

ARTIFICIAL INTELLIGENCE AND FULFILMENT OF WORKING TASKS: RULES AND RESPONSIBILITIES

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Summary: 1. Preliminary remarks. – 2. The multilevel legal framework, between European and National provisions. – 3. The impact of AI on employers’ side: the algorithmic management and the health and safety obligation. – 4. The impact of AI on employees’ side: the fulfilment of working tasks.

Abstract: Artificial Intelligence (AI) is profoundly reshaping Labour Law, raising significant regulatory and practical challenges. This paper examines the impact of AI on employment relationships, with a particular focus on employers’ decision-making and on employees’ task execution. After outlining the multi-level legal framework, the paper explores the risks and opportunities associated with algorithmic management, protection against discrimination, and occupational health and safety obligations. The discussion further delves into employees’ rights concerning AI implementation, investigating its implications for working tasks and professional training. The proposed approach advocates for a regulatory framework that harmonizes productivity gains with the protection of employees’ dignity and well-being in the AI era.

Keywords: Artificial Intelligence – Impact – Employment relationship – Rules and responsibilities.

1. Preliminary remarks

Although the earliest American studies on Artificial Intelligence (AI) date back to the 1950s¹, this phenomenon is relatively recent. From the perspective of Labour Law, at the national level, Italian scholars have been actively addressing the issue for the past few years, whereas the first pioneering studies in this field can already be traced back to the previous decade².

The growing attention to this topic stems from AI's significant advancements in recent years, which suggests an exponential increase in its use. This development has been driven by three unprecedented factors: *i*) the increasingly powerful hardware systems with enhanced computational capacity; *ii*) the availability of an immense volume of data (commonly known as “big data”), enabled by internet and global network connectivity; *iii*) the software systems built on algorithms that generate knowledge (so-called “machine learning”), rather than merely executing pre-defined operations³.

Nevertheless, it is essential to clearly define what we are referring to. Usually, AI identifies a technology able to replicate human reasoning. From a legal perspective, however, Regulation (EU) 2024/1689 has established a definition of AI, describing it as *«a machine-based system that is designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments»* (Art. 3, no. 1). Conversely, this definition *«should not cover systems that are based on the rules defined solely by natural persons to automatically execute operations»* (Whereas 12). Therefore, AI includes the “non-deterministic algorithmic systems”, which are characterized by their ability to learn autonomously (such as machine learning, deep learning, and deep neural networks), and which are distinguished from simpler software that merely executes predefined algorithms.

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¹ SARTOR, Giovanni. *L'intelligenza artificiale e il diritto*, Torino: Giappichelli, 2022, 25.

² See: TULLINI, Patrizia (eds.). *Web e lavoro. Profili evolutivi e di tutela*, Torino: Giappichelli, 2017, and DAGNINO, Emanuele. *Dalla fisica all'algoritmo: una prospettiva di analisi giuslavoristica*, Adapt University Press, 2019; more generally, on the impact of technological progress, CARINCI, Franco. *Rivoluzione tecnologica e diritto del lavoro: il rapporto individuale*, DLRI, 1985, 203.

³ See: CORTI, Matteo. *Intelligenza artificiale e partecipazione dei lavoratori. Per un nuovo umanesimo del lavoro*, DRI, 2024, 615.

The impact of AI on the workplace is already highly evident, especially in terms of workforce displacement. Faced with J. Rifkin's prediction of the "*end of work*", economists and sociologists have put forward two opposing perspectives. On the one hand, the *substitution approach* posits that AI has the potential to replace all human labour, ultimately leading to the end of work as we know it; on the other hand, the *complementary approach* argues that, as in any industrial revolution, AI will generate more (higher quality) jobs than it eliminates⁴.

Leaving aside this debate, the essay aims to deal with the current impact of AI on employment relationships, with a specific focus on the employers' organization of work, and on the employees' fulfilment of working tasks. More precisely, the objective is to explore the legal regulation of AI within the working contexts, both on the employer's and on the employee's side, highlighting critical issues, and identifying the solutions provided by the legal framework.

For this purpose, the essay first delves into the multi-level legal framework, to provide for a general overview of European and National provisions. By this, the discussion will develop an analysis of the implications of AI on the position of the employer, especially concerning the potential discriminatory practices, and the protection of the employees' health and safety. Finally, the reasoning will address the impact of AI on the fulfilment of working tasks, about the employee obligations.

2. The multilevel legal framework, between European and National provisions

Starting from European provisions, the first reference must be drawn to the mentioned AI Regulation⁵, which aims to promote a human-centred AI that respects fundamental rights.

⁴ PONTE, Flavio Vincenzo. *Intelligenza artificiale e lavoro. Organizzazione algoritmica, profili gestionali, effetti sostitutivi*, Torino: Giappichelli, 2024.

⁵ On the Regulation (EU) 2024/1689, after its approval, see: ALAIMO, Anna. *Il Regolamento sull'Intelligenza Artificiale: dalla proposta della Commissione al testo approvato dal Parlamento. Ha ancora senso il pensiero pessimistico?*, *Federalismi.it*, 2023, n. 25, 133; PERUZZI, Marco. *Intelligenza artificiale e lavoro. Uno studio su poteri datoriali e tecniche di tutela*, Torino: Giappichelli, 2023; and, after its publications, see: SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro. Appunti da un cantiere ancora aperto*, *VTDL*, 2024, 806; CIUCCIOVINO, Silvia. *Risorse umane e intelligenza artificiale alla luce del regolamento (UE) 2024/1689, tra norme legali, etica e codici di condotta*, *DRI*, 2024, 573.

The AI Regulation establishes three levels of risk (high, low, and minimal), corresponding to prohibited AI systems. All algorithmic management practices fall within the category of high-risk AI systems. The most severe obligations are imposed on AI system providers, which must implement a risk management procedure, and ensure that AI systems commercialized within the EU are transparent for users (*deployer*) and designed to allow effective human oversight (*human-in-the-loop* and *human-in-command*).

Thanks to the European Parliament, the obligations of AI deployers – including employers – have been expanded. These obligations mainly consist in: *i*) using the AI system in compliance with the provider’s instructions; *ii*) ensuring human monitoring by employing staff with appropriate skills and decision-making authority; *iii*) informing employees and their trade union representatives before the AI system is deployed or put into operation. It should also be noted that the AI Regulation grants employees subject to AI-supported decision-making processes the right to receive clear and meaningful explanations about the role of AI and the key elements of the decision.

Among European provisions, it is also necessary to include the Regulation (EU) 2016/679⁶, on the «protection of personal data», although it primarily concerns employees’ privacy, and not their safeguard in relation to AI systems. In particular, Art. 22 of the Regulation grants employees the right to object to a decision based only on an automated processing. However, there are some exceptions, when this decision is necessary to conclude (or perform) the employment contract, or when the consent of the employee is required. In these cases, employees subject to fully automated decision-making have the right to request a human intervention, to express their opinion, and to contest the decision [Art. 22, par. 3, Regulation (EU) 2016/679]. Additionally, employees must be informed of the existence of the automated decision-making process, as well as the logic applied to it, and its impact on the employment relationship, and they have the right to obtain the same information [Art. 13, par 2, let. f); Art. 14, par. 2, let. g); Art. 15, par. 1, let. h), Regulation (EU) 2016/679]⁷.

⁶ See: PERUZZI, Marco. *Intelligenza artificiale e lavoro ...*, cit.

⁷ Within Reg. (EU) 2016/679, it is also important to mention the obligation of «data protection impact

These protections are linked to the principle of transparency. Legal scholars have criticized the excessive breadth of these exceptions⁸, and the impracticality of relying on consent as a valid legal basis in the employment context⁹. More generally, Art. 22 of the Regulation appears to be ill-suited to the employment relationship, as it was not originally designed to address its specific dynamics and complexities¹⁰.

The legal framework is complemented by the Directive (EU) 2024/2831 of October 23, 2024, on improving working conditions in platform work (commonly referred to as the “Platform Work Directive”)¹¹. This Directive has significantly more implications for Labour Law, although it remains unbalanced on informational rights and transparency, rather than on substantive protections¹². Chapter III of the Directive provides for several protections for employees against algorithmic management implemented through automated decision-making or monitoring systems. In particular, there are some data processing prohibitions [e.g. those that detect an employee’s emotional or psychological state, those relating to private conversations or recorded during breaks, biometric data, and those capable of revealing discrimination factors (Art. 7)]. Moreover, an impact assessment is required, with the involvement of employees and their representatives (Art. 8).

The transparency obligations already set out in Regulation (EU) 2024/1689 and in Regulation (EU) 2016/679 are supplemented by Art. 9 of the Directive, which distinguishes them according to whether the system is decision-making or monitoring based. Moreover, it requires that information must be provided to employees and to

assessment) (Art. 35), which is necessary «where a type of processing in particular using new technologies, and taking into account the nature, scope, context and purposes of the processing, is likely to result in a high risk to the rights and freedoms of natural persons». This assessment requires the participation of employees and their representatives, which is mandatory, according to the predominant interpretation (see: CORTI, Matteo. *Intelligenza artificiale e partecipazione*, cit.).

⁸ GRAGNOLI, Enrico. *Il potere di controllo, le risorse digitali e gli algoritmi*, BELLAVISTA, Alessandro, SANTUCCI, Rosario (eds.). *Tecnologie digitali, poteri datoriali e diritti dei lavoratori*, Torino: Giappichelli, 2022, 27.

⁹ SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro*, cit.

¹⁰ GRAGNOLI, Enrico. *Il potere di controllo, le risorse digitali ...*, cit.

¹¹ ALAIMO, Anna. *Il pacchetto di misure sul lavoro nelle piattaforme: dalla proposta di direttiva al progetto di risoluzione del Parlamento europeo. Verso un incremento delle tutele?*, LJI, 2022, 8, 1, 3; GIOVANNONE, Maria. *Il lavoro tramite piattaforma nell'ordinamento europeo*, BIASI, Marco (ed.). *Diritto del lavoro e intelligenza artificiale*, Milano: Giuffrè, 2024, 500; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro*, cit.; SMORTO, Guido, DONINI, Annamaria. *L'approvazione della direttiva sul lavoro mediante piattaforme digitali*, LJI, 2024, 10, 1, 25.

¹² Indeed, it is worth remembering that the Directive (EU) 2024/2831 is intended to implement Art. 88, Reg. (EU) 2016/679.

their representatives before the system is implemented, and, on request to the national authorities, in written form. The principle of human oversight, already established in the IA Regulation, is implemented by Art. 10 and Art. 11, which provide that the most relevant decisions for the employment relationship (suspension or interruption) must be taken by a person; the employee has the right to an explanation of the automated decisions, which is functional to the rectification of those that violate his or her rights or, if this is not possible, to compensation for the suffered damage. There are also important occupational health and safety provisions, such as those requiring the necessary integration of the risk assessment document and the prohibition of the use of automated decision-making or monitoring systems that put excessive strain on employees (Art. 12).

The EU Directive 2024/2831 recalls the information and consultation rights of employees' representatives already regulated by EU Directive 2002/14, adding to them the right to call in an expert who is paid by the platform when it employs more than 250 employees in the Member State. This provision represents an important added value, considering the extremely technical nature of the matter under negotiation between the social partners¹³. Conversely, the rights established by Directive 2002/14 should also apply beyond platform work, whenever an employer introduces algorithmic management tools. There is no doubt that such decisions can significantly impact employment contracts and the organization of work [Art. 4, par. 2, lett. c]¹⁴.

Shifting the focus to domestic discipline, it must be emphasised that the Italian legislator curiously acted ahead of the EU Platform Directive and Regulation IA. Indeed, within the Legislative Decree no. 104/2022 [implementing the Directive (EU) 1152/2019], specific provisions on automated decision-making or monitoring systems have been introduced, with a new provision integrating Legislative Decree No. 152/1997 (Art. 1-*bis*)¹⁵. The protection is focused on the employer's obligation

¹³ BARBIERI, Marco. *Prime osservazioni sulla proposta di direttiva per il miglioramento delle condizioni di lavoro nel lavoro con piattaforma*, LJI, 2021, 7, 2, 3; AIMO, Mariapaola. *Trasparenza algoritmica nel lavoro su piattaforma: quali spazi per i diritti collettivi nella proposta di Direttiva in discussione?*, LDE, 2024, 2.

¹⁴ CORTI, Matteo. *Intelligenza artificiale e partecipazione ...*, cit.

¹⁵ CARINCI, Maria Teresa, GIUDICI, Silvia, PERRI, Pierluigi, *Obblighi di informazione e sistemi decisionali e di monitoraggio automatizzati (art. 1-bis "Decreto Trasparenza")*: quali forme di controllo per i poteri datoriali algoritmici, *Labor*, 2023, 1; ZILLI, Anna. *La trasparenza nel lavoro subordinato. Principi e tecniche di tutela*, Pisa: Pacini

to provide employees and their representatives (and, in the event of a request, the Ministry of Labour and the Inspectorate) with a long list of information, which is in addition to that of the Platform Directive and that of the IA Regulation. The amendment has been severely criticised by part of the doctrine, both because it has been extended to all economic sectors (and not limited to digital platforms), and because it is excessively bureaucratic and burdensome for companies and not covered by the Directive from which Legislative Decree no. 104/2022 originates¹⁶.

In this direction, the Decree-Law no. 48/2023 tried to reduce the scope of Art. 1-*bis*, but it does not seem to have achieved the expected effects. The introduction of the specification “*fully*”, referring to automated systems, has not altered the scope of the case, which continues to include automated systems that merely assist in a decision ultimately made by a person¹⁷. However, the exclusion of systems protected by industrial and commercial secrets from the application of Art. 1-*bis*, Legislative Decree no. 152/1997 has been overcome by jurisprudence. Indeed, according to judicial interpretations, the obligation to disclose information persists regardless, since the employer is not obliged to reveal the source code or the used algorithm (which remains protected by the mentioned secrets), but only to provide information to demonstrate the mechanisms underlying the decision-making process¹⁸. Some scholars have criticized the weakness of the rights granted to employees’ representatives, arguing that they fall short even of the basic right to information established by the Platform Work Directive¹⁹.

Giuridica, 2022; DAGNINO, Emanuele. *Modifiche agli obblighi informativi nel caso di utilizzo di sistemi decisionali o di monitoraggio automatizzati* (art. 26, comma 2, d.l. n. 48/2023, conv. in l. n. 85/2023), DAGNINO, Emanuele, GAROFALO, Carmela, PICCO, Gianluca, RAUSEI, Pierluigi (eds.). *Commentario al d.l. 4 maggio 2023, n. 48 c.d. “decreto lavoro”, convertito con modificazioni in l. 3 luglio 2023, n. 85*, ADAPT University Press, 2023, 69; DONINI, Annamaria. *Informazione sui sistemi decisionali e di monitoraggio automatizzati: poteri datoriali e assetti organizzativi*, DLM, 2023, 85; DAGNINO, Emanuele. *Il diritto interno: i sistemi decisionali e di monitoraggio (integralmente) automatizzati tra trasparenza e coinvolgimento*, BIASI, Marco (eds.). *Diritto del lavoro e intelligenza artificiale*, cit., 147; BIASI, Marco. *Trasparenza e sistemi decisionali o di monitoraggio (integralmente) automatizzati*, GI, 2024, 1725.

¹⁶ FAIOLI, Michele. *Trasparenza e monitoraggio digitale. Perché abbiamo spesso di capire la norma sociale europea*, *Federalismi.it*, 2022, 25, 104.

¹⁷ DAGNINO, Emanuele. *Modifiche agli obblighi informativi ...*, cit.; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro ...*, cit.

¹⁸ Trib. Torino, 12 marzo 2024, n. 231.

¹⁹ CORTI, Matteo. *Intelligenza artificiale e partecipazione ...*, cit.; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro ...*, cit.

Finally, it is worth highlighting the recent Draft Delegation Law no. 1146 on “*Artificial Intelligence*”²⁰, which, concerning Labour-related provisions (Articles 10–12), explicitly sets out a dual objective «*to harness the opportunities offered by digital technologies for social benefit*» and to «*establish rights-based risk management solutions that protect workers from unintended and potentially harmful consequences*». In this way, the purpose is to discipline the use of AI in the workplace, defining the objectives pursued through its adoption (improving working conditions, safeguarding employees’ physical and mental well-being, and enhancing both individual performance and overall productivity), while simultaneously ensuring respect for human dignity, data privacy, and fundamental rights (Art. 10). These objectives underscore a human-centred approach, aligning with supranational legal standards.

To mitigate the risks associated with AI integration in workplaces while maximizing its benefits, the Draft Delegation Law mandates the institution of an Observatory on the Adoption of Artificial Intelligence in the Workplace, established within the Ministry of Labour and Social Policies (Art. 11). Furthermore, special attention is given to intellectual professions, where the use of AI is restricted to instrumental and support functions. Additionally, any deployment of such systems must be disclosed to clients, reinforcing the human-centred perspective that underpins the legislation (Art. 12).

3. The impact of AI on employers’ side: algorithmic management and health and safety obligation

To focus on the AI impact on the two parties of the employment relationship, it is first necessary to stress that the described legal framework has a rather limited effect on them. This is mainly since the existing protections revolve around the principles of transparency and informational self-determination, to which the AI Regulation and the Platform Work Directive add the requirement of human oversight.

The Platform Work Directive imposes additional substantive constraints on employers’ directive and control powers, such as the obligation of employees to

²⁰ See: BIASI, Marco. *Il lavoro nel disegno di legge governativo in materia di intelligenza artificiale: principi, regole, parole, silenzi*, DRI, 2024, 642.

review certain decisions, the prohibition of automated decision-making and monitoring systems that could harm employees' health, and the ban on processing certain categories of personal data. Therefore, it is essential to delve into the legal positions of the parties of the employment relationship, to weigh up the use of AI within the current discipline of the National legal system.

Starting from the algorithmic management²¹, the Labour Law Scholars has identified five areas of employment management using algorithms or AI systems: *i)* the assignment of working tasks, *ii)* the optimization of processes; *iii)* the human resources management, including promotions, transfers, changes in job duties, disciplinary measures, and even dismissals; *iv)* the planning of production activities, including leave requests, vacation schedules, and work shifts; *v)* the monitoring of workforce²².

The first critical issue lies in the risk of discriminatory biases embedded within deterministic algorithms and AI systems, that may stem from flaws in algorithm design and training data, or that may emerge later as AI systems continue to learn and identify correlations within the processed data²³. Since machine learning relies on statistical predictions, there is a significant risk that it will reproduce existing discriminatory patterns present in the data it processes. Jurisprudence has already dealt with a few emblematic cases, such as the Deliveroo deterministic algorithm case, where riders were excluded from the most desirable slots based on two criteria (late cancellations and absences), without considering the underlying reasons (“*blind algorithm*”). The Court found that this system constituted discrimination, as it had the potential to unfairly penalize workers, including for trade union-related reasons²⁴.

²¹ On this topic, see: MAIO, Valerio. *Il diritto del lavoro e le nuove sfide della rivoluzione robotica*, ADL, 2018, 1414; DAGNINO, Emanuele. *Dalla fisica all'algoritmo ...*, cit.; GAUDIO, Giovanni. Algorithmic management, *poteri datoriali e oneri della prova: alla ricerca della verità materiale che si cela dietro l'algoritmo*, LLI, 2020, 6, 2, 22; ZAPPALÀ, Loredana. *Informatizzazione dei processi decisionali e diritto del lavoro: algoritmi, poteri datoriali e responsabilità del prestatore nell'era dell'intelligenza artificiale*, WP CSDLE “Massimo D’Antona”.it, 2021, 446; ZAPPALÀ, Loredana. *Management algoritmico*, BORELLI, Silvia et al. (eds.). *Lavoro e tecnologie. Dizionario del diritto del lavoro che cambia*, Torino: Giappichelli, 2022, 150; BANO, Fabrizio. *Algoritmi al lavoro. Riflessioni sul management algoritmico*, LD, 2024, 133; PONTE, Flavio Vincenzo. *Intelligenza artificiale e lavoro*, cit.; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro*, cit.

²² SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro*, cit.

²³ PERUZZI, Marco. *La discriminazione algoritmica*, Equal, 2024, 1, 7.

²⁴ See: Trib. Bologna, 31 dicembre 2020, on which: BIASI, Marco. *L'algoritmo di Deliveroo sotto la lente del diritto antidiscriminatorio... e del relativo apparato rimediario*, ADL, 2021, 780; GAUDIO, Giovanni. *La Cgil fa breccia nel cuore dell'algoritmo di Deliveroo: è discriminatorio (nt. a Tribunale di Bologna 31/12/2020)*, RIDL, 2021, 188; PERUZZI, Marco. *Il diritto antidiscriminatorio al test di intelligenza artificiale*, LLI, 2021, 7, 1, 50. More

Therefore, the risks of discrimination are substantial in the employment relationship management phase, but they are even more likely in the recruitment one. However, Non-Discrimination Law is a fundamental “antidote”, especially about the burden of proof²⁵. Indeed, if the employee offers elements, even if inferred from statistical data, from which discrimination can be presumed (Art. 28, par. 4, Legislative Decree no. 150/2011), there is provided for a partial reversal of the burden of proof, according to which employers, who apply AI systems, must prove that they have used non-discriminatory criteria.

The potential opacity of predictive algorithms (*black box*), typical of deep learning systems and neural networks, will ultimately burden the employer. On the other hand, the presumption that systems are impartial and infallible works against the worker. Nevertheless, both established and emerging transparency rights can play a pivotal role in increasing employees’ awareness of the risks inherent in algorithmic management.

Even when an AI-driven decision is not overtly discriminatory, it may be irrational, illogical, or even arbitrary. The mere presence of a statistically significant correlation between the two factors does not establish a causal relationship between them²⁶.

In these cases, the legal constraints on an illogical or arbitrary exercise of the employer’s directive power through AI are the same as those that apply to the employer acting independently of AI. The focus is on the general principles of good faith and fairness (Articles 1175 and 1375 of the Italian Civil Code), alongside fundamental legal rules (such as objective and subjective justified reasons and just cause for dismissal). In the state of technological development, these concepts remain beyond AI’s autonomous application²⁷.

recently, see: v. Trib. Palermo, 17 novembre 2023, on which: NUZZO, Valeria. *La intrinseca natura discriminatoria dei modelli organizzativi basati sui punteggi di eccellenza per i più affidabili e produttivi*, RIDL, 2023, 751.

²⁵ Within the Italian legal system, see at least: Art. 15, Law no. 300/1970; Legislative Decree no. 198/2006; Legislative Decree no. 215-216/2003.

²⁶ See the case of a US company that used an AI system to recruit best engineers: the system suggested they recruit candidates who were avid manga readers, as it had found a statistically significant correlation between reading manga and successful carriers (on which LO FARO, Antonio. *Algorithmic Decision Making e gestione dei rapporti di lavoro: cosa abbiamo imparato dalle piattaforme*, *Federalismi.it*, 2022, 25, 189).

²⁷ ZAPPALÀ, Loredana. *Informatizzazione dei processi decisionali*, cit.; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro*, cit.

The algorithmic decisions concerning employment relationships are subject to all legal constraints established by the legal system (including those governing job reassignment, relocation, working hours, and leave). This applies regardless of whether the decision was made autonomously by the AI system, or when it is merely supported (or recommended) by it, or even when it is taken independently by the employer.

In the European and National legal frameworks, the principle *cuius commoda eius et incommode* is applied: AI that the employers can benefit from, and managerial decisions (whether made independently by the employer or entirely delegated to an AI system) remain legally attributable to the employer. This carries significant implications in terms of employer liability and the potential illegitimacy of managerial decisions or employment-related acts²⁸. Today, this principle is further reinforced by the AI Regulation, which is built upon a human-centred approach (also reflected in the Italian Draft Delegation Law no. 1146), and any prospect for the legal subjectivity of AI is postponed to an uncertain future.

The employer's control power is different because the most effective AI-driven management systems combine employees' activity monitoring with automated decision-making processes based on the very data collected through such monitoring. Some scholars have identified this shift as a genetic transformation of an employer's directive power, arguing that it is increasingly turning into a «directive control power»²⁹.

In this context, beyond the protections offered by Regulation (EU) 2016/679 (particularly regarding data minimization and purpose limitation), it is also necessary to recall Art. 4 of Law No. 300/1970. Indeed, employees seem to benefit not only from the limited informational and privacy safeguards provided in paragraph 3, but also from the stronger collective protections provided in paragraph 1, which grant their representatives a rare right to co-decision, seldom seen in our legal system's participatory practices³⁰. This interpretation is supported by the fact that

²⁸ CIUCCIOVINO, Silvia. *La disciplina nazionale sulla utilizzazione della intelligenza artificiale nel rapporto di lavoro*, LDE, 1, 2024; CORTI, Matteo. *Intelligenza artificiale e partecipazione*, cit.; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro*, cit.

²⁹ TEBANO, Laura. *Lavoro, potere direttivo e trasformazioni organizzative*, Napoli: Editoriale Scientifica, 2020.

³⁰ MAIO, Valerio. *Il diritto del lavoro e le nuove sfide ...*, cit., 1414; CORTI, Matteo. *Intelligenza artificiale e*

wearable devices and AI-controlled handheld terminals used for algorithmic management do not fall under the category of simple work tools excluded from co-decision procedures under paragraph 2. The purpose of this exclusion was to exempt basic instruments from union oversight, not to shield highly sophisticated technologies that significantly impact worker surveillance and control.

Moreover, Scholars have promptly highlighted the risks of psycho-physical stress associated with the intensive use of algorithmic management. Indeed, employees are constantly monitored, evaluated, and pressured to compete with colleagues to achieve increasingly ambitious targets, creating a vicious cycle in which they are compelled to participate (*nudging*)³¹. The most striking examples do not come solely from platform workers (such as delivery riders who are tracked at every moment of their working time), but also from more traditional sectors, such as logistics. For example, in Amazon warehouses in the United States, continuous evaluation is implemented through *gamification* mechanisms, yet its ultimate consequence is far from trivial, as it can lead to dismissal³²).

Nevertheless, employee protections already exist within the Italian legal system. The employer's obligation to ensure workplace health and safety (Article 2087 of the Italian Civil Code, further detailed by Legislative Decree no. 81/2008) requires that these risks be specifically assessed, eliminated, or at least mitigated. As previously noted, for platform workers, the European Directive expressly prohibits algorithmic management systems that expose employees to excessive pressure.

The integration of AI into industrial contexts presents both new risks and new opportunities. A key issue concerns intelligent robots (*cobots*), which can interact with employees, alleviate physically demanding tasks, and operate in unhealthy environments³³. While these technologies undoubtedly offer significant benefits for employees' health, they also introduce new safety risks stemming from potential

partecipazione, cit.; SARTORI, Alessandra. *Il controllo tecnologico sui lavoratori. La nuova disciplina italiana tra vincoli sovranazionali e modelli comparati*, Torino, 2020; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro* ..., cit.

³¹ BANO, Fabrizio. *Algoritmi al lavoro*..., cit.; SARTORI, Alessandra. *Intelligenza artificiale e gestione del rapporto di lavoro* ..., cit.

³² ZAPPALÀ, Loredana *Informatizzazione dei processi decisionali* ..., cit.

³³ CAIROLI, Stefano. *Intelligenza artificiale e sicurezza sul lavoro: uno sguardo oltre la siepe*, *DSL*, 2024, 2, 26; PERUZZI, Marco. *Sistemi automatizzati e tutela della salute e sicurezza sul lavoro*, *DSL*, 2024, 2, 78.

malfunctions. The employer's duty to ensure workplace safety extends to all industrial equipment, including intelligent systems, meaning that liability would still rest with the employer, without prejudice to potential recourse against the manufacturer. This includes events caused by an AI-driven robot's incorrect perception of its environment, such as a misunderstood command, an undetected presence, an improperly assessed danger, or faulty human-robot interaction³⁴.

Additionally, the employer's training obligations become even more stringent, requiring an enhanced focus on educating workers about the risks associated with intelligent machines and the precautions to take in the event of a malfunction³⁵. It is also reasonable to assume that workplace injury insurance provided by the Italian Institute for Industrial Accident Insurance would cover accidents caused by AI-operated robots, as these devices do not rely solely on human force³⁶. The only exclusions would likely concern intentional or self-harming behaviour by workers, such as deliberately tampering with an AI-equipped machine or intentionally misleading the robot's cognitive and decision-making processes³⁷.

4. The impact of AI on employees' side: the fulfilment of working tasks

Finally, it is possible to address the impact of AI on the fulfilment of working tasks. This issue can be approached by moving from algorithmic management.

Indeed, from the managers' perspective³⁸, an AI system represents a tool through which they can fulfil their working tasks. The most critical issue does not arise in cases where the AI system is used inappropriately, in which the managers' failure to fulfil their contractual obligations can be readily demonstrated (Art. 2104, par. 1, Italian Civil Code). Conversely, the more complex scenario occurs when the AI system generates an erroneous prediction despite having been configured with

³⁴ MAIO, Valerio. *Il diritto del lavoro e le nuove sfide* ..., cit., 1432.

³⁵ FIATA, Emanuela. *Robotica e lavoro*, BIASI, Marco (ed.). *Diritto del lavoro e intelligenza* ..., cit., 623.

³⁶ MAIO, Valerio. *Il diritto del lavoro e le nuove sfide* ..., cit., 1429-1430.

³⁷ MAIO, Valerio. *Il diritto del lavoro e le nuove sfide* ..., cit., 1432.

³⁸ In this direction, see: ZAPPALÀ, Loredana. *Informaticizzazione dei processi decisionali* ..., cit.

correct parameters by the manager, who then relies on it, ultimately leading to unsatisfactory managerial outcomes.

The manager's contractual liability, in terms of failure to perform his contractual obligations, depends on multiple factors, which must be assessed in light of the principles of professional diligence established by Art. 2104, par. 1, Italian Civil Code, as well as the specific terms of the employment contract. Among other considerations, it is necessary to evaluate whether the manager had: *i*) the discretion to use the AI system; *ii*) the ability to choose the specific AI system to be employed; *iii*) the possibility of departing from the choice made by the system. In addition, it is crucial to assess whether the system: *iv*) had a high degree of reliability in making predictions.

The criteria set out in Article 2104 of the Italian Civil Code also constitute the benchmark for assessing the proper performance of all other employees, even though they are subject to a stricter subordination constraint compared to managers. However, in evaluating the conduct of employees who rely on an AI system, it is required to consider the degree of discretion granted to them in using the system, given their duty to comply with the employer's instructions in executing their working tasks. This aspect emerges from the content of the employment contract, from the company's regulations or policies, from the AI system's or software's instructions, and the employer's directives. In any case, the rights and the obligations established by Legislative Decree no. 81/2008 apply: these include the right to withdraw from the workplace when faced with a serious, immediate, and unavoidable danger (Art. 44, Legislative Decree no. 81/2008), and the duty to immediately report any dangerous situation to the employer or to the manager, as well as to take direct action, in cases of urgency and within the scope of one's competence, to eliminate or mitigate the danger [Art. 20, par. 2, let. e), Legislative Decree no. 81/2008].

In the context of the *smart factory* within *Industry 4.0*, where the production process continuously improves through self-correcting mechanisms governed by AI systems, a constant dialogue between employees and AI systems is required (rather than the mere acceptance of AI-generated predictions by employees). It has been shown that the best performance is achieved by combining AI data-processing capabilities with employees' practical experience and soft skills, such as intuition,

empathy, and the ability to react swiftly to unexpected scenarios (qualities characteristic of the so-called *proactive worker*³⁹).

However, these production models expand the scope of contractual obligations, demanding a level of personal engagement and a proactive (even creative) approach, that differs significantly from the expectations placed on workers in traditional Taylorist and Fordist factories⁴⁰. This raises a tangible risk that job roles may become increasingly blurred, complicating the assessment of proper working tasks. Moreover, this evolution appears to be reinforced by collective agreements, which have historically played a pioneering role in shaping labour relations within our Industrial Relations system⁴¹.

Concerning the issue of the employees' proper fulfilment of their working tasks, it has also been pointed out that the notion of average professional diligence (normally used by judges to identify the *quantum debendi* of the employee) has also become more uncertain⁴². Indeed, production models that incorporate AI systems require a highly individualized form of collaboration that is difficult to standardize⁴³. Moreover, in the *smart factory*, overall performance depends on the interaction of all production factors, making it nearly impossible to attribute responsibility for a negative outcome to a single employee⁴⁴. In light of these considerations, *de iure condito*, the application of Article 2104 of the Italian Civil Code remains essential: the *smart factory* employees are expected to contribute effectively within the corporate environment, demonstrating diligence in accordance with the average professional standard and aligning their performance with the company's interests. This obligation entails a conscious interaction with AI systems, within the limits of the employees'

³⁹ ZAPPALÀ, Loredana. *Informatizzazione dei processi decisionali ...*, cit., 27-28.

⁴⁰ FERLUGA, Loredana. *Nuove tecnologie e professionalità*, BELLAVISTA, Alessandro, SANTUCCI, Rosario (eds.). *Tecnologie digitali, poteri datoriali e diritti dei lavoratori* cit., 166.

⁴¹ In this regard, see the reform of grading inaugurated by the 2016 metalmechanics national collective agreement, with the shift from tasks to roles [on which: ZILIO GRANDI, Gaetano (ed.). *Commentario al CCNL Metalmeccanici 5 febbraio 2021*, Torino, 2021; BARBIERI, Marco. *Innovazioni tecnologico-organizzative e inquadramenti nei rinnovi dei CCNL delle imprese private*, LJI, 9, 1, 2023, 3].

⁴² TULLINI, Patrizia. *La digitalizzazione del lavoro, la produzione intelligente e il controllo tecnologico nell'impresa*, TULLINI, Patrizia (ed.). *Web e lavoro. Profili evolutivi e di tutela*, Torino, 2017, 3; ZAPPALÀ, Loredana. *Informatizzazione dei processi decisionali ...*, cit.

⁴³ In this direction, see: ZAPPALÀ, Loredana. *Informatizzazione dei processi decisionali ...*, cit.

⁴⁴ TULLINI, Patrizia. *La digitalizzazione del lavoro ...*, cit., 7-8.

skills and knowledge, as well as the degree of autonomy granted to them in relation to AI and, more broadly, in the execution of their working tasks.

In this scenario, the crucial issue of training comes to the forefront⁴⁵. If an employee has not been adequately trained to interact properly with an AI system, any failure to fulfil contractual obligation cannot be attributed to him. This results from the general principle of cooperation in performance, established by Article 1175 of the Italian Civil Code, as well as from the prevailing interpretation of Article 2103, par. 3. However, training constitutes both a right and a duty: employees who fail to engage in training may be considered in breach of their contractual obligations. The *Industry 4.0* production models, where AI systems play a central role and necessitate continuous skill development, invite further reflection on the employer's obligation to provide ongoing training as an inherent element (*naturale negotii*) of the employment contract⁴⁶.

In conclusion, it is undeniable that AI is reshaping the balance between technical skills, ethical behaviour, and the ability to adapt to an evolving labour market. This shift calls for a reconsideration of the relationship between individual worker protections, the organizational needs of businesses (or public administrations), and broader societal interests. It is a new landscape in which worker professionalism is no longer defined solely by technical expertise but rather as an integrated quality that fosters autonomy and dignity in an era of digital transformation.

⁴⁵ FERLUGA, Loredana. *Nuove tecnologie e professionalità ...*, cit.

⁴⁶ NAPOLI, Mario. *Disciplina del mercato del lavoro ed esigenze formative*, RGL, 1997, 263; ALESSI, Cristina. *Professionalità e contratto di lavoro*, Milano: Giuffrè, 2004; CORTI, Matteo. *L'edificazione del sistema ...*, cit.