17

Artificial Intelligence and Labor Law

Aída Ponce Del Castillo and Simon Taes

17.1 INTRODUCTION

Technological systems are crucial elements in every organization and sector of the economy. With digitalization being a Megatrend, and the "platformization" of business models becoming more prevalent, workplaces are being transformed at the source, from the way a business is first conceived, to how work is organized and how individual workers perform their jobs. These transformations, which are often driven by Artificial Intelligence (AI) systems, impact work relations, work organization, working conditions, and – more generally – jobs and workers at all levels.

The agreements that employers and workers achieve can shape technological change in an organization. The connection between technological change and innovation on the one hand, and labor law on the other, needs to be addressed beyond possible conflictual considerations. Labor law is composed of a set of legal rules applicable to individual and collective relations that arise between (private) employers and those who work under their instruction in exchange for a certain remuneration.

The objective of this chapter is to shed light on the intersection between the role of AI in the work sphere and labor law, and to signal several issues that require a legal response. After Section 17.1, Section 17.2 of this chapter provides a general overview of the goal and function of labor law. Section 17.3 illustrates some of the main applications of AI systems in workplaces and addresses the ethical and legal concerns they raise. Section 17.4 discusses some essential labor law rights and concepts, including the role of Social Partners. Section 17.5 focuses on AI-related legislation that also applies to the context of employment, and assesses the extent to which it addresses the identified concerns. Finally, with a foresight perspective in mind, Section 17.6 reflects on a number of issues that require further attention by lawmakers.

17.2 SCOPE AND GOALS OF LABOR LAW

The application of AI systems in workplaces brings many legal questions and challenges for the relationship between employers and workers. For this reason, it is

necessary to first understand the characteristics of this relationship from a legal point of view. Considering that the regulation of employment relationships belongs to the domain of labor law, it is also pivotal to comprehend the meaning of this legal domain and the purposes it aims to achieve.

There are many different types of work relationships, each of which can be covered by various types of contractual agreements. Therefore, in legal terms, it can be rather complicated to define the "typical" employment relationship between an employer and workers. Considering this difficulty, an employment relationship is hence often assessed by its characteristics or indicators, which will determine whether or not a genuine employment relationship exists. This is demonstrated by Recommendation no. 198 of the International Labour Organization (ILO) regarding the employment relationship, published in 2006. The Recommendation suggests specific indicators to identify the existence of such relationship, including:

(a) *the fact that the work: is carried out according to the instructions and under the control of another party; involves the integration of the worker in the organization of the enterprise; is performed solely or mainly for the benefit of another person; must be carried out personally by the worker; is carried out within specific working hours or at a workplace specified or agreed by the party requesting the work; is of a particular duration and has a certain continuity; requires the worker's availability; or involves the provision of tools, materials and machinery by the party requesting the work;*

(b) *periodic payment of remuneration to the worker; the fact that such remuneration constitutes the worker's sole or principal source of income; provision of payment in kind, such as food, lodging or transport; recognition of entitlements such as weekly rest and annual holidays; payment by the party requesting the work for travel undertaken by the worker in order to carry out the work; or absence of financial risk for the worker* (emphasis added).[1]

These indicators emphasize that the employment relationship is predominantly characterized by work that is carried out under the control of another person in return for remuneration. These characteristics of the employment relationship also come forth in the case law of the Court of Justice of the European Union (CJEU). In its famous case Lawrie Blum, the Court explicitly states that "*the essential feature of an employment relationship, however, is that for a certain period of time a person performs services for and under the direction of another person in return for which he receives remuneration.*"[2] Although national legislation may apply different criteria to

[1] International Labour Organisation Recommendation no. 198 [2006] on the Employment Relationship.

[2] Case 66/85 *Deborah Lawrie-Blum v Land Baden-Württemberg* [1986] ECR 2121, ECLI:EU:C:1986:284, para 17.

establish these elements, the employment relationship is mainly characterized by work, subordination of the worker to the employer and remuneration.

In other words, this perspective on the employment relationship implies an imbalance between the subordinate worker and the authority of the employer. Based on this authority, the employer has the right to direct or give instructions to workers, to control or monitor their performance in the workplace and to discipline or, in case of misconduct, impose sanctions on them.

Considering this power asymmetry, one of the goals of labor law is to address the unequal bargaining position between the parties to the employment relationship.[3] This means that labor law aims to strike a balance between the interests of employers and workers,[4] both at the individual and at the collective level.

At the collective level, labor law aims to create a framework for social dialogue between workers' representatives, employers, and governments. This framework promotes democracy in workplaces, the redistribution of resources and economic efficiency.[5] Therefore, labor law includes workers' right to organize, to bargain collectively, and to strike.[6] In this regard, labor law also enables activities that are a form of economic cooperation.[7] For this reason, it provides information and consultation rights to workers' representatives and acknowledges the right to negotiate collective bargaining agreements regarding economic and social policy or working conditions (see Section 17.4). These collective agreements may be considered as a set of rules that are able to limit the arbitrariness of being subjected to the complete control of the employer and, therefore, as a means to balance the interests of workers and employers.[8]

At the individual level, labor law not only establishes minimal standards for working conditions but also encompasses provisions that protect the personal integrity and self-development of workers.[9] This implies that labor law includes on the one hand regulation about working conditions (such as working times, occupational safety and health and remuneration). On the other hand, it addresses the human dignity of workers and protects their human rights in the workplaces, such as the protection of their private life. More generally, labor law also pursues the protection and promotion of human autonomy and social justice.[10]

[3] International Labour Organisation Recommendation no. 198 [2006] on the Employment Relationship, preamble.

[4] Frank Hendrickx, "Foundations and functions of contemporary labour law" (2012) *European Labour Law Journal*, 3: 122.

[5] Guy Davidov, "Collective bargaining laws: Purpose and scope" (2004) *International Journal of Comparative Labour Law and Industrial Relations*, 20: 83.

[6] Davidov, Collective Bargaining Laws: Purpose and Scope 82.

[7] Davidov, Collective Bargaining Laws: Purpose and Scope 82.

[8] Davidov, Collective Bargaining Laws: Purpose and Scope 85.

[9] Frank Hendrickx, "Foundations and functions of contemporary labour law" (2012) *European Labour Law Journal*, 3: 123.

[10] Guy Davidov, "Articulating labour law's goals: Why and how" (2012) *European Labour Law Journal*, 3: 148.

17.3 MAJOR USES OF AI IN THE EMPLOYMENT CONTEXT

AI is increasingly introduced in workplaces, for an increasing number of tasks. It is found in almost every sector of the economy, from agriculture to education, healthcare, manufacturing, public services, retail and services, or transport – all of which have implications for the underlying employment relationships in those sectors. Initially, AI adoption primarily affected low- and middle-skilled workers, whose tasks tend to be routine. However, it is extending to high-skilled workers who perform cognitive tasks.[11] AI find applications in many different work contexts, including automation and robotics, especially of repetitive tasks; but also predictive analytics; virtual assistant systems for scheduling or handling customer enquiries; human resources management, screening and recruitment processes; quality control of products and services; predictive maintenance and monitoring of workers.[12] Moreover, emerging applications of AI, such as generative AI, are gaining traction. Research forecasts that two-thirds of occupations could be partially automated by AI systems.[13] Labor law is especially concerned with the use of AI applications that assist in decision-making about workers and their working conditions. This particular use of AI is referred to as the phenomenon of algorithmic management, which deserves to be addressed more in-depth.

17.3.1 *The Specific Case of Algorithmic Management: Automated Decision-Making and Monitoring Systems*

One of the most prominent uses of AI systems in the context of employment concerns the management of workers. It can be broadly understood as the use of data-driven tools that collect and analyze an extensive amount of data on workers in order to allocate tasks to them, to evaluate their performance, or to discipline them.[14] Taking a more granular view, algorithmic management can be defined as

[11] Artificial Intelligence and Employment. New evidence from occupations most exposed to AI (2021) OECD Policy brief on the future of work, www.oecd.org/future-of-work/reports-and-data/AI-Employment-brief-2021.pdf, accessed May 29, 2023.

[12] Aleksandr Christenko, Vaida Jankauskaitė, Agnė Paliokaitė, Egidius Leon van den Broek et al., "Artificial intelligence for worker management: an overview" (2022) EU OSHA, https://osha.europa.eu/en/publications/artificial-intelligence-worker-management-overview? accessed May 29, 2023; OECD, "Panel discussion: the impact of AI on the labour market" International conference AI in work, innovation, productivity and skills (2021), https://oecd.ai/en/work-innovation-productivity-skills/key-themes/labour-markets, accessed May 29, 2023.

[13] Goldman Sachs Research, "Generative AI could raise global GDP by 7%" (2023), www.goldmansachs.com/intelligence/pages/generative-ai-could-raise-global-gdp-by-7-percent.html? accessed May 29, 2023.

[14] Katherine Kellogg, Melisa Valentine, and Angele Christin, "Algorithms at work: The new contested terrain of control" (2020) *Academy of Management Annals*, 14: 368.

> automated or semi-automated computing processes that perform one or more of the following functions: (1) workforce planning and work task allocation, (2) dynamic piece rate pay setting per task, (3) controlling workers by monitoring, steering, surveilling or rating their work and the time they need to perform specific tasks, nudging their behavior, (4) measuring actual worker performance against predicted time and/or effort required to complete task and providing recommendations on how to improve worker performance and (5) penalizing workers, for example, through termination or suspension of their accounts. Metrics might include estimated time, customer rating or worker's rating of customer.[15]

There is a genuine risk that the deployment of such tools occurs to the detriment of workers' social protection, allowing discrimination and the worsening of their working conditions.

Algorithmic management is a concept that has first been used in the mid-2000s, mainly in the context of delivery platforms in the USA. It started as a relatively "unseen" practice, but its wider adoption is happening incrementally and has now spread to many sectors of the economy.[16] Even though most algorithmic management tools are commercialized outside the European Union (EU), they are often also implemented in companies and organizations established within the EU or elsewhere in the world.

Algorithmic management can take different forms, with many examples found in recruitment processes to screen or analyze the CVs of job candidates, or to "assess" facial expressions during video interviews. It is however also used to assess the job performance of workers, by tracking and analyzing their physical work.[17] For instance, wearable devices are now used in warehouses, call centers, and other workplaces to produce metrics on productivity and create rankings of workers' performance.[18] Other wearables used for safety purposes integrate sensors to measure physical distancing, to detect a potential harmful environment on a specific site, or to measure physiological parameters of individual workers and observe their health conditions and well-being.[19] Algorithmic systems also exist that direct workers by specifying the tasks they have to carry out, including the order and timeframe in which this needs

[15] Aida Ponce Del Castillo, and Diego Naranjo, Regulating algorithmic management. An assessment of the EC's draft Directive on improving working conditions in platform work. *ETUI Policy Brief*, 2022, 08, https://etui.org/publications/regulating-algorithmic-management, accessed January 20, 2023.

[16] Sara Baiocco, Enrique Fernández-Macías, Uma Rani and Annarosa Pesole, "The algorithmic management of work and its implications in different contexts" (2022) *JRC Working Papers Series on Labour, Education and Technology* 2.

[17] Valerio De Stefano and Simon Taes, "Algorithmic management and collective bargaining" (2022) 29: *Transfer* 3.

[18] Alex Wood, "Algorithmic management: Consequences for work organisation and working conditions" (2021) *JRC Working Papers Series on Labour, Education and Technology* 7.

[19] Fan Wu, Taiyang Wu, and Mehmet Rasit Yuce, "Design and implementation of a wearable sensor network system for IoT-connected safety and health applications" (2019) *IEEE 5th World Forum on Internet of Things (WF-IoT)* 87–90.

to be done.[20] Other tools can track and evaluate teams at individual levels, collecting metrics to measure their level of interaction[21] or to nudge workers' behavior. This algorithmic management practice already permeates sectors such as transport and logistics, with the objective of optimizing delivery services, but other sectors are following suit.

Finally, algorithmic management is at the heart of digital labor platforms, where it is used to process customer feedback or to analyze and evaluate workers. This is especially the case for transport-oriented platforms, which use algorithmic systems to manage drivers.[22] These workers receive their assignments based on, among others, their location and profile, and they are then provided with directions to pick up customers or deliver orders.

17.3.2 *Challenges of Algorithmic Management*

These examples demonstrate that AI systems are already present in workplaces and raise numerous questions for labor law.[23] Adopting an interdisciplinary approach, this section offers a non-exhaustive mapping of the most relevant issues that require attention, touching upon elements that relate not only to labor law provisions, but also privacy and data protection rules, fundamental rights, and computer science practices.

Large processing of data. The first issue to point out, is that algorithmic management relies on the complex processing of large amounts of personal data, which allows for the *"quantification of workers."*[24] Two important questions that need to be addressed in this context are: Why are personal (and potentially also sensitive) data collected? And for what purposes are such data used? After all, someone must explicitly take the decision of collecting and using data, and such decisions needs to be accounted for. As noted earlier, when algorithmic management systems are used to assess workers' performance, this can enable the analysis or monitoring of processes that would go beyond the supervision of a human manager. In other words, algorithmic management not only leads to monitoring workers to extents unthinkable in the past, but also to the collection and processing of data to analyze and make decisions about workers' jobs and

[20] Kellogg, Valentine and Christin, "Algorithms at work: The new contested terrain of control" 368.

[21] Alan Hern, "Microsoft productivity score feature criticised as workplace surveillance" *The Guardian* (November 26, 2020) accessed January 23, 2023.

[22] Rachel Aleks, Michael Maffie and Tina Saksida, "Collective bargaining in the digitized workplace" Dionne Pohler (ed), *Reimagining the Governance of Work and Employment* (Labor and Employment Relations Association, 2020) 91.

[23] For more information on the issues related to algorithmic management, see Valerio De Stefano and Simon Taes, "Algorithmic management and collective bargaining" (2022) *Transfer* 29: 5–7.

[24] Phoebe Moore and Andrew Robinson, "The quantified self: What counts in the neoliberal workplace" (2016) *New Media & Society*, 18: 2774–2792.

their working conditions in a far more intrusive manner. Although algorithms themselves are used to implement certain rules,[25] the actual decision-making is not yet fully in the hands these systems. Indeed, behind AI systems, there are human beings who set rules and parameters for data collection and for decision-making. Accordingly, before such systems are implemented in workplaces, important concerns about responsibility and accountability for these systems and their impact on workers need to be addressed.

Transparency of AI systems. A second issue relates to the transparency of the systems' architecture, operations, and opacity around the purpose of the systems. To determine whether algorithmic management systems process personal data lawfully, it is important that their operations can be verified. This is also important to assess whether they are affected by certain biases – which can lead to the discrimination of vulnerable groups of workers – or whether they showcase other failures due to poor data quality, inaccuracy or errors. Some cases have already evidenced that bias in learning systems resulted in discriminatory outcomes. For example, Amazon introduced a recruiting Machine Learning based algorithm to sort out and select talented applicants on the basis of selected features of their CV. However, the algorithm considered male candidates as more talented, because it had been trained on the basis of data that reflected the male dominance across the tech industry.[26] Therefore, besides risks of privacy violations, the lack of transparency about how data is collected and processed may, among others, put workers in a position where they will not be treated equally and, hence, be deprived of job opportunities on the basis of discriminatory criteria.

Privacy and data protection rights. A third issue relates to the effective protection of workers' right to privacy and data protection when working alongside AI systems. Article 22 of the General Data Protection Regulation (GDPR)[27] gives data subjects "*the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her.*" However, the scope of application of this article seems to be interpreted rather restrictively.

Three legal proceedings were brought before the District Court of Amsterdam by the App Drivers and Couriers Union, a platform workers union, claiming violations of the EU GDPR: a first case, *Uber drivers* v. *Uber*, on transparency requests and

[25] Sara Baiocco, Enrique Fernández-Macías, Uma Rani, and Annarosa Pesole, "The Algorithmic Management of work and its implications in different contexts."

[26] Roberto Iriondo, "Amazon Scraps Secret AI Recruiting Engine that Showed Biases Against Women, Carnegie Mellon University" (October 11, 2028), www.ml.cmu.edu/news/news-archive/2016-2020/2018/october/amazon-scraps-secret-artificial-intelligence-recruiting-engine-that-showed-biases-against-women.html, accessed January 23, 2023.

[27] General Data Protection Regulation. EU Regulation 2016/679, https://eur-lex.europa.eu/eli/reg/2016/679/oj, accessed May 12, 2023.

access to personal data[28]; a second case, *Uber drivers* v. *Uber*, on deactivation of drivers accounts and termination of their contract[29]; and a third case, *Ola drivers* v. *Ola Cabs*, on transparency requests by drivers and access to their data.[30]

The App Drivers and Couriers Union relied inter alia on Articles 15 of the GDPR to gain access to all their personal data processed by the platforms, including the use of drivers' monitoring systems such as Uber's Real Time ID and Ola's Guardian system. On the basis of Article 22 of the GDPR, the drivers also asked to receive information on the platforms' algorithmic systems that make decisions about them, including the deactivation of their accounts, known as "robo-firing."

However, in judgments pronounced on March 11, 2021, the Amsterdam District Court rejected most of the drivers' claims, as it found that Article 22 did not apply to these algorithmic systems. The platforms had demonstrated that staff members intervened during the decision-making process and that the decisions did not significantly affect the drivers, thus rendering the protection of Article 22 inapplicable.

Moreover, the App Drivers and Couriers Union appealed to receive access to their personal data and to receive explanation about how automated decisions were made. The Court of Appeal in Amsterdam on April 4, 2023[31] decided positively in their favour. The court ruled that Uber had to provide access to the personal data related to profile, tags, reports per journey, individual ratings, upfront pricing-system, information regarding recipients of personal data, a category from the Guidance note, and information about automated individual decision-making. It also ruled that profiling and management assessments are personal data and they must be disclosed. Regarding the (automated) decisions, the court found that they were taken fully automatically, and that there was insufficient evidence of human intervention which affected drivers significantly, partly because they affect their income without the access to the App. The court rejected Uber's argument of drivers taking collective action to seek access to their data, amounted to an abuse of data protection rights. It confirmed the right of third parties, including trade unions, to establish a gig workers data trust.[32] On the third judgment related to Ola Cars, the court ruled that data access requests fell within the scope of Article 15 of the GDPR. It ordered Ola Cars to disclose information to workers on automated decision-making relating to work allocation and fares.

[28] *Uber drivers* v. *Uber*. Amsterdam District Court [2021] C / 13/687315 / HA RK 20-207 on transparency request under the GDPR.

[29] *Uber drivers* v. *Uber*. Amsterdam District Court [2021] C / 13/692003 / HA RK 20-302 on deactivation of drivers' accounts.

[30] *Ola drivers* v. *Ola cars*. Amsterdam District Court [2021] C / 13/689705 / HA RK 20-258 on transparency request under the GDPR.

[31] *App Drivers & Couriers Union* v. *Uber & Ola* [Amsterdam, 2023] ECLI:NL:GHAMS:2023:793.

[32] De Rechtspraak "Uber and Ola-Cabs need to better inform London taxi drivers about automated decisions" (2023), www.rechtspraak.nl/Organisatie-en-contact/Organisatie/Gerechtshoven/Gerechtshof-Amsterdam/Nieuws/Paginas/Uber-en-Ola-Cabs-moeten-Londense-taxichauffeurs-beter-informeren-over-automatische-besluiten.aspx, accessed May 12, 2023.

Despite the more successful appeal, these cases demonstrate that the provisions and principles of the GDPR may be difficult to exercise vis-à-vis employers, in concrete to access request to data, transparency of the operation and logic of algorithmic management systems or other AI tools. In the context of employment, it is important to note that the employer, as a controller, must fulfill their obligations. These obligations include ensuring the protection of the data subject and being accountable for all personal data processed related to workers. It sheds light into how is crucial to provide additional information regarding the intended or future processing, on how automated decision-making may impact workers and on the limits of profiling. It is hence fair to question whether the workers' fundamental right to privacy is sufficiently safeguarded when their behavior and performance in the workplace is reduced or transformed to mere numbers and digits on the parameters or criteria applied in AI tools or algorithmic systems. The European Court of Human Rights (ECtHR) has given a broad interpretation to Article 8 of the European Convention on Human Rights, whereby the right to respect for private and family life also includes the right "*to develop one's physical and social identity*"[33] and "*to establish and develop relationships with other human beings.*"[34] Therefore, it would be paramount to provide further clarification on how these rights can actually be protected when AI applications are used at work.

Technostress. A fourth issue is the use of algorithmic management to influence (nudge) and control workers' behavior,[35] which may have consequences to occupational safety, health or well-being. The primary promise of AI in this domain is its ability to ability to enhance the accurate prediction of potential accidents. AI applications are increasingly integrated into equipment, industrial machines, drones, robots or self-driving vehicles. They can also be embedded in systems associated with personal protective equipment, such as bracelets, wearables, exoskeletons, sensors, and other hardware.

However, it is important to recognize that these systems rely on personal and sensitive data and on an increasingly digitized working environment, thereby posing risk significantly impacting workers' occupational health, safety and well-being. Additionally, complications may arise from other factors, such as when operators or managers have incomplete understanding of the data and its analysis. In broad terms, the key concerns arising within this context can be categorized into two dimensions: physical and psychosocial.

[33] *Denisov v Ukraine* App no 76639/11 (ECtHR September 25, 2018), ECLI:CE:ECHR:2018:0925 JUD007663911, para 95.

[34] *Niemietz v Germany* App no 13710/88 (ECtHR December 16, 1992), ECLI:CE:ECHR:1992:1216 JUD0013710 88, para 29.

[35] Alex J Wood, Mark Graham, Vili Lehdonvirta, and Isis Hjorth "Good gig, bad gig: Autonomy and algorithmic control in the global gig economy" (2019) *Work, Employment and Society*, 33(1): 56–75. W Alec Cram, Martin Wiener, Monideepa Tarafdar, & Alexander Benlian "Examining the impact of algorithmic control on Uber drivers' technostress" (2022) *Journal of Management Information Systems*, 39(2): 426–453.

When it comes to workers' physical safety, there can occur various types of risks, for example, a risk that the AI-driven machine, robot or partly automated vehicle can wrongly process or analyze the data it collects, thereby leading to an erroneous output or acting unexpectedly, resulting in an injury or accident. Similar risks exist when there are errors or inaccuracies in the dataset, when the system's parameters are not properly tuned or optimized, or when the system's accuracy – and hence the accuracy of its predictions – is faulty.[36] Risk assessment is crucial to identify the possible sources, mitigate or eliminate possible harms.

In relation to the psychosocial and well-being aspects, workers may experience high stress levels when they are aware that their behavior, location, performance, and even emotions, are being monitored and analyzed. In this context, the issue of technostress becomes relevant. The term was coined in 1984 and scholars describe this phenomenon as "*any negative impact on attitudes, thoughts, behaviors, or body physiology that is caused either directly or indirectly by technology*."[37] It combines five common technostressors: techno-overload, techno-invasion, techno-complexity, techno-insecurity, and techno-uncertainty. Technostress has become increasingly significant in the workplace, particularly when workers have to rely on information and communication technologies (ICTs) and AI-driven applications to carry out their tasks.[38]

Technostress may impact workers' psychophysical health and work-life, the consequences can be seen on the short- and long-term on somatic, cognitive–emotional, and behavioural levels,[39] for example, causing psychophysical distress and depleting both emotional and cognitive resources in the individual directly or indirectly.[40] These consequences can extend beyond the individual level, affecting the organizational and societal environments, because of the "always-on" culture and nature of work-related to ICT arrangements, that "create an unbridgeable gap between how an individual is expected to behave during family time and job requests as mediated through ICTs."[41]

[36] Sobhan Sarkar, Sammangi Vinay, Rahul Raj, Jhareshwar Maiti, and Pabitra Mitra, "Application of optimized machine learning techniques for prediction of occupational accidents" (2019) *Computers & Operations Research*, 106: 210–224.

[37] Bram Tombeur, *De smartphone en technostress* (Wolters Kluwer, 2018) 10; Jan Popma, *The Janus face of the "New Ways of Work": Rise, risks and regulation of nomadic work* (European Trade Union Institute, 2013) 10.

[38] Giorgia Bondanini, Gabriele Giorgi, Antonio Ariza-Montes, Alejandro Vega-Muñoz, A., and Paola Andreucci-Annunziata. "Technostress dark side of technology in the workplace: A scientometric analysis" (2020) *International Journal of Environmental Research and Public Health*, 17(21): 8013.

[39] Elisabeth Rohwer, Joelle-Cathrin Flöther, Volker Harth & Stefanie Mache "Overcoming the 'dark side' of technology – A scoping review on preventing and coping with work-related technostress" (2022) *International Journal of Environmental Research and Public Health*, 16(6): 3625.

[40] Valentina Sommovigo, Chiara Bernuzzi, Georgia Libera Finstad, Ilaria Setti, Paola Gabanelli, Gabriele Giorgi, & Elena Fiabane, "How and when may technostress impact workers' psychophysical health and work-family interface? A study during the COVID-19 pandemic in Italy" (2023) *International Journal of Environmental Research and Public Health*, 20(2): 1266.

[41] Sommovigo, Bernuzzi, and Finstad, "How and when may technostress impact workers' psychophysical health and work-family interface?" 15.

Finally, algorithmic management can also be used to reward and discipline workers, to elicit cooperation or to enforce compliance.[42] The automated deactivation of riders' accounts, whether temporarily or permanently, has for instance become a common practice. Some digital labor platforms reward high rated drivers by enabling them access to rides that are financially more attractive, and by giving them priority in queues at popular places (such as airports).[43] In this way, digital platforms "enforce" compliance by providing workers access to higher remuneration when they show certain behavior. There are also examples regarding algorithmic disciplining processes that lead to the discipline of workers. For instance, there is some evidence that in the hospitality sector algorithmic evaluations based on online reviews may result in dismissing staff members, when they do not meet the expected targets.[44] These uses contribute to precarious working conditions.

Considering the earlier mentioned concerns, one can raise the question how they should best be managed and how the risks should be prevented and mitigated? As companies have a legal responsibility to improve workers health by preventing excessive work-related technostress, it is recommended to apply specific prevention policies and other appropriate measures to remove risk factors and mitigate the potential negative effects associated with this practice.[45] Policies and strategies can be centered on the user, the technological environment, organizational environment, and social environment.[46]

More concretely, this involves establishing an ICT environment that meets job-specific requirements to reduce the frequency, duration, and/or intensity of technostressors; tailoring the use of ICTs to the needs of workers; providing transparency over how work-related data collected by technology is processed and used; providing transparency regarding which technologies are used for which purpose; and conducting impact assessments on the possible risks and consequences of AI systems prior to their implementation.[47] Further, a robust legislative framework is essential to address the identified issues of concern and to respond in a preventive and adequate manner. This may include the prohibition of some of these practices to the extent they are not compatible with workers' fundamental rights. Overall, given the goals of labor law, it may well be required that a new balance between workers' and employers' interests must be sought in light of the increasing

[42] Kellogg, Valentine, and Christin, "Algorithms at work: The new contested terrain of control" 380.

[43] *FNV v Uber BV*, Court Amsterdam District Court [2021], 8937120 CV EXPL 20–22882, ECLI:NL:RBAMS:2021:5029, para 29.

[44] Wood, "Algorithmic management: Consequences for work organisation and working conditions" 9.

[45] Rohwer, Flöther, and Harth "Overcoming the 'dark side' of technology" 17.

[46] Katharina Pflügner "Technostress management at the workplace: A systematic literature review" (2022) *Wirtschaftsinformatik 2022 Proceedings* 2.

[47] Michelle Berger, Ricarda Schäfer, Marco Schmidt, Christian Regal, and Gener Gimpel "How to prevent technostress at the digital workplace: A Delphi study" (2023) *Journal of Business Economics*, 1: 63.

application of AI in workplaces. Yet before turning to new legislative initiatives on AI that are relevant for the sphere of work, we discuss some of the key rights and concepts of labor law.

17.4 ESSENTIAL RIGHTS AND CONCEPTS IN LABOR LAW

17.4.1 *Information, Consultation, and Participation*

Both international and European law recognize the rights to information, consultation, and participation as three essential rights of labor law. At the international level, reference can be made to Convention 158 of the ILO, which states that workers' representatives must be consulted "*on measures to be taken to avert or to minimize the terminations and measures to mitigate the adverse effects of any terminations on the workers concerned such as finding alternative employment.*"[48]

ILO Recommendation 166 also refers to consultations on major changes in the undertaking:

> When the employer contemplates the introduction of major changes in production, programme, organisation, structure or technology that are likely to entail terminations, the employer should consult the workers' representatives concerned as early as possible on, inter alia, the introduction of such changes, the effects they are likely to have and the measures for averting or mitigating the adverse effects of such changes.[49]

Whereas the provisions of the earlier mentioned Convention must be implemented in the national legislation upon (voluntary) ratification by ILO Member States, the provisions of the Recommendation are not obligatory but rather contain reference standards for Member States on which they are encouraged to base their labor policies and legislation.[50]

In the EU, these labor law rights are enshrined in the Charter of Fundamental Rights of the European Union (CFR). Article 27 of the CFR states that "*workers or their representatives must, at the appropriate levels, be guaranteed information and consultation in good time in the cases and under the conditions provided for by Community law and national laws and practices.*"

Moreover, there are more than fifteen EU directives dealing with the right to information and consultation. The most important directives in this regard are: (1) the Directive on European Works Councils[51]; (2) the Directive on Employee

[48] International Labour Organisation Convention no. 158 on the Termination of Employment [1982], Article 13.

[49] International Labour Organisation Recommendation no. 166 on the Termination of Employment [1982], para. 20.

[50] Jean-Michel Servais *International Labour Law* (Wolters Kluwer, 2022) 58 and 81.

[51] Directive 2009/38/EC of May 6, 2009 on the establishment of a European Works Council or a procedure in Community-scale undertakings and Community-scale groups of undertakings for the purposes of informing and consulting employees [2009] OJ L122/28.

Involvement in the European Company,[52] (3) the European Framework Directive on Information and Consultation, which sets the minimum requirement for workers' right to information, consultation, and participation[53] and the (4) Directive relating to collective redundancies[54].

Whenever technological changes are introduced in European multinational companies, the Directive on European Works Councils applies. Point 1(a) of Annex I of the Directive states that "*the information and consultation of the European Works Council shall relate in particular to […] substantial changes concerning organisation, introduction of new working methods or production processes to negotiate about the impact of the introduction of new processes […].*" European Works Councils (EWC) are the information and consultation bodies that bring together both management and workers representatives from the European countries in which a given multinational company has operations. In the EWC, the representatives of central management inform and consult the workers' delegation, and they can negotiate a variety of topics and company decisions that have an impact at a transnational level.[55] Collectively, this body of legislation aims at providing workers and employers with strong social protection, in order to improve living and working conditions and to protect social cohesion.[56] It should also be added that various of these rights are protected through national legislation too.

17.4.2 *Social Dialogue*

Another essential component of the labor law acquis concerns *Social Dialogue*. This refers to the specific role of social partners, meaning the recognized organizations representing the two sides of the industry, the employers and employees. The social partners usually comprise employers' organizations and trade unions respectively.

Social Dialogue is a unique instrument of governance and cooperation. At international level, the ILO is the only tripartite United Nations agency that brings together governments, employers and workers of 187 member States. The ILO

[52] Council Directive 2001/86/EC of October 8, 2001, supplementing the Statute for a European company with regard to the involvement of employees [2001] OJ L 294/22.

[53] European Parliament and Council Directive 2002/14/EC of March 11, 2002, establishing a general framework for informing and consulting employees in the European Community – Joint declaration of the European Parliament, the Council, and the Commission on employee representation [2002] OJ L 80/29. ETUI, "Worker participation issues in EU," www.worker-participation.eu/EU-Framework-for-I-C-P/Information-and-Consultation/Fragmented-legislation-to-be-harmonised, accessed November 25, 2022.

[54] Council Directive 98/59/EC of July 20, 1998, on the approximation of the laws of the Member States relating to collective redundancies [1998] OJ L 225/16.

[55] ETUI. European Works Councils, www.worker-participation.eu/European-Works-Councils, accessed January 23, 2022.

[56] European Commission. Labour law. Employment, Social Affairs & Inclusion. Labour law – Employment, Social Affairs & Inclusion – European Commission (europa.eu), accessed January 20, 2023.

defines Social Dialogue as "*all types of negotiation, consultation or simply exchange of information between, or among, representatives of governments, employers and workers, on issues of common interest relating to economic and social policy.*" Social Dialogue can take numerous forms and the ILO recognizes the following[57]:

- "*Negotiation, consultation and information exchange between and among governments, employers' and workers' organizations;*
- *Collective bargaining between employers/employers' organizations and workers' organizations;*
- *Dispute prevention and resolution; and*
- *Other approaches such as workplace cooperation, international framework agreements and social dialogue in the context of regional economic communities.*"

In Europe, social dialogue encompasses bi-partite dialogue between employer organizations and trade unions. Importantly, the Treaty on the Functioning of the European Union (TFEU) recognizes and promotes the role of the social partners in the EU, who can contribute to policy-making and design and implement national reforms in the social and employment areas, both at national and European level. Their involvement in policymaking has been acknowledged in Guideline 7 of Council Decision 2018/1215 for the employment policies of the Member States, as well as in Principle 8 of the European Pillar of Social Rights.[58] Some recent examples of social dialogue themes are education, skills and training, the circular economy, climate change, telework, and the right to disconnect.[59]

The European Social Dialogue can also be tripartite and involve public authorities. It then refers to discussions, consultations, negotiations and joint actions involving European Social Partners, who are organizations working at EU level and taking part in consultations and negotiating agreements.[60] Tripartite social dialogue contributes to the construction of EU economic and social policies, and has a role in strengthening democracy, social justice and a productive and competitive economy. The association of employers, workers organizations and governments, in the design and implementation of economic and social policies, allows for a balanced consensus in such policies and the taking into account of the interests of all the parties involved.[61]

[57] ILO, Social Dialogue and Tripartism www.ilo.org/global/topics/workers-and-employers-organizations-tripartism-and-social-dialogue/lang–en/index.htm, accessed November 27, 2023.

[58] EUROFOUND "Social Partners," www.eurofound.europa.eu/topic/social-partners, (December 20, 2022) accessed January 23, 2022.

[59] EU Social Dialogue Resource Centre, https://resourcecentre.etuc.org/eu-social-dialogue, accessed November 25, 2022.

[60] European Commission. "Social Dialogue," https://ec.europa.eu/social/main.jsp?catId=329&langId=en, accessed January 21, 2023.

[61] Junko Ishikawa, "*Key features of national social dialogue: A social dialogue resource book.*" Vol. 11. (International Labour Office, 2003).

17.4.3 *The Autonomous Framework Agreement on Digitalization*

Social partners conduct bi-partite negotiations at inter-sectoral, sectoral or company level, which can result in autonomous agreements. Articles 154 and 155 of the TFEU provide a legal basis to negotiate Framework Agreements, which are contractually binding on social partners and their members.

In the field of digitalization, one of the core agreements that European social partners have negotiated and signed in 2000 concerns the "Autonomous Framework Agreement on Digitalization."[62] This agreement is the result of challenging negotiations between the European Trade Union Confederation (ETUC), BusinessEurope, the European Centre of Employers and Enterprises providing Public Services and Services of general interest (CEEP) and the Association of Crafts and SMEs in Europe (SMEunited). It represents a shared commitment of the European cross-sectoral social partners to optimize the benefits and deal with the challenges of digitalization in the world of work.

The rationale of the Agreement is that digital technologies impact four interrelated dimensions: work content (skills), work organization (employment terms and conditions, work-life balance), working conditions (work environment, health and safety, physical and mental demands, well-being, climate, comfort, work equipment) and work relations (relations or interpersonal relations that can impact the performance and the well-being of the workers). To manage the interrelationship of these dimensions, the Agreement specifies that in addition, four issues need to be considered:

a) digital skills and securing employment: The challenge is to determine which digital skills and process changes are necessary, thereby allowing adequate training measures to be organized, and to foster digital transformation strategies in support of employment;
b) modalities of connecting and disconnecting from technology applications;
c) artificial intelligence, including the guarantee of the human-in-control principle; and
d) respect of human dignity and worker surveillance.[63]

European Social Partners recognize that AI systems have a valuable potential to increase the productivity of the enterprise, the well-being of the workforce and a better allocation of tasks between humans, between different parts of the enterprise, and between machines and humans. However, they also indicate that it is "*important to make sure that AI systems and solutions do not jeopardize but augment human*

[62] European Social Partners. "Autonomous Framework Agreement on Digitalisation," www.etuc.org/en/document/eu-social-partners-agreement-digitalisation, (June 2020) accessed November 25, 2022.

[63] Aida Ponce del Castillo, "Europe's digital agenda. People-centric, data-centric or both," in Bart Vanhercke and Slavina Spasova (eds), *Social policy in the European Union: state of play 2021. Re-emerging social ambitions as the EU recovers from the pandemic*, (ETUI OSE, 2022).

involvement and capacities at work."[64] They also stress that AI systems should be designed and operated in order to comply with legislation (including the GDPR), guarantee privacy rights and ensure the dignity of the individual worker.

In the Agreement, the European Social Partners also referred to the concept of "Trustworthy AI" which they aspire to implement, and defined it – based on the Ethics Guidelines of the Commission's High-Level Expert Group on AI[65] – as a concept that should meet three criteria:

- it should be lawful, fair, transparent, safe, and secure, complying with all applicable laws and regulations as well as fundamental rights and non-discrimination rules,
- it should follow agreed ethical standards, ensuring adherence to EU Fundamental/human rights, equality and other ethical principles and,
- it should be robust and sustainable, both from a technical and social perspective since, even with good intentions, AI systems can cause unintentional harm[66]

These criteria should be met throughout the AI system's entire life cycle and must be respected whenever AI systems are deployed in the world of work. The Agreement also acknowledges that there can be tensions between different principles, such as respect for human autonomy, prevention of harm, fairness and explicability of decision-making, and states that these tensions should be addressed. However, it does not provide mechanisms to do so.

By virtue of the Framework Agreement, social partners have taken the responsibility to implement the measures described therein at the national, sectoral, and enterprise level in all EU Member States. While, during the first year of the Agreement, their commitment focused on translating and disseminating its content, the second year is dedicated to the actual implementation of its measures.

17.5 LEGISLATIVE INITIATIVES ON AI THAT ARE PIVOTAL FOR LABOR LAW

The rule of law, democratic participation in policymaking and the respect of fundamental and social rights are essential in the labor context. With the increased presence of AI systems in workplaces and the risks they create, laws are needed that are up to the task of protecting these values. It is argued that relying on a multiplicity of ethical guidelines, codes of conduct or other similar voluntary initiatives to govern AI systems cannot sufficiently guarantee adequate workers' protection. Instead, enforceable rules are necessary, that also establish compensation mechanisms in

[64] European Social Partners. "Autonomous Framework Agreement on Digitalisation" 11.
[65] High-Level Expert Group on AI (2018) "Ethics Guidelines for Trustworthy AI," https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai, (April 8, 2019) accessed May 12, 2023.
[66] European Social Partners. "Autonomous Framework Agreement on Digitalisation" 11.

case workers' rights are infringed. It is worth exploring the EU's AI package in relation to the employment context.

17.5.1 *The AI Act*

In April 2021, the European Commission put forward a regulatory package on AI,[67] with at its core the Regulation laying down harmonized rules on AI, hereafter referred to as the AI Act, published in the Official Journal of the EU on July 12, 2024.[68] According to the European Commission, a legal framework on AI was needed "*to foster the development, use and uptake of AI in the internal market that at the same time meets a high level of protection of public interests, such as health and safety and the protection of fundamental rights, including democracy, the rule of law and environmental protection*." The claim to be putting fundamental rights at the heart of its approach, has been the object of criticism.[69]

It should be noted that the AI Act is modeled after product market regulation, typically used for technical safety standards. Therefore it is not specifically designed to address social issues and does not provide workers with specific rights. To address social issues, another legal basis could have been added to the text. However, whichever legal basis, Recital 9 recognizes that it "should be without prejudice to existing Union law, in particular on data protection, consumer protection, fundamental rights, employment, and protection of workers," and should not affect Union law on social policy and national labor law. Similarly, Article 2(11) emphasizes that the AI Act does not preclude the Union or Member States from maintaining or introducing laws, regulations, administrative provisions or collective agreements more favourable to workers. However, the disregard for labor-related issues may in fact diminish the legal protection currently afforded by labor law, posing a significant risk to be addressed.[70]

[67] The EC's AI package also included a Communication on Fostering a European approach to Artificial Intelligence and a review of the Coordinated Plan on AI with EU Member States. EU Commission "A European approach to artificial intelligence," https://digital-strategy.ec.europa.eu/en/policies/european-approach-artificial-intelligence, accessed May 12, 2023.

[68] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act), https://eur-lex.europa.eu/eli/reg/2024/1689/oj, accessed July 23, 2024.

[69] See Chapter 12 of this book. See also Nathalie Smuha et al., "How the EU can achieve legally trustworthy AI," available at *SSRN* 3899991 (2021); Michael Veale and Frederik Zuiderveen Borgesius, "Demystifying the draft EU artificial intelligence act" (2021) *Computer Law Review International*, 22.

[70] Aida Ponce Del Castillo "The AI regulation: entering an AI regulatory winter? Why an ad hoc directive on AI in employment is required" (2021) *ETUI Policy Brief* 06; Jeremias Adams-Prassl "Regulating algorithms at work: Lessons for a 'European approach to artificial intelligence" (2022) *European Labour Law Journal*, 13(1), 30–50; Valerio De Stefano, "The EU Proposed Regulation on AI: a threat to labour protection?" (2021) Global Workplace Law and Policy.

The EU Commission has recognized that the use of discriminatory AI systems in employment might violate many fundamental rights and lead to broader "*societal consequences, reinforcing existing or creating new forms of structural discrimination and exclusion.*"[71] Therefore, Annex III of the AI Act lists high-risks AI systems related to the employment sphere. Point 3 refers to systems relating to *education and vocational training*, Point 4 refers to systems that relate to *employment, workers management, and access to self-employment*. Are mentioned in particular: "*AI systems intended to be used for the recruitment or selection of natural persons, in particular to place targeted job advertisements, to analyse and filter job applications, and to evaluate candidates*" and "*AI systems intended to be used to make decisions affecting terms of work-related relationships, the promotion or termination of work-related contractual relationships, to allocate tasks based on individual behaviour or personal traits or characteristics or to monitor and evaluate the performance and behaviour of persons in such relationships.*" As discussed in Chapter 12 of this book, high-risk AI systems are subjected to certain mandatory requirements.

In addition to regulating high-risks systems, the AI Act prohibits certain practices. In the context of work, Article 5(f) prohibits the use of AI systems "*to infer emotions of a natural person in the areas of workplace and education institutions, except where the use of the AI system is intended to be put in place or into the market for medical or safety reasons.*" Recital 44 states that such systems can "*lead to discriminatory outcomes*" and "*be intrusive to the rights and freedoms of the concerned persons,*" particularly considering the imbalance of power in the context of work or education combined with the intrusive nature of these systems. However, the prohibition does not apply to AI systems placed on the market strictly for medical or safety reasons, such as systems intended for therapeutical use. This exception allows the use of AI systems under the guise of medical or safety reasons, while the actual motive may be different.

Connected to this, it should be noted that the notion of "emotion recognition system" "*does not include physical states, such as pain or fatigue, including, for example, systems used in detecting the state of fatigue of professional pilots or drivers for the purpose of preventing accidents*" (Recital 18). Fatigue or pain are not considered as emotions and thus not subject to the prohibition established by Article 5(f).

Most of the burden to comply with the AI Act falls on providers. However, from a workplace perspective, very few employers are providers; the majority are deployers. It is therefore key for workers and their representatives to keep a close eye on how deployers comply, notably with their *ex ante* obligation to inform (or to inform and consult) workers or their representatives, under Union or national law, before putting into service or using a high-risk AI system at the workplace (Article 26(7)). If the conditions for those obligations in other legal instruments are not fulfilled, it

[71] EU Commission "Impact Assessment accompanying the proposal for a regulation laying down harmonised rules on artificial intelligence" (2021), https://digital-strategy.ec.europa.eu/en/library/impact-assessment-regulation-artificial-intelligence, accessed January 20, 2023.

still remains necessary to ensure that workers and their representatives are informed on the planned deployment of high-risk AI systems at the workplace (Recital 92).

Pursuant to Article 26 (and Annex VIII), deployers also have to comply with other specific obligations when deploying high-risk systems. These include transparency and information obligations to enable appropriate human oversight of high-risk systems (Articles 13 and 14), as well as disclosure obligations for the use of certain systems (Article 50). To secure that the provision of information (and consultation) occurs effectively, the AI Act encourages providers and deployers to ensure a sufficient level of AI literacy of their staff and other persons dealing with the operation and use of AI systems on their behalf (Article 4).

Finally, the AI Act addresses the role of trade unions in the context of stakeholder involvement and training. It emphasizes their involvement in the development and deployment of AI systems and voluntary codes of conduct (Recital 165). As social partners, they are not involved in the AI Office (Article 64), but they do have a role in the Advisory Forum established to advise and provide technical expertise to the European Artificial Intelligence Board and the Commission (Recital 150 and Article 67(2)).

17.5.2 *The AI Liability Directive*

The rules on AI could not have been complete without a liability regime. The EC's AI Liability Directive[72] proposes a strict liability regime for non-contractual fault-based civil claims for damages arising from random events or incidents caused by an AI system, between entities not bound by a contract. The proposed directive is complementary to the AI Act and hence, focuses on high-risk AI systems considered products, whereby an injured person has to prove that an AI system caused damage. The key liable economic operator is the provider or user. The burden of proof for the injured person can be eased if certain conditions are met, in order to obtain compensation under national law. However, it is uncertain whether and how the AI liability directive applies to labor law. Three situations could arise. First, in cases where an AI system is involved in firing workers, the AI Liability Directive does not apply most likely due to the existence of an employment contract. Second, in cases where AI systems are used for recruitment services, the proposed directive does not apply because the AI system "only provided information or advice which was taken into account by the relevant human actor," as Recital 15 states. Finally, in cases where a worker has suffered harm involving an AI system, the directive will probably not apply due to the contractual nature of these damages. However, other (safety) obligations in labor law may apply and the employer could be held liable on the basis of these obligations.

[72] EU Commission "Proposal for a Directive on adapting non contractual civil liability rules to artificial intelligence" (2022), https://commission.europa.eu/document/f9acodaf-baa3-4371-a760-810414ce4823_en, accessed May 29, 2023.

Finally, the AI liability directive is welcome as a first attempt to provide a harmonized regime to liability challenges that arise in an AI-context. It includes novel provisions, one of them being the disclosure of information, which could be potentially useful for deployers of AI systems. However, it remains unclear whether and how individuals can utilize the information disclosed effectively.[73] The proposed directive also provides a rebuttable presumption of a causal link between the fault of the user of a high-risk AI system and the output of this AI system, when this user does not comply its obligations to use or monitor the AI system in accordance with the accompanying instructions.[74] Despite its potential to substantially facilitate the proof of damages for workers, this presumption will not apply for many applications of work-related AI systems due to the contractual nature of the claims for these damages.

17.5.3 *The New Machinery Regulation*

Another piece of the "AI Package" concerns the new Regulation on Machinery 2023/1230, replacing Machinery Directive 2006/42/EC.[75] This directive was based on the principles of the so-called "New Approach to Technical Harmonization and Standards."[76] It set a range of minimum health and safety requirements that machinery must fulfill to be placed on the market and the conformity assessment through which it can be demonstrated that the machine indeed fulfils them. Machines that meet these requirements are said to have a "presumption of conformity." Given the role that machinery plays in many work environments, the directive was key to ensure workers' safety, mainly in the industrial and manufacturing sectors.

An evaluation study conducted by the European Commission in 2018 identified a number of issues with the directive, and found that it required more efficiency. The study concluded that a new version of the legislation was needed, ideally in the form of a regulation, to facilitate the homogenous application of and alignment with horizontal rules on essential health and safety requirements to guarantee that all pieces

[73] Orian Dheu, Jan De Bruyne, and Charlotte Ducuing. "The European Commission's Approach to Extra-Contractual Liability and AI–A First Analysis and Evaluation of the Two Proposals" (2022) available at SSRN accessed June 19, 2023.

[74] EU Commission "Proposal for a Regulation of the European Parliament and of the Council on machinery products" (2021) (Article 4.3), https://ec.europa.eu/docsroom/documents/45508, accessed May 12, 2023.

[75] Regulation (EU) 2023/1230 of the European Parliament and of the Council of 14 June 2023 on machinery and repealing Directive 2006/42/EC of the European Parliament and of the Council and Council Directive 73/361/EEC, https://eur-lex.europa.eu/eli/reg/2023/1230/oj, accessed August 2, 2024.

[76] The "New Approach" is a legislative technique that aims at preventing barriers to trade in the EU. It limits the adoption of rules to essential safety requirements with which products must conform to be put on the market. European Standardization Organizations (ESOs) have the task of drawing up the technical specifications and/or Harmonized Standards needed to meet the Essential Requirements. Although Harmonized Standards are not mandatory, products manufactured in conformity with them, are presumed to be in conformity with the Essential Requirements. CEN/CENELEC, https://boss.cen.eu/reference-material/guidancedoc/pages/newapproach/, accessed May 12, 2023.

of industrial machinery (interchangeable equipment, safety components or lifting accessories) are safe to use at work.

Beyond an update of the directive's provisions, the new Machinery Regulation also proposes Essential Health and Safety Requirements (EHSRs) listed in Annex III that address the latest developments in digital technology, including the integration of AI systems and Internet of Things (IoT) into machinery equipment and the collaboration between human and robots. The EU Commission's underlying rationale is that although the risks of AI systems are regulated by the AI Act, the entire machinery needs to be safe, considering the interactions between the machinery components, including AI systems. The EU Commission states that "*machines are becoming more powerful, autonomous and some look almost like humans, which requires adapting the EHSRs related to the contact between the human and the machinery*."[77] The regulation provides specifically that:

(a) For evolving machines: in the risk assessments, manufacturers will need to include those risks appearing after the machinery is placed on the market due to its evolving and autonomous behaviour;
(b) On ergonomics: under the intended conditions of use, the discomfort, fatigue and physical and psychological stress faced by the operator shall be reduced to the minimum possible, taking into account ergonomic principles;
(c) Regarding risks related to moving parts and psychological stress: the prevention of risks "shall be adapted to human-machine coexistence, in a shared space without direct collaboration, and human-machine interaction."

The new Regulation also addresses "*the risks related to 'moving parts' (accidents in human-robot collaboration), cyber-safety aspects in the connected machinery, and software updates after the placing on the market of the machinery product which might change functionality*."[78] The Regulation was published in the Official Journal of the EU on June 29, 2023, but it will only become applicable from January 2027 onwards.

17.5.4 *The Directive on Improving Working Conditions in Platform Work*

A third important EU legislative initiative concerns the directive on Improving Working Conditions in Platform Work.[79] This directive is the first piece of EU

[77] EU Commission "Explanatory Memorandum of the proposal for a Regulation on Machinery Products," Brussels, 21.4.2021, COM(2021) 202 final, https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52021PC0202, accessed August 2, 2024.

[78] Mari Tuominen and Solène Festor, "Revising the Machinery Directive. Briefing. Initial Appraisal of a European Commission Impact Assessment" (2020) European Parliament. www.europarl.europa.eu/RegData/etudes/BRIE/2021/694208/EPRS_BRI(2021)694208_EN.pdf, accessed January 20, 2023.

[79] EU Commission "Provisional agreement for a directive of the European Parliament and of the Council on improving working conditions in platform work," https://data.consilium.europa.eu/doc/document/ST-7212-2024-ADD-1/en/pdf), accessed July 22, 2024.

labor law that regulates automated monitoring and decision-making systems. In the European Commission's view, platform work is developing rapidly, raising new challenges relating to working conditions, algorithmic management, access to social protection and benefits, and collective representation and bargaining. These concerns were more visible during the pandemic, given the increased reliance on platform work in this period.

The work that led to the directive was a two-phase consultation of the European Social Partners, through which the European Commission identified four specific challenges: (1) the employment status of platform workers, (2) the algorithm-based business model of the platforms, (3) the cross-border nature of platform work, and (4) the existence of regulatory gaps at EU level. Nicolas Schmit, Commissioner for Jobs and Social Rights, made an important statement referring to the role of social partners in this field: "*We cannot lose sight of the basic principles of our European social model (…) and social partners' views on this will be key in finding a balanced initiative for platform work in the EU.*"[80] Therefore, the Commission decided to propose a new directive that could help address these concerns.

The directive has two main goals: (1) to improve the working conditions of platform workers by facilitating the correct determination of their employment status through a rebuttable legal presumption, (2) to improve the protection of the personal data of platform workers by improving transparency and accountability in the use of automated monitoring and decision-making systems. The directive includes an innovative chapter on algorithmic management, with hybrid labor and data protection provisions. Article 7, in particular, limits the processing of personal data, notably biometrics data, or data related to the emotional or psychological state of workers. Article 7 not only applies to automated monitoring systems and automated decision-making systems, but also to automated systems *supporting* or taking decisions that affect persons performing platform work in any manner.

As the processing of workers' data by automated monitoring and decision-making systems is likely to result in a high risk to workers' rights, platforms must carry out a Data Protection Impact Assessment, following GDPR requirements (Article 8). They also must respect transparency and information obligations, in relation to the systems they use to take or support decisions that affect workers and their working conditions (Article 9). They must ensure human oversight (Article 10), with the involvement of workers' representatives, of the impact of individual decisions taken or supported by their systems. Finally, workers have the right to obtain an

[80] EU Commission "Protecting people working through platforms: Commission launches a first-stage consultation of the social partners" Press release, https://ec.europa.eu/commission/presscorner/api/files/document/print/en/ip_21_686/IP_21_686_EN.pdf (February 24, 2021) accessed January 20, 2023.

explanation from the platform for any decision taken or supported by their systems, as well as the right to review it (Article 11). In relation to health and safety, platforms must evaluate the risks of automated monitoring or decision-making systems, in particular possible work-related accidents, as well as psychosocial and ergonomic risks. They may not use automated monitoring or decision-making systems in any manner that puts undue pressure on workers or puts at risk their safety and their physical and mental health (Article 12).

17.5.5 *International Initiatives*

The EU is not the only jurisdiction that is taking legislative action on AI. Several international organizations worked simultaneously in this sphere, and their outcomes will impact the labor law context. In 2024, the OECD revised the "*Principles for responsible stewardship of trustworthy AI*." Initially adopted in 2019,[81] the Principle related to "transparency and explainability" mentions the need for AI actors "*to commit to transparency and responsible disclosure regarding AI systems*," and "*to make stakeholders aware of their interactions with AI systems, including in the workplace*."[82] At the same time, the Council of Europe, through its *ad hoc* Committee on Artificial Intelligence (CAHAI), and its successor the Committee on AI (CAI), adopted an international legally binding convention. The "Framework Convention on Artificial Intelligence, Human Rights, Democracy and the rule of law" aims to set "*minimum standards for AI development*" based on the Council of Europe's standards of human rights, democracy and the rule of law.[83] Similarly to the AI Act, the Council of Europe's convention deals with AI systems according to a risk-based assessment, and imposes new obligations based on the level of risk posed by the systems. It does not make reference to labour issues. At the United Nations, the ILO has the intention to develop a Policy Observatory on AI and Work in the Digital Economy, and to analyse the implications of shifts in AI regulation for decent work.[84] These are but a few of the initiatives that international organizations are establishing in this context.

Table 17.1 maps the key legal sources that are relevant for the use of AI systems in the workplace.

[81] OECD "Recommendation of the Council on Artificial Intelligence," https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449 (May 3, 2024), accessed July 22, 2024.

[82] OECD Recommendation of the Council on Artificial Intelligence (2024).

[83] Council of Europe, Committee on Artificial Intelligence. Framework Convention on Artificial Intelligence, Human Rights, Democracy and the Rule of Law, https://rm.coe.int/cai-2023-01-revised-zero-draft-framework-convention-public/1680aa193f, accessed (May 17, 2024) accessed July 22, 2024.

[84] ILO "Proposal for an ILO Policy Observatory on Work in the Digital Economy," www.ilo.org/global/research/events-courses/WCMS_857701/lang--en/index.htm#:~:text=Our%20proposal%20for%20the%20%27ILO,in%20the%20global%20digital%20economy, accessed May 12, 2023.

TABLE 17.1 *Key legislative instruments on AI for labor*

International level	EU level	National level
ILO Convention 153 ILO Convention 158 ILO Convention 166 European Convention on Human Rights	Treaty on the Functioning of the EU EU social acquis relating to employment and industrial relations: – Directive establishing a general framework for informing and consulting employees – Directive on employee involvement in the European Company – Framework Directive on occupational safety and health, and 5 individual Directives, addressing particular workplace environments or risks, including the OSH Strategic Framework 2021 – Directive on transparent and predictable working conditions – Directive on Work-Life Balance – Directive on Working Time – Machinery Regulation European Framework Agreements European Court of Justice case law	National law Collective agreements
AI-related initiatives that can impact work and employment		
OECD AI Principles Council of Europe on AI and Human Rights, Democracy and the Rule of Law	AI Act Upcoming AI Liability Directive Data Act Digital Services Act Digital Markets Act GDPR Regulation on promoting fairness and transparency for business users of online intermediation services (Platform to Business Regulation) Directive on improving working conditions in platform work	National AI strategies

Authors' own elaboration

17.6 FORESIGHT PERSPECTIVE: LABOR-RELATED AI ISSUES THAT REMAIN TO BE ADDRESSED

Aside from the fact that the AI Act takes a product safety approach, its list of high-risk systems does not comprehensibly address the full spectrum of problematic uses of AI systems in the context of employment. Likewise, the protection that will be afforded by the Platform Work Directive only applies to workers in digital labor platforms, even though automated monitoring and decision-making systems can pose

threats to workers also in non-platform contexts. Many legal gaps hence remain. Increasingly confronted with the use of AI systems, the world of work faces a multitude of open questions. These are reinforced by the relationship of subordination and the power imbalance that is typical of the employment context. The broader effect of AI systems on the world of work hence remains to be seen. Here below, we discuss a few aspects that require a further and multidisciplinary analysis, and provide some recommendations.

a) **Preserving autonomy in human–machine interactions**: Many AI systems converge in a diversity of forms and layers in workplaces. Worker autonomy entails ensuring that workers are "in the loop," in fully or semi-automated decision-making. This is particularly important when joint (human–machine) problem-solving takes place. To ensure that workers' autonomy is maintained, employers must ensure that the use of AI systems respects workers' agency. The tacit knowledge that each individual worker develops, through years of experience and learning, should not be taken away from them and transferred to the machine – whether it be a cooperative robot or a piece of software. Rather than using digital technologies to streamline and rationalize work processes, as has been the trend in recent years, with the corresponding reduction in worker agency, new technologies should be used to support the active involvement of workers, thereby promoting and strengthening their autonomy and agency.
b) **Informing about the purpose of AI systems at work**: In an occupational setting, having access to the code behind an algorithm is not useful per se. What matters to workers is understanding the overall architecture of the AI model, the intended purpose; the context of use, how they are embedded in a system or layers of systems in the workplace; how they are exposed to or which personal data is collected from them. The GDPR covers these aspects to some extent in relation to the transparency of processing of data, data access, and the right to explanation in automated decision-making. Article 11 of the AI Act provides that technical documentation of high-risk AI systems should be drawn up containing comprehensive information, related to the intended purpose, how the system interacts with other systems, the forms of the AI systems, a basic description of the user interface, among other listed in the Annex IV of the AI Act. Workers representatives need to have access to this documentation. Further action is needed to make sure their involvement in the oversight or evaluation, and in providing the guidance of how to exercise workers' rights. Consultation rights should be exercised when AI systems process workers personal data.
c) **Ensuring the exercise of the right to explanation for automated decisions**: As demonstrated by the example in Section 17.3.2, automated decision-making systems can impact workers in various ways: incorrect performance

assessment, the allocation of tasks based on the analysis of reputational data, or profiling. Additionally, these systems can exhibit biases in multiple aspects (e.g., in the design, data, infrastructure, or model misuse), all of which influence the outcomes. In such situations, the right to explanation becomes indispensable for workers. Drawing upon Articles 13–15 and Recital 71 of the GDPR and on Chapter III on algorithmic management the Platform Work Directive, it is imperative to establish legal provisions that enable workers from all sectors to exercise this right, while ensuring that employers establish adequate accountability measures. In practical terms, this entails provisions that clarify when automated decisions should be prohibited or restricted, as well as provisions related to obtaining information about the categories of such decisions. Also, legal clarifications should be introduced to facilitate: (a) understanding the significance and consequences of an automated decision in a given work context, that is simultaneously understandable, meaningful, and actionable (GDPR Art 12); and (b) mechanisms to challenge the decision with the employer or competent authority

d) **Developing AI risk assessments together with workers' representatives**: AI systems are often invisible due to their virtual nature. This means that identifying AI-related risks is not always an easy task. The possible risks are related to security and safety issues, physical and ergonomic hazards; errors, misuse of AI systems, or unintended or unanticipated harmful outcomes; bias, discrimination and loss of autonomy. These risks can impact various dimensions of workforce their fundamental rights, health, privacy and safety, encompassing both physical, well-being and psychosocial aspects. They can further exacerbate discrimination, manipulation, inequalities, and labor market disparities. The magnitude and severity of these risks depend on the affected population. Beyond their obligations to comply with occupational health and safety provisions, employers are also required to conduct both data and technology risk assessments, and a proportionality assessment, before the deployment of AI systems. This requires a workplace assessment of possible hazards that should address issues about health, cybersecurity, psychosocial, privacy and safety, as well as specific associated threats. The development of such risk assessment frameworks should build upon the long-standing tradition of occupational safety and health risk assessments. Workers' representatives should be systematically involved in the development of such frameworks, and have a role in characterizing the types and level of risk arising from the use of AI systems. They should also help identify proportionate mitigation measures, throughout the AI systems' life cycle.

e) **Setting limits to worker surveillance:** The ever-increasing market offer of data-driven technologies and AI solutions tends to encourage companies to use these tools to exercise power over workers beyond the employment relation. Traditional workplace monitoring is being surpassed by more intrusive

forms of surveillance, using data related to workers' physiology, behavior, biometrics and emotions, or political opinions. Consequently, companies can deploy tools that process workers' data for various purposes, some of which may infringe GDPR. As a result, workers face significant risks to their privacy and data protection rights. As noted earlier, the provisions of the GDPR are particularly relevant for the context of employment where the worker is in an unbalanced relationship *vis a vis* the employer and where sensitive data should not be processed and where "informed consent" in the employment context is not be a lawful legal ground for data processing. Therefore, given the power asymmetry, intrusive AI-based surveillance practices need to be clearly prohibited and only be allowed highly exceptionally, while ensuring the right of workers to exercise the control of their personal data. Moreover, general prevention policies should prevail over automated forms of prevention.

f) **Ensuring that workers become AI literate**: Acquiring technical skills and using them "at work," although necessary, is not enough and mostly serves the interests of one's employer. Becoming "AI literate" means being able to understand critically the role of AI systems and their impact on one's work and occupation, and being able to anticipate how it will transform one's career and role. There is scope here for a new role for workers' representatives expanding their responsibilities to include the role of "data representatives." This would involve identifying and highlighting digitally related risks and interactions, assessing the possible impacts of largely invisible technologies, and developing methods to preserve tacit knowledge and agency when working alongside AI systems. Workers' representatives, along with social partners more generally, should also play a role in making workers more AI literate. This can be achieved through an increased exercise of information and consultation rights, and through other educational activities.

17.7 CONCLUSION

Labor law deals with the relationship between workers and employers, and tries to address the imbalance between the parties involved in this relationship. Artificial Intelligence, one of the most disruptive technologies of our time, is increasingly used by companies, at all levels and in all sectors, with an impact on the employment relationship. As discussed in this chapter, AI applications impact workers, collectively and individually, in unprecedented ways. This creates new realities and new risks, from workers' surveillance to problematic algorithmic management practices, which can increase the imbalance in the employment relationship and further tip it in favor of employers.

In such an uncertain and changing reality, labor law can help to address some of the risks, such as the erosion of workers autonomy and agency, possible discriminatory practices, and the opacity of algorithmic decisions. Labor law experts should

also maintain an inter-disciplinary focus, draw on insights from other disciplines in order to address other connected aspects: Workers' data protection and privacy, human rights impact assessments, the increased reliance on standards and technical specifications, and so on. With the addition of a foresight perspective, labor law will not only be in a better position to address the impact of AI systems on labor, it will also better anticipate the impact on the world of work of other technologies that will emerge in the future.