paper examines the role of digital technology in raising the workload. At Amazon's warehouses, technology is used to determine productivity quotas, which serve as a gauge of work intensification. The paper then explores the causal link between technologically mediated work intensification and occupational hazards, as this link is delineated in recent legal acts passed in the U.S. and Poland. These legislative initiatives were enacted with the (more or less directly expressed) aim of regulating physical labour performed in the context of high interaction between humans and technological tools, both in the forms of advanced machinery and AI-powered software. Whether focused on describing the productivity quota and what constitutes productive time, as in the case of U.S. bills, or on setting an ergonomics standard that prescribes a maximum workload during the working shift, as in Poland, these legislative initiatives can be seen as frontline responses to the rapidly evolving work environment.

The paper closely examines the regulations introduced and then compares the underlying rationale. Although the legal approaches differ, as they must, given the distinct nature of U.S. common law versus Poland's civil law system, the laws discussed share the fundamental premise that the amount of labour to be performed by a worker must be clearly defined. Secondly, the laws push employers to consider employees' individual predispositions in setting their performance expectations. By formulating this requirement, the regulations express a key provision of OSH law, according to which employers must "adapt the work to the individual." Articulated in legal acts on the international level and concretised in national (and state) case law, the principle of "individualisation" derives from the employer's obligation to protect the health and life of each and every worker. This obligation is fulfilled by providing a safe and healthy working environment. The paper argues that a broadly indiscriminate organisation of the labour process, which by design ignores employees'

[4] A. Todolí-Signes, *Making algorithms safe for workers: occupational risks associated with work managed by artificial intelligence*, Transfer: European Review of Labour and Research, 27(4), (2021), p. 6.

individual characteristics, not only exposes employees to occupational hazards but also upsets the terms of the employment relationship, as it models the process on the most productive employee, rather than the average or mediocre-performing worker.

The paper concludes by positing that workers are entitled to expect that technological innovation in the work process should serve to improve their well-being, and not only productivity results.

This paper focuses entirely on Amazon as a leading employer in the warehousing industry in both the U.S. and Poland. The idea for it was inspired by exchanges with colleagues and organisers affiliated with Amazon Workers International (AWI)[5], a transnational coalition of warehouse associates involved in everyday shopfloor organising, coordinated strikes, and different forms of workplace struggle, since 2015. These exchanges sparked interest in understanding how labour law systems in different jurisdictions have weathered the challenges brought on by technological advancement. Legal comparison in this context has an evident practical dimension aimed at formulating successful demands and litigation strategies, as well as imagining how the law could better protect workers.

2. "Digital Taylorism": Productivity Quotas at Amazon Warehouses in Poland and the U.S.

New technology implemented at the warehouse as both hardware (machines that mostly supplement, rather than substitute, human labour) and software (AI and algorithmic management systems) serves primarily to increase productivity. A 2019 report published by the UC Berkeley Labour Center, entitled *"The Future of Warehouse Work: Technological Change in the U.S. Logistics Industry,"* describes how the explosive growth of online sales in recent years fuelled interest in digital technologies among entrepreneurs in the logistics and warehousing sector[6]. "[…] In the context of the low margins that characterise this industry," the authors point out, "productivity becomes paramount and improvements are focused on reducing costs"[7]. According to this report, the main impact of technological changes on workers is work intensification[8]. This, the

[5] See: https://amworkers.wordpress.com

[6] B. Gutelius B., N. Theodore, *The future of warehouse work: Technological change in the U.S. logistics industry*, Berkeley, CA: UC Berkeley Labor Center, (2019).

[7] *op. cit.* p. 55.

[8] *op. cit.* p. 54.

authors argue, occurs through a twofold process they call *"digital Taylorism."* The first aspect of this process limits human interactions among co-workers by, in short, placing machines at the centre of what was traditionally a site of interpersonal relationships (including with superiors, now the amorphous "algorithmic boss"). The second aspect relates to the increasing standards of job performance designated by AI and algorithms.

When it comes to physical labour performed by humans, technological advances in the development of machines and AI-driven methods of data analysis allow for breaking down tasks into the smallest possible segments (often lasting a few seconds), shortening the intervals between those tasks, reducing their completion time, and making full productive use of the working shift. Much like Frederick Taylor's system of scientific management, digital technology serves to increase the volume of labour performed during the working day. Yet unlike scientific management, which created a specific method of work performance that was then applied to employees, AI in the work process "seeks to detect among employees the optimal methods [of completing particular tasks – MR], and then highlight these methods as best practices" [9]. In effect, the aim is to "find the true sources of productivity in workers, catalogue how employees are doing on those metrics, and then properly incentivise those behaviours for future performance"[10]. Thus, technology allows the employer to identify patterns of the most efficient work by closely monitoring employees and their various conduct. Productivity targets are, in effect, generated from, and catered to, the most productive employees.

As described in a previous publication, productivity quotas at Amazon warehouses in Poland are set for a period of one month based on employees' individual performance during the preceding period[11]. Worker accounts and publicly available information suggest that a very similar – if not identical – system is used at Amazon warehouses in the United States. Accordingly, what Amazon calls "minimum performance indicators" are determined by algorithms and AI at the level of a certain percentile of individual work results, ranked in ascending order. As such, workers are expected to perform at a target set against the results achieved by other

[9] M. Bodie et al., *The Law and Policy of People Analytics*, Univ. of Col. L. Rev. 88(4), (2017), p. 969.

[10] *op. cit.* p. 969.

[11] M. Rozmysłowicz and P. Krzyżaniak, *Automated Processing of Data on Work Performance and Employee Evaluation: A Case Study of Practices at Amazon Warehouses in Poland*, Italian Labour Law E-Journal, 16(2), (2023).

employees at the facility, and not predetermined by the employer. When employees exert themselves more, the productivity quota, or minimum performance indicator, rises in the next period. Monthly productivity quotas at Amazon's warehouses are set for the work process, regardless of employees' individual characteristics like age, gender, body mass, health, or life situation. Thus, all workers in a given work process are expected to perform labour according to the same quota, and each individual employee is distinguished solely based on their productivity score.

Productivity quotas at Amazon rise constantly because the company incentivises better performance from month to month by penalising the least efficient employees. As the Circuit Court in Poznań established in a case initiated by an Amazon employee who was dismissed for poor productivity, the system assumes in advance that a certain number of employees, which the company indicates as the 10th percentile, will not meet the productivity quota[12]. Effectively, workers who perform at this percentile will receive a negative evaluation (feedback about the need for improvement), as the Court indicated, "regardless of whether they performed their work objectively with due diligence and in a conscientious manner"[13]. A certain number of negative evaluation results qualify a worker for dismissal.

The Polish Labour Code contains general rules on the use of quotas (translated as performance standards or work standards) in all industries, understood as a measure of workload in terms of productivity and quality[14]. Quotas must take into account the level of technological advancement and work organisation achieved at the worksite, and can only be raised as technical and organisational improvements are implemented to facilitate an increase in the productivity or quality of labour[15]. Importantly, the employer is prohibited from raising quotas solely on the basis of an employee's exceeding performance, if this has occurred as a result of the employee's greater personal contribution or professional efficiency. As such, the employer cannot increase productivity quotas simply because some employees work above and beyond performance indicators. Undoubtedly, the aim of specifying conditions for the legal increase of quotas is to protect the well-being (the health and life) of employees. Although the rule on quotas is not located

[12] Sąd Okręgowy w Poznaniu Judgement of 10 June 2020, reference number VIII Pa 135/19

[13] *op. cit.*

[14] Article 83. These abstract rules apply to all industries.

[15] Article 83(2) and (3) of the Polish Labour Code.

in the OSH section of the Labour Code, it expresses a legal norm from the OSH canon. Polish case law acknowledges that the employer is required "to provide a quota that is technically, organisationally, as well as physiologically and psychologically justified"[16]. Productivity standards are thus necessarily correlated with, and in fact determined by, providing adequate safeguards for the protection of employee health and safety.

Amazon maintains in both Poland and the U.S. that it does not use productivity quotas, pointing instead to its employee evaluation system. "At Amazon, individual performance is evaluated over a long period of time, in relation to how the entire site's team is performing," a company spokesperson explained in a statement sent out to U.S. media outlets in June 2024[17]. Yet Amazon's performance review serves simultaneously to assess individual employees and to determine a new productivity quota for the next evaluation period[18].

In relation to the rule on quotas provided for in the Polish Labour Code, the company maintains that the organisation of the work process at its warehouses does not fall within the scope of the legal norms set out in the rule because the system is not used to determine piecework pay. Indeed, the quota rule is located in the section of the Labour Code entitled *"Remuneration for Work and Other Benefits"*, and its traditional interpretation is based on a correlation between the wage and the quota. Here, the quota is understood functionally to express the quantity and quality of work for the purposes of remuneration. In both Poland and the U.S., Amazon has an hourly wage system and does not directly associate wages or other pay benefits with either productivity or quality quotas. As such, in Poland, the company argues that since its system of "minimum indicators" does not serve to determine the amount of piecework pay, it does not have quotas. With no quota system in place, the rule, which conditions productivity increases on the implementation of organisational and technical improvements to the work process, does not apply, following the company's rationale. It must be said, however, that this is simply an elaborate means of circumventing the law[19]. Nonetheless, the legal norms

[16] J. Wratny, *7. Kodeks pracy. Komentarz*, 4 (2005), Warszawa. The translation is my own.

[17] C. Marr, *Amazon Fights States on Defining Quotas in Warehouse Safety Laws*, Bloomberg Law, (24 July 2024) https://news.bloomberglaw.com/daily-labor-report/amazon-fights-states-on-defining-quotas-in-warehouse-safety-laws (last accessed: 28 February 2025).

[18] As argued in M. Rozmysłowicz and P. Krzyżaniak *op.cit.*

[19] According to Article 262 § 2(2) of the LC, disputes relating to the implementation of performance standards do not fall within the jurisdiction of labour courts. In effect, an unfair productivity quota could only be contested by a labour union in collective

contained in this provision of the Polish Labour Code call for reinterpretation, especially in light of the role of technology as a conveyor of both the amount and quality of work performed by individual workers.
U.S. federal law does not regulate the use of productivity standards. Therefore, there is no federal requirement for employers to provide workers with protections when increasing performance expectations. State legislators in the U.S. have attempted to tackle the work intensification problem head-on by passing laws specifically aimed at the regulation of productivity standards in the warehousing industry. Largely analogous laws have, as of this writing, been enacted in five states: California[20], New York[21], Minnesota[22], Washington[23] and Oregon[24]. In general, these bills require larger employers in the sector to provide each employee with written documentation summarising any quota to which the employee is subject. The laws define "quota" broadly, as a work standard, under which an employee is assigned or required to perform at a specified productivity speed, or perform a quantified number of tasks, or to handle or produce a quantified amount of material, within a defined time period and under which the employee may suffer an adverse employment action if they fail to complete the performance standard. The Washington, Minnesota, and New York laws hold in addition that a quota also exists where an employee's actions are categorised between time performing tasks and not performing tasks (time-on-task vs. time-off-task, or idle time in Amazon speak), if the employee may suffer an adverse employment action if they fail to meet the performance standard. The first of this legislation to be enacted, California Assembly Bill 701, known as the *Warehouse Quotas Law*,

bargaining (or pre-strike negotiations). Amazon declines to bargain collectively with unions in both Poland and the U.S.

[20] California Assembly Bill 701 or the Warehouse Quotas Law went into effect on January 1, 2022, adding Part 8.6 (commencing with Section 2100) to Division 2 on Employment Regulation and Supervision of the California Labor Code.

[21] The Warehouse Worker Protection Act went into effect on June 19, 2023, adding article 21-A (section 780 - 788) to Chapter 31 on Labor of the Consolidated Laws of New York.

[22] The Warehouse Distribution Worker Safety law went into effect on August 1, 2023, adding section 6526 to Chapter 182 on Occupational Safety and Health of the Minnesota Statutes.

[23] The Warehouse Distribution Centers law went into effect on July 1, 2024, adding chapter 49.84 to Title 49 on Labor Regulations of the Revised Code of Washington (RCW).

[24] House Bill 4127 or the Warehouse Worker Protection Act took effect on January 1, 2025, amending chapter 653 on Minimum Wages of Title 51, Volume 16 the Oregon Revised Statutes (ORS).

was hailed in the U.S. and abroad as a landmark legislative step aimed directly at regulating Amazon's AI-powered algorithmic management system[25].

3. Workplace Injuries and State Quota Laws in the U.S.

In 2023, U.S. labour unions issued the third in a series of reports on workplace injuries at Amazon, entitled *'In Denial: Amazon's Continuing Failure to Fix Its Injury Crisis'*[26]. The report examines data on workplace injuries submitted annually by Amazon to the federal Occupational Safety and Health Administration (OSHA)[27]. According to the report's findings, Amazon employed an average annual workforce of 716,688 people[28], accounting for 36 per cent of all U.S. warehouse workers in 2022. In that same year, Amazon facilities sustained nearly 39,000 injuries, the vast majority of which were serious, making the company "responsible for more than half (53 per cent) of all serious injuries in the industry"[29]. Reports from previous years point to the same trend in injuries, with the report for 2021 also stressing that "injury rates at Amazon's robotic facilities have consistently been higher than at its non-robotic facilities in every year for which data is available"[30]. The unions found this was due to the fact that "robots drive workers' production speed higher in facilities with automation, making working conditions even more dangerous" [31].

[25] K. Paul, *California passes landmark bill targeting Amazon's algorithm-driven rules*, The Guardian, (10 September 2021), https://www.theguardian.com/us-news/2021/sep/10/california-bill-amazon-warehouse-quotas, (last accessed: 28 February 2025).

[26] The Strategic Organizing Center (SOC), *In Denial: Amazon's Continuing Failure to Fix Its Injury Crisis*, (April 2023), *see*: https://thesoc.org/wp-content/uploads/sites/342/SOC_In-Denial_Amazon-Injury-Report-April-2023.pdf (last accessed: 28 February 2025).

[27] OSHA is the U.S. federal regulatory agency with the authority to set and enforce protective workplace safety and health standards.

[28] *op. cit.* n. 29, p. 3.

[29] *op. cit.* The report uses the term "serious injury" to designate one, in which "workers were unable to perform their regular job functions (light duty) or were forced to miss work (lost time)", p. 2.

[30] The Strategic Organizing Center (SOC), *The Injury Machine: How Amazon's Production System Hurts Workers*, (April 2022), p. 9.

[31] *op. cit.*

Studies of Amazon's system conducted by scholars[32], as well as a recent Senate committee report[33] and media inquiries[34], confirm the unions' findings that the company's AI and algorithm-driven work process is riddled with occupational hazards. In response to the ensuing health and safety crisis, the United States Department of Labor and the United States Attorney ordered OSHA to carry out a series of inspections at the company's warehouses across the country[35]. At least nine federal and state-level OSHA investigations carried out between 2021 and 2023 found violations of OSH law[36]. In January 2023, federal-level OSHA cited Amazon.com Service LLC for serious violations[37]. OSHA's inspection report indicates that Amazon workers "face immense pressure to meet the pace of work and production quotas […]" which, coupled with a "[…] high frequency of repetitive tasks such as bending, lifting, and twisting", is a cause of frequent injuries[38]. As a result of the investigations, Amazon was ordered to automate some of its work processes and reduce working hours at individual workstations by increasing internal rotation or introducing additional breaks.

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[32] B. Gutelius and S. Pinto, *Pain Points: Data on Work Intensity, Monitoring, and Health at Amazon Warehouses*, Center for Urban Economic Development, University of Illinois Chicago, (October 2023), https://cued.uic.edu/warehousing-supply-chain-research/ (last accessed: 28 February 2025).

[33] On 15 December 2024, the Health, Education, Labor, & Pensions Committee of the U.S. Senate, chaired by Senator Bernard Sanders, released a report entitled, *The "Injury-Productivity Trade-off": How Amazon's Obsession with Speed Creates Uniquely Dangerous Warehouses*, https://www.help.senate.gov/imo/media/doc/amazon_investigation.pdf (last accessed: 28 February 2025).

[34] For example: W. Evans, *Ruthless Quotas at Amazon Are Maiming Employees*, The Atlantic, December 5, 2019, https://www.theatlantic.com/technology/archive/2019/11/amazon-warehouse-reportsshow-worker injuries/602530/ (last accessed: 28 February 2025).

[35] Press release, U.S. Attorney's Office for the Southern District of New York, *Amazon Cited By OSHA Based On SDNY Referrals For Serious Violations That Exposed Workers To Safety Hazards*, (18 January 2023) https://www.justice.gov/usao-sdny/pr/amazon-cited-osha-based-sdny-referrals-serious-violations-exposed-workers-safety, (last accessed: 28 February 2025).

[36] The Strategic Organizing Center, *op.cit.*, p. 2.

[37] Press release, OSHA national office, *Federal safety inspections at three Amazon warehouse facilities find company exposed workers to ergonomic, struck-by hazards*, (18 January 2023) https://www.osha.gov/news/newsreleases/national/01182023, (last accessed: 28 February 2025).

[38] OSHA inspection report (17 January 2023), p. 8, https://www.dol.gov/sites/dolgov/files/OPA/newsreleases/2023/01/OSHA20230063a.pdf, (last accessed: 28 February 2025).

In large part, the injuries incurred by warehouse associates are musculoskeletal disorders (MSDs)[39], which affect the muscles, bones, soft tissue, joints, and spine[40]. MSDs are cumulative in nature and often worsen gradually over time, manifesting in functional incapacity. According to the Washington State legislature, "work-related musculoskeletal injuries and disorders account for at least one-third of all workers' compensation claims that result in time loss and wage replacement, are more severe than the average nonfatal injury or illness, and are a common cause of long-term disability in Washington State"[41]. In May 2021, a Washington State OSHA (WISHA) investigation found that "there is a direct connection between Amazon's employee monitoring and discipline systems and workplace MSDs"[42].

In another citation in March 2022, WISHA declared that Amazon's failure to fix health and safety hazards was "willful," because the company "is demonstrating plain indifference in that they have been made aware of the hazards and increased injury rates yet are making no effort to take corrective action"[43]. These serious health and safety problems became the pressing context for legislation aimed at setting rules on the use of productivity quotas.

Starting in late 2022, the California Warehouse Quotas law became the basis for the state Labour Commissioner's investigation of Amazon facilities. In June 2024, the Commissioner's Office announced that during the period from October 2023 to March 2024, it had found 59,017 violations of the Warehouse Quotas law at just two Amazon distribution centres[44]. In each of these cases, Amazon had failed to provide employees with written notice of the quotas they must follow. In accordance with the state Labour Code, penalties of $100 were cited for each violation, amounting to a total citation of about $6 million.

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[39] B. Gutelius and S. Pinto, *op.cit.*, p. 9.

[40] J. Humphreys and S. Verstappen, *The burden of musculoskeletal disease*, Medicine, 50(2), (2022), p. 82-84.

[41] Motive at Sec. 1(2) of the Engrossed Substitute Senate Bill 5217, enacted on July 23, 2023 giving Washington state the authority to regulate certain industries so as to prevent musculoskeletal injuries and disorders.

[42] WISHA citation 317961850, cited in B. Gutelius, S. Pinto, *op.cit.*, p. 9.

[43] The Strategic Organizing Center, *op.cit.*, p. 19.

[44] News release, State of California Department of Industrial Relations, *Labor Commissioner Cites Amazon Nearly $6 Million for Violating California's Warehouse Quotas Law*, (18 June 2024), https://www.dir.ca.gov/DIRNews/2024/2024-46.html /, (last accessed: 28 February 2025).

Uniquely among the quota bills enacted thus far, the California law includes a preamble, which outlines the causal link between technologically-mediated, highly productive labour and workplace injuries:

> The rapid growth of just-in-time logistics and […] advances in technology used for tracking employee productivity, have led to a rise in the number of warehouse and distribution centre workers who are subject to quantified work quotas. […] These quotas generally do not allow for workers to comply with safety guidelines or to recover from strenuous activity during productive work time, leaving warehouse and distribution centre employees who work under them at high risk of injury and illness.

This link is also reiterated in injury rate clauses incorporated into both the California and Minnesota quota bills. In both cases, the laws provide that if a particular worksite or employer is found to have an annual employee injury rate above the warehousing industry's average, the labour commissioner gains the authority to investigate possible violations under the quota law[45].

While the primary assumptions of the enacted state quota laws are the same, there are variations in the details. The laws require covered employers to provide each employee with a written description of each quota the employee is subject to, upon hire. This description must include the quantified number of tasks to be performed or materials that must be produced or handled within a defined time period, and any potential adverse employment action that could result from failing to meet the quota. The New York, Minnesota, Oregon, and Washington bills also explicitly order the employer to inform the employee of any quota changes thereafter[46]. The Washington bill additionally specifies that the employee must be informed verbally or in writing as soon as possible and before they are subject to the new quota[47]. The Minnesota law, meanwhile, orders the employer to provide a written description of the new quota no fewer than one working day prior to the effective date of any increase in an existing quota[48]. The New York, Minnesota, Oregon, and Washington bills furthermore include requirements on the language

[45] Minn. Stat. 182.6526 subd. 5 and Cal. Lab. Code § 2107 (b).

[46] The New York (at § 781), Oregon (at § 3 (2) (b)) and Washington bills (RCW 49.84.020 (2)) require the employer to provide an updated written description of each quota to which the employee is subject within two business days of the quota change.

[47] RCW 49.84.020 (2) (a).

[48] Minn. Stat. 182.6526 subd. 2(c) (2).

of communication[49]. The Washington and Minnesota laws stand out in this respect, as both expressly indicate (although in varying wording) that the written description of the quota must be understandable, in plain language, and in the employee's preferred language[50]. This aspect is particularly important, as it holds the employer accountable for not simply printing out spreadsheets of likely incomprehensible, raw numerical data. Rather, in order to satisfy this provision, the employer must make the written description of the quota understandable (giving in turn the employee the authority to claim that they did not understand the quota, or that the language used to describe it was too convoluted).

In following all of the enacted state quota bills discussed here, an employer cannot take adverse employment action against an employee for failing to meet a quota that has not been disclosed to the employee[51]. The California Labour Commissioner understands an adverse employment action as "any action taken by an employer that materially and negatively affects employment, including a negative performance review, a reduction in pay or hours, or termination"[52].

Significantly, the California, New York, Minnesota, and Washington bills further extend this restriction on adverse employment action to quotas considered unlawful. Employees are not required to meet unlawful, or prohibited quotas. An unlawful or prohibited quota is one that prevents an employee from taking meal or rest periods, using bathroom facilities, or including reasonable travel time to and from bathroom facilities[53]. Under the California, Minnesota, and Washington bills, an unlawful quota is also one that prevents compliance with occupational health and safety laws. Thus, a quota may be unlawful if, in order to meet it, the employee had to violate OSH regulations. The Minnesota law adds prayer periods to this list, specifying that an employee is not required to meet a quota that prevents compliance with prayer periods[54].

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[49] The New York law requires an employer to provide written description of a quota in English and in the language identified by each employee as their primary language (at § 781).

[50] For ex. RCW 49.84.020 (4).

[51] For ex. California Lab. Code § 2102.

[52] State of California Department of Industrial Relations, *Frequently Asked questions on Warehouse Quotas (Assembly Bill 701)*, https://www.dir.ca.gov/dlse/FAQwarehousequotas.htm (last accessed: 28 February 2025).

[53] For ex. § 782 of the New York law.

[54] Minn. Stat. 182.6526 subd. 3.

The Washington law importantly expands the scope of this provision. According to the state bill, an unlawful quota is also one that does not provide "sufficient time" for breaks, travel to break sites, or to perform any activity required by the employer in order to do the work subject to any quota[55]. Further, the bill spells out that the quota must provide sufficient time to take any actions necessary for the employee to exercise their statutory rights to a safe and healthful workplace, including but not limited to time to access tools or safety equipment necessary to perform the employee's duties[56]. Finally, a quota is unlawful if it exposes an employee to occupational safety and health hazards in violation of the requirements of Washington's Industrial Safety and Health Act[57]. The Washington law also specifies that reasonable travel time must include consideration of the architecture and geography of the facility and the location within the facility that the employee is located at the time. This last aspect is particularly relevant to Amazon warehouse associates employed at fulfilment centres that cover enormous surface areas, often measured in multiple football fields.

The state quota bills provide employees with a set of protections and benefits. Firstly, current and former employees who believe they have been disciplined for failing to meet a quota, or that a quota they were subject to was unlawful, are accorded the right to request information not only about the quota, but also about work speed data[58]. The employer must provide a copy of the most recent 90 days of the employee's own personal work speed data (the Washington law requires the employer to provide work speed data for the prior six months). Additionally, the New York, Minnesota, and Washington bills order the employer to provide aggregate work speed data for similar employees at the same facility for the same time period (90 days, or six months, respectively)[59]. Some bills institute a time period, in which the employer is required to comply with the request (for example, two business days for quota information and seven business days for work speed data in Washington). With the

[55] RCW 49.84.030.
[56] RCW 49.84.025.
[57] RCW 49.84.032.
[58] The bills define employee work speed data as information relating to an individual employee's performance of a quota, including, but not limited to, quantities of tasks performed, quantities of items or materials handled or produced, rates or speeds of tasks performed, measurements or metrics of employee performance in relation to a quota, and time categorized as performing tasks or not performing tasks (for ex. California Lab. Code § 2100 (e) (1)).
[59] For ex. § 785 (1) of the New York law.

exception of the Oregon law, the bills explicitly prohibit employers from retaliating against employees for exercising the right to request information or for filing a complaint about a quota.
Enforcement of the bills' provisions is generally consigned to the appropriate labour commissioner, with the California and Washington bills outlining in detail the procedural rules. Interestingly, the Washington bill provides that under certain circumstances, an employer.

4. Energy Expenditure and Poland's Ergonomics Standard

In Poland, official data on workplace accidents have not indicated a concerning rise in injury rates at Amazon or within the wider warehousing industry. However, union representatives have long suspected that the work processes at the company's warehouses expose workers to a high risk of occupational injuries and illnesses[60]. This situation is likely due, in part, to the restrictive legal definitions of what constitutes a workplace accident or an occupational illness. According to the legal definition, a workplace accident must begin with a "sudden event brought on by an external cause"[61]. Interpreted literally, both the suddenness and external origin of the injury imply that MSDs, which develop over time due to repetitive motions and eventually manifest in conditions like reduced limb function, are unlikely to be recognised as workplace accidents. Similarly, the legal definition of occupational illness is limited to a closed list of chronic conditions, which must manifest over a prescribed period, with only six types of MSDs officially recognised[62]. Consequently, many serious injuries do not qualify as workplace accidents, and long-term health issues often do not entitle workers to compensation, as they fail to meet the legal definition of an occupational illness. It can therefore be concluded that in Poland, regulations regarding occupational accidents and illnesses are out of step with technological advancements in work processes, which create new occupational hazards that are not covered by these regulations[63].

[60] K. Leśniewicz, *Ofiary wypadków w Amazonie czują się jak winni przestępstwa - mówi zwolniona związkowczyni*, OKO Press, (30 November 2021) https://oko.press/ofiary-wypadkow-w-amazonie-czuja-sie-jak-winni-przestepstwa-mowi-zwolniona-zwiazkowczyni (last accessed: 28 February 2025).
[61] Article 3(1) of the Act of October 30, 2002 on social insurance for labour accidents and occupational diseases.
[62] Regulation of the Council of Ministers of June 30, 2009 on occupational diseases.
[63] H. Szewczyk posited this argument in reference to the Polish regulations already in 2011, see: Helena Szewczyk, *Choroby zawodowe i parazawodowe pracowników w znowelizowanym kodeksie pracy*, Forum Prawnicze, 2 (2011), p. 70.

A further issue contributing to the lack of data on workplace accidents is the employer's dominant role in the accident assessment process. By law, the employer is responsible for convening the accident assessment team, selecting its members (including an employee representative), approving the findings in the post-accident report, and having the final say if there are disagreements within the team[64]. The employer is also solely responsible for maintaining a register of workplace accidents[65]. In practice, these regulations enable the employer to exert considerable influence over the accident assessment process and the subsequent reporting to authorities.

This situation is reflected in official injury records and statistics. However, this issue is not unique to Poland. In their study on work intensity, monitoring, and health at Amazon warehouses in the U.S., B. Gutelius and S. Pinto highlight similar issues with the injury reporting system, which they claim "fails to capture the full scope of injuries occurring in Amazon warehouse facilities"[66].

Although injury records do not suggest a major Occupational Safety and Health (OSH) problem at Amazon's facilities in Poland, the warehouse work process was nonetheless found by the State Labour Inspectorate to expose workers to serious occupational hazards. Central to these findings were violations of legal norms that set maximum limits on the amount of physical labour that can be performed during a working shift. OSH regulations in Poland incorporate an ergonomics standard that defines work intensity limits for physical tasks such as the manual handling of loads (e.g., lifting, carrying, pushing, pulling)—activities typical in warehousing. In this context, work intensity is quantified as allowable energy expenditure, expressed in kilojoules (kJ) burned by workers during their work. These legal limits are defined in the Ordinance of the Minister of Labour and Social Policy on occupational health and safety in the manual handling of loads and other physically demanding tasks (hereafter: the Ordinance). Amended in 2018, the Ordinance stipulates that net energy expenditure required to perform physical tasks should not exceed 5,000 kJ per shift and 20 kJ per minute during occasional physical work for women, and 8,400 kJ per shift and 30 kJ per minute for men[67]. This

[64] §9(3) and §10(2) Decree of the Council of Ministers of July 1, 2009 on determining the circumstances and causes of accidents at work.
[65] *op. cit*, § 16.
[66] B. Gutelius and S. Pinto, *op.cit.*, p. 17-18.
[67] § 6 (3) and (4).

Ordinance applies to all sectors of the economy where physical labour is involved.

The link between high energy expenditure and the likelihood of developing work-related MSDs is relatively well documented in industrial engineering literature. It is widely accepted that as productivity expectations increase, tasks become more repetitive, requiring greater energy expenditure, which in turn leads to physical fatigue and exposes workers to a higher risk of MSDs[68]. A study of the warehousing sector in particular found that "[o]rder picking is the most time-consuming and labour-intensive activity in warehousing. Due to the need to frequently handle items, order picking requires high human energy expenditure and poses a risk environment for workers to develop MSDs"[69].

In the spring of 2018, following reports of unhealthy working conditions at Amazon's fulfilment centres in Poland, the Chief Labour Inspector ordered a comprehensive inspection of work at the company's warehouses. Coordinated by the District State Labour Inspector in Rzeszów, a total of 12 inspections were carried out at four Amazon warehouses in April, May, and June 2018, without prior notification to the employer. During these inspections, labour inspectors measured the energy expended by selected warehouse workers by assessing their pulmonary ventilation[70] during the work process, using an MWE meter[71]. "Energy expenditure was measured at 11 workstations, of which 7 showed high values of energy expenditure," reported the Minister of Labour in a report to Parliament summarising the investigation[72]. The Labour Inspectorate's measurements revealed that, for some Amazon employees, the amount of physical effort required to perform the expected tasks exceeded the legal limits on energy expenditure for a

[68] N. Mohd Nur et al., *The effects of energy expenditure rate on work productivity performance at different levels of production standard time*, J Phys Ther Sci. 27(8), (August 2015), p. 2431-3.

[69] D. Battini et al., *Human energy expenditure in order picking storage assignment: A bi-objective method, Computers & Industrial Engineering*, Computers and Industrial Engineering, 94, (2016), p. 147-157.

[70] Pulmonary ventilation is the process of air flowing into the lungs during inspiration (inhalation) and out of the lungs during expiration (exhalation).

[71] *Miernik Wydatku Energetycznego* or the Energy Expenditure Meter. A transportable device used to precisely calculate energy expenditure, constructed at the *Centralny Instytut Ochrony Pracy* (CIOP - the Central Institute for the Protection of Work), located in Warsaw, Poland. *See*: www.ciop.pl

[72] The Minister of Family, Work and Social Policy, (14 September 2018), administrative number: K8INT25331.

working shift[73]. As a result, labour inspectors found that these workers were allowed, in violation of the law, to perform prohibited work that posed serious risks to their health. A total of 11 citations were issued for 6 men and 5 women, ordering Amazon to reassign these employees to other workstations. On the day of the measurements, all 11 employees tested exceeded the 5,000 kJ[74] and 8,400 kJ limits[75]. Two female workers (aged 63 and 59) among this group were found to have burned over twice the legal limit (10,343 kJ and 12,754 kJ, respectively). Consequently, during a single work shift, these employees exerted themselves at an intensity equivalent to more than two days' worth of labour.

The Labour Inspectorate issued citations for immediate execution, citing the imminent danger to the health of the workers concerned. Amazon appealed the citations to the District State Labour Inspector in Rzeszów, seeking their revocation. However, the citations were upheld in four decisions, which Amazon subsequently appealed to the lower administrative court in Rzeszów. In all four cases, the courts dismissed Amazon's complaints[76]. Finally, Amazon appealed to the Supreme

[73] Court documents indicate that measurements were taken at randomly selected workstations, while the employees chosen for the study had been working at Amazon for at least several months. The inspectors took account of their gender, age, weight and height. Samples of energy expenditure were taken 7 to 12 times from each tested employee, at different times of the working shift. The employer was allowed to take active part at every stage of the inspection. Union representatives were also present throughout the study. Tests were carried out during a standard work day, outside of the peak season.

[74] Energy expenditure results for the female employees tested (source: case law listed at *supra* n. 76 and 77):

1. J.P. (47 years old) 8,709 kJ, AFE Rebin and AFE Pack workstation;
2. A.R. (age not indicated) 9,104 kJ, AFE Rebin and AFE Pack workstation;
3. H.K. (age not indicated) 9,408 kJ, Receive workstation;
4. D.J. (63 years old) 10,343 kJ, AFE Rebin and AFE Pack workstation;
5. E.S. (59 years old) 12,754 kJ, AFE Pack workstation.

[75] Energy expenditure results for the male employees tested (source: case law listed at *supra* n. 76 and 77):

1. M.P. (58 years old) 8,676 kJ, Receive workstation;
2. P.J. (age not indicated) 9,207 kJ, Ship workstation;
3. W.W. (51 years old) 10,659 kJ, Pack workstation;
4. O.D. (age not indicated) 11,235 kJ, Dock workstation;
5. T.L. (42 years old) 13,731 kJ, Pack workstation;
6. A.H. (63 years old) 14,452 kJ, Ship workstation.

[76] 1) Wojewódzki Sąd Administracyjny in Rzeszów, judgement of 22 November 2018, reference number II SA/Rz 991/18, *see*: https://orzeczenia.nsa.gov.pl/doc/A9480EA18E, (last accessed 1 December 2024);

Administrative Court of Poland, which in 2022 upheld the lower courts' rulings, once again dismissing Amazon's complaints[77]. In total, all eight administrative decisions sided with the Labour Inspectorate's findings[78]. A central issue evaluated by the courts was the method used to measure energy expenditure and whether work intensity could be measured uniformly for a large group of workers. It is important to note that the legal limits set in the Ordinance are maximum values (not averages) achieved by individual employees (not a statistically representative group). Accordingly, work becomes unsafe and thus prohibited when an individual employee exceeds the energy expenditure limit. The employer is liable for exposing that employee to unsafe working conditions. This is particularly relevant as Amazon (and similar employers) organises work processes and manages its workforce en masse. Big data technologies, such as AI and algorithms, facilitate this system by allowing the employer to make automated decisions affecting large groups of workers, or even the entire workforce. Since monthly productivity quotas at Amazon's warehouses are based on the best performance results achieved by workers in a particular task, Amazon expects both male and female workers to meet the same quotas, disregarding the fact that the legal

2) Wojewódzki Sąd Administracyjny in Rzeszów, judgement of 22 November 2018, reference number II SA/Rz 999/18, *see*: https://orzeczenia.nsa.gov.pl/doc/8B8766AC2C, (last accessed 1 December 2024);
3) Wojewódzki Sąd Administracyjny in Rzeszów, judgement of 19 December 2018, reference number II SA/Rz 1149/18, *see*: https://orzeczenia.nsa.gov.pl/doc/0908B35BDA, (last accessed 1 December 2024);
4) Wojewódzki Sąd Administracyjny in Rzeszów, judgement of 22 February 2019, reference number II SA/Rz 1194/18, *see*: https://orzeczenia.nsa.gov.pl/doc/11645228D8, (last accessed 1 December 2024).

[77] Naczelny Sąd Administracyjny, judgement of 18 May 2022, reference number III OSK 1010/21, *see*: https://orzeczenia.nsa.gov.pl/doc/8570D63316, (last accessed 1 December 2024);
2) Naczelny Sąd Administracyjny, judgement of 18 May 2022, reference number III OSK 1011/21, *see*: https://orzeczenia.nsa.gov.pl/doc/84A4BD8ED9, (last accessed 1 December 2024);
3) Naczelny Sąd Administracyjny, judgement of 18 May 2022, reference number III OSK 1162/21, *see*: https://orzeczenia.nsa.gov.pl/doc/F715DD9C05, (last accessed 1 December 2024);
4) Naczelny Sąd Administracyjny, judgement of 23 November 2022, reference number III OSK 1555/21, *see*: https://orzeczenia.nsa.gov.pl/doc/CF8BED7DF6, (last accessed 1 December 2024).

[78] Each case was ruled by a panel of three judges. A total of 12 judges ruled in these cases (some judges presided over multiple cases).

norms on maximum energy expenditure in Poland differ for men and women.

In its appeals, Amazon argued that measuring each individual employee's energy expenditure during specific tasks would be an excessive burden, requiring the company to entirely reorganise its work process. The company presented its own calculations of energy expenditure, conducted at various workstations during routine risk assessments. These tests, carried out by a private laboratory, were based on estimated observations extrapolated to 1,000 workers, and did not find any values exceeding the legal limit[79]. However, the panel of three judges who ruled on cases ref. no. II SA/Rz 991/18 and II SA/Rz 999/18 noted, "The [Labour Inspectorate] rightly argues that the method is based on estimation rather than measurement, and [the employer's method] does not account for the pace and intensity of work"[80]. The courts concluded that this practice merely created a presumption of compliance with the legal standard. Moreover, in the two cases cited, the same court observed that the company had indicated that its estimates were based on one employee's energy expenditure, whose results were then generalised to the larger workforce. "[S]ignificantly," the court wrote, "a 22-year-old woman, 182 cm in height and weighing 82 kg, was selected as the tested person, which raises reasonable doubts about the representativeness of the results obtained"[81]. Amazon had also tested energy expenditure using the pulmonary ventilation method but again submitted test results for a young employee, whose energy expenditure was within the legal limit.

In all four judgements, the lower courts reasoned that since the employer is legally obliged to provide safe and healthy working conditions, this should be interpreted as requiring the employer to measure energy expenditure using methods that reflect the "realistic workload of individual employees." The Supreme Administrative Court, in its rulings, reiterated that the primary objective of the employer's obligations in OSH law is the protection of workers' health and lives. As the courts concluded, any measurement that shows a worker is expending more energy than is legally tolerable is sufficient to deem the work unsafe.

[79] The estimation method, also known as Lehmann's method, involves estimating average energy expenditure for individual sequences in the work process based on preset values, available in ready-made charts.

[80] My translation.

[81] My translation.

5. "Individualisation" and OHS Legal Norms

The issue of technologically mediated work intensification in the warehousing sector, and specifically at Amazon, has been approached through different legal perspectives in the two national jurisdictions examined in this article – the U.S. and Poland. However, the same fundamental assumption underpins both approaches: the amount of labour to be performed by a worker must be clearly defined. Secondly, when defining performance expectations, the employer cannot disregard the individual predispositions of the employees.

State quota laws in the U.S. have focused on compelling employers in the warehousing sector to define the amount of work to be performed by providing descriptions of each quota to which the employee is subject, in writing. Thus, the employee must be informed of the employer's expectations for every work process in the warehouse. These rules grant the employee individual (and subjective) authority to evaluate the legality of the quota by assessing whether it is understandable, allows sufficient time for bathroom breaks, rest periods, prayer periods, compliance with OSH regulations, or provides enough time for the employee to complete the work itself, depending on state legislation. It follows that a given quota may allow one employee adequate time for these activities, while it may not afford enough time for another employee. A negative assessment of the quota by the employee gives her the right to take action.

According to Poland's ergonomics standard, female and male employees can only expend up to a legally defined maximum amount of energy during an 8-hour working shift. Work within the kilojoule limit is considered safe, while work that requires the employee to exceed the kilojoule limit is deemed unsafe and exposes the employee to imminent danger. The Labour Inspectorate's evaluation of energy expenditure by Amazon employees in Poland suggests that work tends to be more labour-intensive for older workers (aged 40 and above)[82]. Together, the Polish ordinance and the Labour Inspectorate's findings (confirmed by

[82] In January 2023, due to a lack of sufficient evidence, the United States District Court for the Northern District of California dismissed a third attempt at a class action against Amazon.Com Services LLC, in which a former worker alleged that Amazon's enforcement of work quotas violates California's Fair Employment and Housing Act because it has a disparate impact on employees 49 years and older. *See*: Daniel Wiessner, *Amazon beats claim that warehouse quotas biased against older workers*, Reuters, (28 January 2023), https://www.reuters.com/legal/amazon-beats-claim-that-warehouse-quotas-biased-against-older-workers-2023-01-27/ (last accessed: 28 February 2025).

the administrative courts) establish that at least two individual characteristics – gender and age – have a decisive effect on how the workload impacts employee health and safety. Life experience suggests that other factors, such as body mass, state of health, or external elements like night shift work, might also contribute to increased energy expenditure.

The idea that the employer must clearly express work expectations is not novel. The correlation between quotas and wages, as traditionally understood in the Polish Labour Code (enacted in 1974), reflects the rational aims of both sides in the employment relationship regarding wage labour. That is, the employer's and employee's mutual understanding that an agreed-upon amount of labour will be compensated with the agreed-upon sum. Technology disrupts this agreement, enabling the employer to continually extract more labour from the employee for the same wage. In addition to determining the most productive ways of completing particular tasks and setting productivity expectations, technology also enables the employer to calculate the exact number of products processed by employees during the working day. Failure to process the expected number of products can result in adverse employment actions, including termination – a determinant that U.S. bills rightly define as a "quota". As such, employers like Amazon might be said to operate a piecework system, which instead of correlating quotas with wages, links them to continued employment.

Yet, the motivation for regulating physical labour under the conditions discussed in this article, in both the U.S. and Poland, stems from its detrimental effects on workers' wellbeing. In the U.S., these effects were widely documented as serious injuries. In Poland, these effects were inferred from energy expenditure tests conducted on Amazon employees, for whom the tasks performed required excessive physical effort. It is clear that not all employees suffer injury or overwork themselves at Amazon. Nonetheless, both the U.S. injury reports and the findings of the Polish Labour Inspectorate indicate that work at Amazon is not safe for all workers, and that the employer has not eliminated all known hazards. The U.S. and Polish regulations aim to prompt employers to eliminate these occupational hazards by associating performance expectations with individual employees' capabilities.

"Individualisation" as a legal premise lies at the heart of OSH regulations, stemming from the employer's obligation to protect the health and life of each and every worker. This obligation is fulfilled by providing a safe and healthy working environment. As expressed in international legal acts, it is concretised in national (and state) case law and derives from the

employment relationship itself. The ILO Occupational Safety and Health Convention, 1981 (No. 155) stipulates that national OSH policy must consider the relationships between the material elements of work and the individuals who carry out the work, including the adaptation of machinery, equipment, working time, organisation of work, and work processes to the physical and mental capacities of the workers[83]. Although neither Poland nor the United States has ratified the core ILO conventions on occupational health and safety (No. 155 and No. 187), both countries are members of the ILO. By freely joining, they have endorsed the principles and rights set out in the ILO Constitution and in the Declaration of Philadelphia[84]. Moreover, at its 110th session in 2022, the International Labour Conference (ILC) adopted a resolution on the inclusion of a safe and healthy working environment in the ILO's framework of fundamental principles and rights at work. Consequently, both Convention No. 155 and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) were declared fundamental conventions of the ILO[85]. Therefore, all members, even if they have not ratified these two conventions, are obligated, by virtue of their membership in the ILO, to respect, promote, and realise, in good faith and in accordance with the Constitution, the principles concerning the fundamental rights covered by these Conventions, specifically the right to a safe and healthy working environment[86].

In the case of Poland, the employer's duty to protect the life and health of each worker by providing healthy and safe working conditions is expressly provided for in the Labour Code[87]. This obligation is understood as an element of the employment relationship, which stems from the individual employment contract. Polish courts have consistently upheld that this

[83] Article 5(b).

[84] (1)(a) of the ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up, adopted at the 86th Session of the International Labour Conference (1998) and amended at the 110th Session (2022), https://www.ilo.org/resource/conference-paper/ilo-1998-declaration-fundamental-principles-and-rights-work-and-its-follow (last accessed: 28 February 2025).

[85] Text of ILC.110/Resolution 1, (June 2022), https://www.ilo.org/resource/ilc/110/resolution-inclusion-safe-and-healthy-working-environment-ilos-framework (last accessed: 28 February 2025).

[86] (2)(e) of the ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up.

[87] Art. 15 and art. 207 § 2 LC.

particular employer's obligation is highly individualised[88]. Furthermore, as an EU Member State, Poland transcribed provisions of the European Framework Directive on Safety and Health at Work 89/391 EEC, which specifically states that employers must "adapt the work to the individual" [89]. These legal norms were incorporated into the 1997 ordinance on general standards of occupational health and safety, which requires the employer to adapt working conditions and processes to the capabilities of the employee, particularly through appropriate design and organisation of workstations, selection of machinery and other technical equipment, working tools, and methods of production and work – taking into account the reduction of the workload, especially monotonous work and work at a predetermined pace, and reducing the negative impact of such work on employees' health[90].

In the U.S., the federal Occupational Safety and Health Act of 1970, which applies in both the private sector and the federal government, includes a General Duty clause[91]. Accordingly, the employer must provide each of their employees with employment and a place of work that are free from recognised hazards that are causing or likely to cause death or serious physical harm to the employees. The General Duty clause holds the employer liable even in the absence of a specific rule or standard on a particular workplace hazard, and OSHA can inspect and issue a citation based solely on this clause[92]. State OSHA plans concretise these provisions (they must meet or exceed the standards set by the OSH Act), though not all states have such plans. Some states, such as Washington and Minnesota, have incorporated ergonomics standards into their OSH regulations. The Minnesota law requires employers in the warehousing sector to create and implement an effective written ergonomics programme focused on eliminating the risk of their employees developing or exacerbating MSDs[93]. In 2023, the Washington state legislature enacted a law allowing it to adopt rules aimed at preventing MSDs in certain industries considered high-risk for these disorders, including "Fulfillment Centres". The state's publications indicate that plans for future rulemaking

[88] For example, Sąd Najwyższy judgement of 12 December 1974 r., reference number II PR 262/74, OSNC 1975, n. 7-8(122).
[89] Article 6.
[90] § 39(2)(4).
[91] Section 5(a)(1).
[92] J. Lang Gordon, *Under Pressure: Addressing Warehouse Productivity Quotas and The Rise in Workplace Injuries*, Fordham Urban Law Journal, Vol. XLIX, (2022), p. 166.
[93] Minn. Stat. 182.677 subd. 2.

in the industry include the use of ergonomics analysis tools to set a reasonable pace of work[94].

In both national jurisdictions discussed in this article, the employer's responsibilities in the OSH sphere are owed individually to each employee. This does not preclude the employer from using collective safeguards; indeed, collective protective measures that render the work process safe should be prioritised over measures for individual employee protection. However, it does bring to light a key tension in Amazon's system, where employees' individual predispositions and life situations (what ultimately distinguish humans from machines) play no constructive role in the organisation of the work process. Instead, individual predispositions are seen as potential obstacles to achieving productivity expectations, which the worker must overcome to maintain employment.

As this article argues, the organisation of the work process, which is broadly indiscriminate and tailored to workers as a mass, without consideration of their individual characteristics, exposes employees to occupational hazards, as seen in the case of Amazon. Furthermore, it challenges labour law, as it allows the employer to define a new model of employee conduct. Polish labour law scholar Bąba calls this type of employment status "technological subordination", a distinct form of en masse command over employees that goes beyond the employer's control over an individual worker[95]. Bąba has argued that by ignoring individual aspects of employees, the employer shifts away from "the mediocre" or "the average" as the standard of performance, instead constantly setting expectations at the limits of human capabilities, with the requirement that employees strive to exceed those limitations[96]. In effect, the work and its occupational risk assessment are modelled on the most productive employee, rather than the average, mediocre-performing worker. The findings of the Polish administrative courts, cited earlier in cases ref. no. II SA/Rz 991/18 and II SA/Rz 999/18, illustrate that in Amazon's view, a worker best suited to the warehouse job might be a 22-year-old woman who is 182 cm tall and weighs 82 kg.

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[94] *See*: *Ergonomics Priority for Prevention, May 2024, Washington State Department of Labor and Industries, Division of Occupational Safety and Health*, https://www.lni.wa.gov/safety-health/safety-rules/rulemaking-stakeholder-information/Ergo_docs/FulfillmentCenters_FactSheet2024.pdf (last accessed: 28 February 2025).

[95] M. Bąba, *Podporządkowanie technologiczne w zatrudnieniu*, Państwo i Prawo, 2, (2022).

[96] *op. cit.*, p. 99.

Beyond physical characteristics, psychological predispositions may also be necessary to maintain performance in the context of such highly intensive labour. As documented in the literature, data collected on patterns of worker productivity is not only numerical in nature[97]. In effect, a performance evaluation system could also be designed to favour specific traits or employee behaviours that contribute to higher productivity scores. Such preferred attributes might include social apathy or aloofness in relations with coworkers, aimed at filtering out employees who converse during work, as well as those who build community and foster respect among their colleagues. This pressure might also target employees who are more psychologically inclined to assert their autonomy and use their productive time for rest breaks, bathroom breaks, prayer breaks, OSH compliance, and so on.

6. Conclusion

The Warehouse work continues to require a significant amount of human manual labour. As an industry leader in the use of AI and algorithm-driven technology to both organise the work process and manage the workforce, Amazon is simultaneously one of the world's largest employers. As this article has sought to demonstrate, physical labour performed in an environment with high interaction between humans and technological tools carries serious occupational risks when technology is primarily used to increase productivity. Significantly, the duty to protect workers' wellbeing by providing safe and healthy working conditions is not static and cannot be fulfilled once and for all. Rather, it is a constant, dynamic obligation that evolves along with the work process and is updated with each new machine or other change.

Both international and national OSH standards affirm this evolutionary aspect by requiring the continuous improvement of the protection provided to workers. ILO Conventions No. 155 and No. 187 frequently use the term "progress", associating OSH standards with ongoing development and enhancement. Convention No. 187 requires each Member State to take active steps towards progressively achieving a safe and healthy working environment[98]. In its declaration of purpose, the U.S. federal OSH Act stipulates that safe and healthful working conditions are to be assured through research in occupational safety and health,

[97] P. V. Moore, *The Mirror for (Artificial) Intelligence: In Whose Reflection?*, 42 Comp. Lab. L. & Pol'y J. 41(1), (2019) p. 58.
[98] Article 2(2).

including the psychological factors involved, as well as through the development of innovative methods, techniques, and approaches to address occupational safety and health challenges, and by exploring ways to identify latent diseases and establish causal connections between diseases and work in environmental conditions[99].

According to the Polish Labour Code, the employer must ensure safe and healthy working conditions by making appropriate use of scientific and technical advancements[100]. The newly enacted European AI Act also asserts that its purpose is to promote the adoption of human-centric AI, which serves as a tool for people, with the ultimate aim of enhancing human wellbeing, including improving working conditions[101].

Thus, public authorities and employers have a specific obligation to utilise scientific and technological innovation to eliminate work-related injury and illness. On the workers' side, this provision entitles them to benefit from the fruits of scientific and technological progress[102]. It has been proposed in the literature that technology in the work process could be designed to adapt to workers' abilities through "adaptive automation", where algorithms and AI could be programmed to ensure an optimal workload in terms of OSH[103]. In the author's view, such use of technology remains highly problematic, as it would still allow the employer to organise the work process without actually eliminating all known occupational hazards. As Todolí-Signes asserts, the best way to prevent and eliminate occupational hazards is by organising the work safely[104]. In the case of physical labour with high interaction between humans and technological tools, this should be done with the average, mediocre-performing worker in mind.

[99] Sec. 2(b)(5) and (6).
[100] Article 207(2).
[101] Article 1(1), Recital 6 and Recital 20.
[102] T. Wyka, *Generalny obowiązek pracodawcy ochrony życia i zdrowia pracowników*, Prawo i Zabezpieczenie Społeczne, 4 (2002), p. 21.
[103] A. Todolí-Signes, *op. cit.*, p. 13.
[104] *op. cit.* p. 14.

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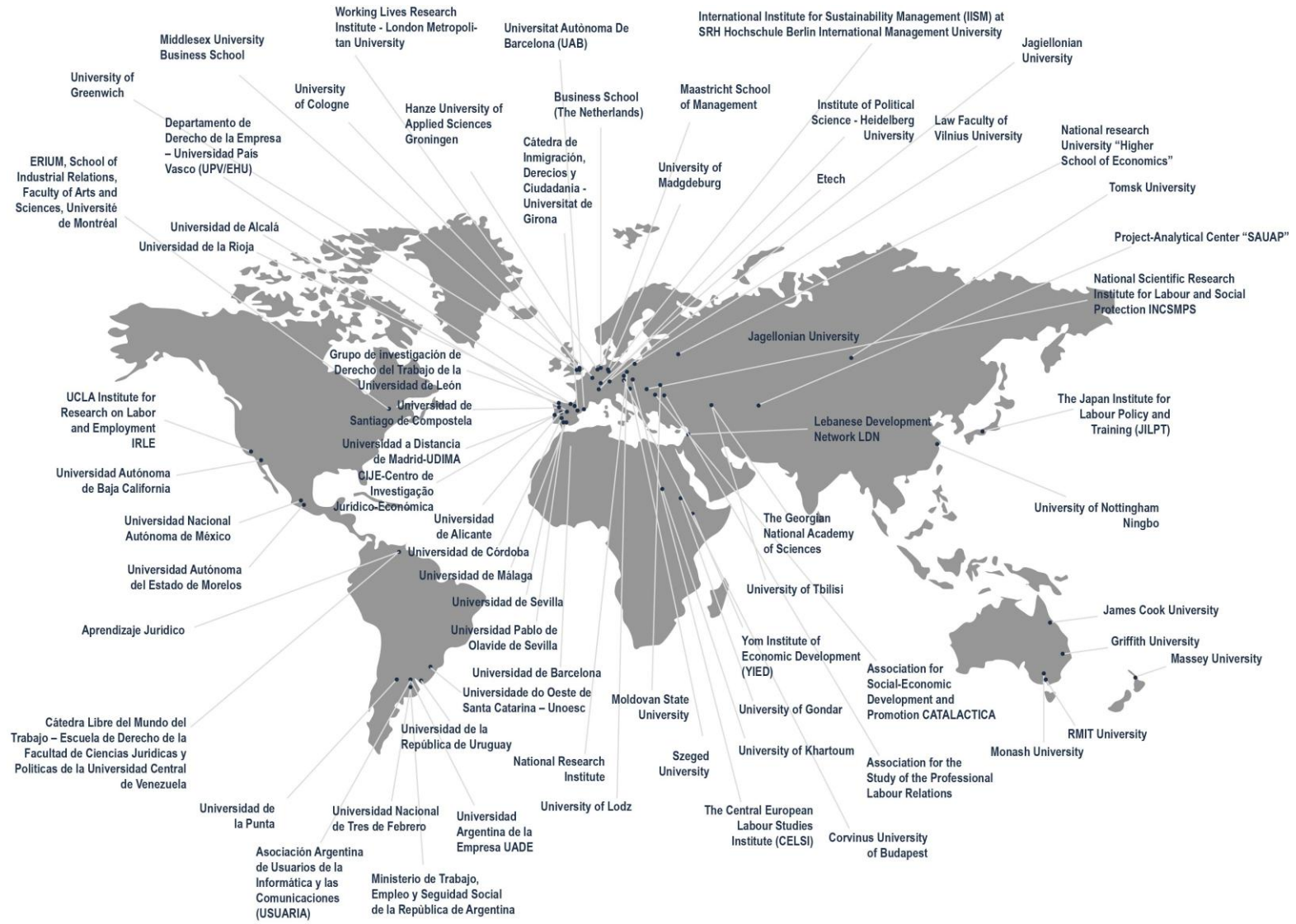

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