
**FUTUROLOGY
OF LABOUR LAW**

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FOREWORD

The future has always been fascinating. It brings tension, anticipation, joy, but also fear and worries. Maybe it is because no one knows exactly what the future brings. Neither the personal nor societal future. It is difficult to predict the future, but it is not impossible. There are rules, cause-effect relationships, socio-economic equations that allow us to anticipate future development, and most importantly, prepare for it. Yes, there are changes that come out of the blue – deus ex machine or come in as a black swan. However, plenty changes in future are based on the present, on what we see around us.

We are witnessing a technological revolution. There is no doubt that the labour market will change. We can already see it, for example when we enter a grocery store and instead of five cashiers there are self-service cash desks with one auxiliary employee. Autonomous cars, which are already in trial operation in some cities as taxi services, will bring further reduction in the number of jobs. Many other changes in work-life cannot even be predicted exactly, but it is reasonable to expect them to come.

This monograph is built on estimates, visions and expectations. We are trying to outline the pitfalls of labour law today and tomorrow, formulate challenges for labour legislation, and finally, create visions for the future. Although sometimes we are expressing excited thoughts, they are always anchored in the foundations of current scientific knowledge.

Where does the word futurology come from? Currently, several similar terms are used, such as futurology, futurism, futuristic studies, to which authors assign separate content and definition. These are not new terms at all. For example, the term ‘futurism’ has been used since 1842 as an expression of Christian eschatology, in which it was predicted that the incoming apocalypse would lead to the transformation of society.¹ Futurology has several definitions, it is a science (or a whole set of separate disciplines), which aim is to provide relevant social, economic and social predictions for future development.² Futurology as a science employs several methods of exploration, for example, extrapolation of trends, historical analogy, game theory, but it is

¹ BUTLER, A. M.: Futurology. In: *The Oxford Handbook of Science Fiction*. Oxford: Oxford University Press, 2014, p. 620.

² Compare broader explanations for example PULVER, S., VAN DEVEER, S.: Futurology and Futurizing: A Research Agenda on the Practice and Politics of Global Environmental Scenarios. In: *Amsterdam Conference on the Human Dimensions of Global Environmen-*

intuitive method, based on one's own estimation and intuitions of future development, that is the most sympathetic to the authors.³

How often are futurologists wrong? Quite often, although accurate statistics cannot be found due to the amount and incoherence of predictions. Indeed, we can show at least one example. Francis Fukuyama became known to the wider public only after his thesis about the end of history was shown to be completely wrong. The number of mistakes is encouraging for the new futurologists (in labour law as well). Honest mistakes are acceptable.

And since futurology is also a mix of different scientific disciplines and branches, why not futurology of labour law. Finally, we have to say that the title is not as original as it seemed to be at the beginning. The term 'legal futurology' was used back in 1980.⁴

The monograph you are holding in your hands is a result of several years of scientific and publishing activities of both authors. It is a cooperation between the Slovak and Italian academic field, which is why the content of the monograph is mostly focused on examining problems inherent in the entire labour law. In the end, those ideas are transformed into a more specific challenge for labour law in Slovakia.

We believe that you will enjoy this unusual mix of Italian and Slovak cuisine.

The monograph is a result of the research project VEGA No. 1/0790/20 Employee Protection in the Context of Industrial Revolution 5.0 — Starting Points, Possibilities, Risks.

Košice 19. 12. 2022

authors

tal Change 'Earth Systems Governance: Theories and Strategies for Sustainability' Amsterdam, 2007.

³ PUGLISI, M.: The Study of the Futures: An Overview of Futures Studies Methodologies. In: *Interdependency between Agriculture and Urbanization: Conflicts on Sustainable Use of Soil and Water*, available online: ciheam.org.

⁴ FUNK, A. D.: Legal Futurology: The Field and Its Literature. In: *Law Library Journal*, 1980, Vol. 73, No. 3, pp. 625–633.

1. REFLECTION OF THE SOCIAL REVOLUTION 5.0 IN LABOUR LAW

We all feel, consciously or subconsciously, that society has been evolving since its inception, however, the development of society associated with technological progress constantly accelerates this process. Technologies bring decisive economic and social changes. From its first stage, which was characterized by mechanization (1st Industrial Revolution), through the intensive use of electricity (2nd Industrial Revolution), which allowed the creation of an industry with large-scale digitization (3rd Industrial Revolution), we suddenly found ourselves in the space of production of intelligent products and production processes (4th Industrial Revolution). With the number 4.0, the Industrial Revolution is not slowing down, on the contrary, it is gaining momentum.

Society is in a time of rapid and significant social and economic changes. Large-scale digitization is already everyday reality that accompanies both the lives of individuals and society as a whole. Technological progress has spawned artificial intelligence, which marks the completion of the 4th and the onset of the 5th stage of the Industrial Revolution.⁵ After five stages of the Industrial Revolution, society is probably accustomed to the fact that technological progress determines the functioning of economic processes or social relations. The surprise was caused only by the fact that progress is becoming faster and more intense.

All stages of the Industrial Revolution have had an impact on all spheres of economic and social functioning and significantly bent the labour market on both qualitative and quantitative scale. It can be assumed that the upcoming fifth milestone of the Industrial Revolution will manifest itself on the labour market in changes in the overall number of jobs, their nature and structure.

The idea that, not only technological progress and prosperity, but also natural disasters, natural calamities or even contagious diseases can be car-

⁵ The term Industrial Revolution 5.0 has been conceived in legal writing by several authors. See, for example, LASI, H. et al.: *Industrie 4.0*. In: *Business & Information Systems Engineering*, 2014, Vol. 6, No. 4, p. 239; BRETTEL, M. et al.: *How Virtualization, Decentralization and Network Building Change the Manufacturing Landscape: An Industry 4.0 Perspective*. In *International Journal of Information and Communication Engineering*, 2014, Vol. 8, No. 1, p. 38.

riers of significant social changes, was unknown to society. However, the COVID-19 pandemic has brought a new social reality. Society has understood that it cannot foresee the action of natural forces and control physical, chemical and biological processes.

The dynamic development of society and economy has an impact also on the working environment and the ways and forms of work performance. The standard work performance, as we know it today, is stepping back and is being replaced by new, distance and atypical forms of employment. The development tendencies in the labour market have been characterised by two trends in recent decades. The first consists of weakening of the characteristics of the standard model of employment. The second is based on the creation of forms of work that differ from the standard, increase in importance, diversity and often occupy a grey area between dependent work and self-employment.⁶

Another phenomenon enters the developmental milestones and it only further emphasizes the unanswered questions. The current situation in connection with the COVID-19 pandemic places the world in front of number of new challenges, many of which relate precisely to the working environment. We are not talking only about measures aimed at the immediate protection of people's health, but also about the significant changes that the work performance and the entire economy must go through. After all, society must survive the pandemic not only physically, but also economically. This crisis has not only brought short-term or temporary restrictive measures, but also irreversible social changes that have a significant impact on the way we work. COVID-19 imposes the mandatory practice of new forms of employment, regardless of their prior acceptance or rejection. The working world further emphasizes the pace and scale of the technological transformation of recent years. The new patterns, encouraged by technology that resonates in global society, paint a picture of an employment context completely different from the old one. Society enters the 'new normal' and adapts to new challenges. The question of how to deal with these changes is becoming one of the predominant research questions of labour research worldwide.⁷ We are facing a test of adaptability and durability in dealing with an external shock. Industry 5.0 also provides an opportunity to rethink our perception of new forms

⁶ SCHOUKENS, P., BARRIO, A.: The Changing Concept of Work. When Does Typical Work Become Atypical. In: *European Labour Law Journal*, 2017, Vol. 8, No. 4, p. 306.

⁷ LORD, P.: Changing World, Changing Work. In: *Contemporary Social Science*, 2020, Vol. 15, No. 4, p. 410.

of employment and their long-term viability. It also represents an opportunity to critically think about the conventional use of space and its appearance, which is based on industrial and functional thinking.⁸

Fundamental changes in the labour market towards new forms of employment are not the result of the pandemic, which is only a certain catalyst for developments that were already set up earlier. The concept of new forms of employment is not a complete novelty, but views on this concept are changing and filling it with new content. According to the latest global literature⁹ the concept of new ways of employment covers five aspects:

- work independent of time and place, i.e. performance of work outside the physical environment of the organization and at different times,
- autonomy of work management, i.e. employees have more flexibility in defining the way and pace of fulfilling their tasks,
- access to information on the functioning of the organisation, i.e. employees have better access to information necessary for the performance of their duties and the ability to communicate with colleagues and managers,
- flexibility of working relationships, i.e. freedom for employees to reconcile work and personal life,
- a freely accessible workplace, i.e. allowing employees to visit workplaces and perform their duties at different times.

More specifically, the European Foundation for the Improvement of Living and Working Conditions has produced a research report on the identification and characterisation of new forms of employment.¹⁰ On the basis of research across the Member States of the European Union, it has identified and characterised the following new forms of employment:

- employee sharing,
- job sharing,
- interim management,
- casual work,
- work carried out by means of information and communication technologies (ICT-based mobile work),

⁸ HU, R.: COVID-19, Smart Work, and Collaborative Space: A Crisis Opportunity Perspective. In: *Journal of Urban Management*, 2020, Vol. 9, No. 3, p. 277.

⁹ DUQUE, L. et al.: New Ways of Working and the Physical Environment to Improve Employee Engagement. In: *Sustainability*, 2020, Vol. 12, No. 17, p. 3.

¹⁰ EUROFOUND: *New Forms of Employment*. Luxembourg: Publications Office of the European Union, 2015, p. 7.

- voucher-based work,
- portfolio work,
- crowd employment,
- collaborative employment.

The advantages, disadvantages, and requirements of performing work by one of the new forms of employment are diversified, since each of the listed forms has a different character and is suitable for a different field of work. *Employee sharing* is a form of work in which an employee is jointly hired by several employers. Thus, an employee, when performing work in this form, rotates between several employers. When performing work in the form of *job sharing*, an employer employs two or more employees who perform specific work tasks together. *Voucher-based work* has a specific legal basis for its performance. The relationship between an employer and an employee is not established by a standard employment contract, but by a so-called voucher. An employee performing work in this way has a position somewhere on the line between an employee and a self-employed person. Work performed in the form of *interim management* consists in the employment of a highly qualified employee to perform a specific work task. It is therefore a form close to fixed-term contract. *Casual work* is performed by an employee for an employer who assigns work to the employee according to their needs, and therefore the employer is not obliged to constantly assign work to the employee. Today, *work performed through information and communication technologies* is perceived more widely than telework, which is covered by the legislation, in many cases an employee can perform work from any place at his discretion and needs. *Crowd employment* is a suitable form of employment especially for independent professions, as it is characterised by freedom to perform work. The work performance is carried out through online platforms, where the task manager divides the task into subtasks that are performed by individual workers. Similarly, during the performance of *portfolio work*, most often, a self-employed person works for a large group of employers and fulfills partial tasks for them. *Collaborative employment* is seen as a new form of cooperation between the self-employed, independent professions and small or medium-sized companies.

A separate problem in this area is the question of the legal status of natural persons performing so-called gig work. Theoretical views on gig work are not unified. Some authors include under this work all forms of independent

contracting.¹¹ For others the decisive sign is the presence of an intermediary in the form of a digital platform. Digital platforms are a new way of organising work and offering services, which facilitate business interactions.¹² Within these platforms, individuals often work in relationships of subordination, but work tasks and instructions are imposed by an algorithm that is part of a digital platform (application – the so-called app-work). It is an algorithmic control that can be defined as a system of control in which learning algorithms are responsible for making and executing decisions affecting the performance of work.¹³

Naturally, this list is not complete and by no means can the indicated method of classification be considered the only possible one. However, it is common for most of these forms to contribute to innovation in the work environment and make it more attractive both for employers and for a wide range of potential employees.

The European Foundation for the Improvement of Living and Working Conditions also focused on the use of these new forms across the Member States of the European Union as part of the research report. The survey showed that in most Member States several of the above-mentioned new forms of employment are used. Most commonly used are employee sharing, work performed through information and communication technologies, collaborative employment, crowd employment, casual work and portfolio work.¹⁴ However, other new forms of employment also have a significant place in the labour market.

The collaborative economy based on online platforms, which connects service providers with customers¹⁵ is developing at an unprecedented pace. According to a Eurobarometer survey, around 17% of European consumers have used collaborative economy services, while 52% were aware of the existence of such services. The largest sector of the collaborative economy

¹¹ BERNHARDT, A., THOMASON, S.: *What Do We Know about Gig Work in California? An Analysis of Independent Contracting*. Berkeley: UC Berkeley Labour Centre, 2017, p. 6.

¹² GRAMANO, E.: Digitalisation and Work: Challenges from the Platform Economy. In: *Contemporary Social Science*, 2020, Vol. 15, No. 4, pp. 476–488.

¹³ DUGGAN, J. et al.: Algorithmic Management and App-Work in the Gig Economy. A Research Agenda for Employment Relations and HRM. In: *Human Resource Management Journal*, 2020, Vol. 30, No. 1, p. 119.

¹⁴ EUROFOUND: *New Forms of Employment*. Luxembourg: Publications Office of the European Union, 2015, pp. 8–9.

¹⁵ The most used platforms are Airbnb, Blablacar, Deliveroo and Uber, which have become marketing brands of worldwide importance.

in terms of trade volume is accommodation provided by individuals, but in terms of revenue mutual transport is in the first place.¹⁶ The European Union does not impede the collaborative economy, considering the development of competitiveness, on the contrary, rather it supports its development,¹⁷ but at the same time is considering creating legislative rules for its application. In general, legislation always tries to catch up with technological progress and many times seeks to legally correct and regulate what actually works and develops, but with potential social risks for the wider society. The collaborative economy certainly creates such social risks. In the early days of the development of online sharing platforms, service providers were completely outside of the range of labour legislation (after all, in many cases it was a purely grey economy outside of commercial or tax legal duties), but requirements for regulation gradually occur. The International Labour Organisation is active and requires at least a minimum level of social protection for this type of providers.¹⁸

Thus, one can only agree with the opinion that the state, in order to protect all entities actively participating in the development of the collaborative economy, should set rules for its functioning and development in the future. After all, in several EU Member States, the collaborative economy has already been given a definable legal framework, which ensures, on the one hand, the development of services, improvement or diversification of the market and, on the other hand, protects not only the providers of these services, but also the users of the services provided.¹⁹

The initial, one could even say experimental, court decisions concerned the company (online platform) Uber, which provides transport services. Despite Uber's efforts to convince that its activities are purely intermediary and that individuals are the real providers,²⁰ the Court of Justice of the European

¹⁶ EUROPEAN COMMISSION: *European Commission Report No. 438 Use of Collaborative Platforms*, 2016.

¹⁷ EUROPEAN COMMISSION: *Commission Recommendation EU 2017/761 of 26 April 2017 on the European Pillar of Social Rights*, 2017, available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017H0761>

¹⁸ In this context, the ILO uses the term 'disguised employment', which, in its view, must be covered by labour legislation. See more details DE STEFANO, V.: *The Rise of the Just-in-Time Workforce: On-Demand Work, Crowdwork, and Labor Protection in the Gig-Economy*. In: *Conditions of Work and Employment Series*, No. 71, ILO, Geneva.

¹⁹ See more details BARANCOVÁ, H.: *Pracovné právo v digitálnej dobe a rozvoj kolaboratívnej ekonomiky*. In: *Justičná revue*, 2017, Vol. 69, No. 10, pp. 1138–1154.

²⁰ Uber described itself as a community information service.

Union has taken the opposite view and brought the company (or platform) under standard legal regulation.²¹

Promoting the collaborative economy does not mean absolute freedom and limitless opportunities for implementation and on the other hand, defining legislative rules does not automatically mean rejecting services as a whole. Legal protection must be aimed both at the consumers who use the services covered by online platforms and at the providers of these services, who often operate on the border of business and dependent work.

A challenging issue that arises from the performance of some new forms of employment is the question of safety and health protection of employees at work. New forms of work, such as those resulting from digitalisation and work organisation, may challenge traditional forms of employment and have an impact on decent work and fair working conditions, and on the occupational safety and health.²² The area of health and safety at work is also considered a priority by the Council of the EU, which states that particular attention should, however, be paid to the impact of these changes in work organisation on the overall well-being of workers, including the quality of their work, as well as their physical and mental health. New forms of work should not reduce or compromise employer's responsibility to ensure the safety and health of workers in all aspects related to their work.²³ In this context, the Council of the EU also highlights the risks of new forms of employment, including, in particular, blurring the boundaries between work and personal life, potential isolation from the work community and desocialisation, the risk of stress and cognitive work overload, etc.

The European Pillar of Social Rights, which consists of a set of principles aimed at promoting a deeper and fairer Union, cannot be bypassed among the European Union documents.

²¹ Decision of the Court of Justice of the European Union C-434/2015 *Asociación Profesional elite Taxi vs. Uber Systems Spain SL* of 20 December 2017. It should be added that this decision was preceded by a number of decisions of the national general courts, e.g. see in particular the judgment of the *London Employment Tribunal* of 28 October 2016, *Aslam, Farrar and Others v. Uber* and others. BARANCOVÁ, H.: Pracovné právo v digitálnej dobe a rozvoj kolaboratívnej ekonomiky. In: *Justičná revue*, 2017, Vol. 69, No. 10, pp. 1138–1154.

²² COUNCIL OF THE EUROPEAN UNION. *The Changing World of Work: Reflections on New Forms of Work and Implications for the Safety and Health of Workers*. Brussels, 2019.

²³ COUNCIL OF THE EUROPEAN UNION. *The Changing World of Work: Reflections on New Forms of Work and Implications for the Safety and Health of Workers*. Brussels, 2019.

The European Pillar of Social Rights cannot be overlooked within the context of EU documents. The pillar consists of a set of principles aimed at promoting a deeper and fairer Union. It was unanimously adopted by the EU Ministers for Employment and Social Affairs at the Employment, Social Policy, Health and Consumer Affairs Council meeting on 23rd of October 2017 in Luxembourg. Subsequently, the European Pillar of Social Rights was announced by Parliament, the Council and the Commission at the Social Summit for Fair Jobs and Growth. The purpose of the European Pillar of Social Rights is to introduce new and more effective rights for citizens. It is based on 20 key principles, which are divided into three categories: i) equal opportunities and access to the labour market, ii) fair working conditions, and iii) social protection and inclusion. It should be appreciated that the European Union does not leave out new forms of employment such as crowdsourcing or work based on web platforms from its labour legislation. The European Pillar of Social Rights, in Chapter II 'Fair working conditions', point 5 'Safe and adaptable employment', emphasizes the need to ensure the necessary flexibility for employers so they could adapt quickly to changing economic conditions, while at the same time it expresses support for innovative forms of work, which guarantee quality working conditions. The intention is also to facilitate labour mobility. However, in addition to expressing support for atypical employment relationships, the European Pillar of Social Rights also aims to prevent employment relationships that lead to precarious working conditions, among other things, by prohibiting the abuse of atypical contracts. This seemingly almost contradictory definition of policies, basically copies the flexicurity model. In its essence the European Pillar of Social Rights does not represent a fundamentally new direction or groundbreaking policy, but rather a reinforcement of ideas that have been inherent in the European Union's labour and employment law for several years.

For completion, the concept of flexicurity has been presented by the European Union as an *instrument for the modernisation of labour law, leading to the increase in the number of jobs, improving their quality, increasing the mobility and adaptability of enterprises and the workforce to the changing conditions of the labour market*,²⁴ while ensuring a balance of sufficient flexibility

²⁴ Closer: EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Towards Common Principles of Flexicurity: More and better jobs through flexibility and security*, 2007, available online: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0359:FIN:SK:PDF>.

in employment relations and at the same time maintaining social and legal protection of an employee as a weaker party. With the demand for flexibility as an immanent part of flexicurity, the question of moving the boundaries of liberalisation against sharp paternalism in labour law arises; the demand for security incorporates the need to protect employment, or to create adequate income support in the event of job loss, but stimulating a quick return to the labour market. On the one hand, the legislation should offer the employer flexible options for hiring and firing employees, flexible organisation of working time,²⁵ and on the other hand, ensure the employee a quick possibility of finding a new job and an uninterrupted possibility of staying in the work cycle.

It is not just a matter of appearances; indeed, flexibility and protection are to some extent internally contradictory, leading to the logical conclusion that there is no universal model of flexicurity. According to the European Parliament resolution on common flexicurity principles, each Member State should choose its own flexicurity building blocks, based on its own situation and national traditions.²⁶

The European Union's interest in providing protection for new forms of employment, especially for those performing work in the collaborative economy, is to be appreciated,²⁷ as it is clear that without a legislative initiative, the performance of such work would be excluded from the social protection of labour legislation and those providing labour, often not only supplementarily but also as the main means of security, would be left without any social protection. This is the trend set by the Court of Justice of the European

²⁵ On the distinction between external and internal forms of flexibility see HODÁLOVÁ, I.: Flexibilita a flexibilita z pohľadu slovenského pracovného práva. In: *Europeizácia a transnacionalizácia pracovných vzťahov*. Pilsen: Aleš Čeněk Publishing House, s.r.o. 2009, pp. 134–154. In terms of the impact on the form and content of employment relationships, we distinguish between flexible forms of employment (employment flexibility) and flexible forms of work performance (work flexibility).

²⁶ EUROPEAN PARLIAMENT: *Resolution of 29 November 2007 on Common Principles of Flexicurity*, 2007, available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:C:2008:297E:TOC>

²⁷ On the 'uberization of labour relations' see BARANCOVÁ, H.: *Nové technológie v pracovnoprávných vzťahoch*. Prague: Leges, 2017, p. 27 ff. or also KRIŽAN, V.: *UBER v rozhodovacej činnosti orgánov aplikácie práva*. In: *Pracovné právo v digitálnej dobe*. Prague: Leges, 2017, pp. 112–128.

Union²⁸ and continued by the European Union itself. However, a slight criticism can be added in this respect in that the European Pillar of Social Rights is a non-legally binding instrument, although it would deserve more formal legal authority. The future will thus show whether the words of Commission President Jean-Claude Juncker²⁹ will come true and the European Pillar of Social Rights will form the backbone of the Union's new (not only) labour legislation.

Do these challenges mean the fall of labour law or, on the contrary, its renaissance, rise? The question may sound too exaggerated and antagonistic. Fall or rise are words that often have fatal meanings. Of course, we do not think that labour law as a legal branch is in danger of extinction. Its justification is based on solid historical foundations and traditions, international norm-making created over a long period of time, institutional security, and finally, the strongest power is hidden in the consciousness of society, which considers the regulation of work by the norm-making of labour law to be one of the foundations of a modern social contract. After all, labour law, like other branches of law, was not created by a single act, a break or some kind of flash, and it will not disappear in those ways either. At the same time, however, it should be added that labour law changed significantly due to the influence of fundamental social changes, which are historically linked to individual industrial revolutions. The origins of modern labour law, as a reflection of the natural conflict between the ideas and interests of persons using human labour and persons who offer their labour power, the conflict between work, capital, and the social and economic status of working people, arise at the time of the 1st Industrial Revolution. Public law interventions in the freedom of contract at a given time seem to be necessary for preserving the reproduction of the labour force, and even if they cannot balance the unequal status of the contracting parties,³⁰ they establish the immanent essence of labour legislation – its protective function.

²⁸ For example, the judgment of the Court of Justice of the EU in Case C-434/15 *Asociación Profesional Elite Taxi v Uber Systems Spain SL*, the judgment of the Court of Justice of the EU in Case C-320/16 *Uber France* or also in Case C-371/17 *Uber BV v Richard Leipold*.

²⁹ 'Today we commit to a set of 20 principles and rights. From the right to fair wages to the right to healthcare; from lifelong learning, a better work-life balance and gender equality to a minimum income: through the European Pillar of Social Rights, the EU will defend the rights of its citizens in a rapidly changing world.' Commission President Jean-Claude Juncker on the launch of the European Pillar of Social Rights on 17 November 2017.

³⁰ KAŠUBA, V.: *Náčrt vývoja uhorského pracovného zákonodarstva v rokoch 1867 – 1918*. In: *Historia et Theoria Iuris*, 2009, Vol. 1, No. 1, p. 45.

Step by step we could go through a brief historical cross-section, but each time even other changes in society could not change the essence of the primary conflict, and so the requirement to respect the protective function of labour law is the essence of each of its stages. Labour law will not disappear, but a fundamental transformation awaits it.

2. ARTIFICIAL INTELLIGENCE

As previously stated, the Industrial Revolution 5.0 is associated with the advent of artificial intelligence. Artificial intelligence are systems that exhibit intelligent behaviour by analysing the surrounding environment and taking action – with a certain degree of autonomy – to achieve specific goals. Artificial intelligence systems can be purely software-based and operate in the virtual world (e.g. voice assistants, photo analysis software, search engines, voice and face recognition systems), but artificial intelligence can also be part of hardware devices (e.g. advanced robots, autonomous vehicles, unmanned aerial vehicles or Internet of Things applications).

Artificial intelligence needs huge amounts of data to develop. Machine learning, one of the types of artificial intelligence, works by identifying patterns in the available data and then applying that knowledge to new data. To explain, sometimes finding a pattern itself is the goal of action: in the in-depth analysis of text and data, researchers use algorithms to so-called large numbers of texts reading (e.g. scientific papers in the field of chemistry) and automatically extract knowledge (e.g. finding facts that are not explicitly stated in any of the documents, but can be derived from the entire corpus).³¹ Deep learning represented a change in the situation by greatly improving the performance of solving specific tasks, such as photo or speech recognition or machine translation. Learning a deep learning algorithm to classify objects works by exposing them to a large number of marked examples (e.g. photographs) that are correctly categorized (e.g. aircraft photographs). Once learned, algorithms can correctly categorize objects they have never seen, in some cases with precision that exceed the accuracy of humans. Significant advances in these technologies have been made using large datasets and unprecedented computing power.³²

What does all this technical information mean for (not only) labour law? Paraphrasing the conclusions of the Industry 5.0 Conference organised by the

³¹ The Commission introduced an exception for text and data mining as part of the modernisation of EU copyright rules. Quoted from EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: Artificial Intelligence for Europe*, 2018, available online: <https://eur-lex.europa.eu/legal-content/SK/TXT/PDF/?uri=CELEX:52018DC0237&from=e>

³² Ibidem.

Consultative Commission on Industrial Change of the European Economic and Social Committee (EESC),³³ artificial intelligence will bring about a new model of cooperation and interaction between humans and machines.

2.1. Supporting artificial intelligence

As a general rule it holds true that any change, especially a change that disrupts the traditional (not just in a sense of retrogressive) societal functioning, brings with it concerns, but on the other hand also challenges. We believe that this general rule can be safely applied on the advent of artificial intelligence in our lives. It is indisputable that many jobs will be replaced by automation, and this is particularly the case for manual work that requires low qualifications. It is also indisputably true that the EU countries in which manual labour has the largest share of total employment, including the Slovak Republic, are most at risk.³⁴ At the same time, it is true that many other jobs are already being created today directly as the result of technological progress.

Examples include new job profiles in the field of machine learning algorithms and other digital innovations.³⁵ Overall, since 2011, the number of ICT professionals in the EU has been growing by 5% per year. This has created 1.8 million jobs, and in the last five years their share of total employment has rapidly increased from 3% to 3.7%. These are highly qualified jobs that are not suitable for everyone. In a situation where we are opening the debate on the expected turbulent shocks in the labour market due to automation, robotisation and artificial intelligence, we cannot limit ourselves only to the field of labour law. Education is crucial to mastering the even more rapid advent of technology. This applies at the national as well as at the supranational level.

³³ EUROPEAN ECONOMIC AND SOCIAL COMMITTEE: *Industry 5.0 Will Bring about a New Paradigm of Cooperation between Humans and Machines*, 2019, available online: <https://www.eesc.europa.eu/sk/news-media/eesc-info/012019/articles/66151>

³⁴ It is expected that up to 60% of the workforce will lose their jobs due to the introduction of information and communication technologies. See DACHS, B.: *The Impact of New Technologies on the Labour Market and the Social Economy*. Brussels: STOA, 2018, available online: [http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614539/EPRS_STU\(2018\)614539_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614539/EPRS_STU(2018)614539_EN.pdf)

³⁵ COGNIZANT: *21 Jobs of the Future: A Guide to Getting – and Staying – Employed over the Next 10 Years*. Center for the Future of Work, 2017, available online: <https://www.cognizant.com/us/en/whitepapers/documents/21-jobs-of-the-future-a-guide-to-getting-and-staying-employed-over-the-next-10-years-codex3049.pdf>

The EU itself has identified three main challenges for its further development – highlighting the fundamental role of education and professional training, including the education and training of teachers and trainers themselves. The first challenge is to prepare society as a whole. This means helping all Europeans to develop basic digital skills, as well as skills that are complementary to machines and cannot be replaced by machines, such as critical thinking, creativity and management. Secondly, the EU must focus on helping workers in jobs that are likely to undergo transformation or disappear due to automation, robotics and artificial intelligence. This includes ensuring access to social protection for all citizens, including workers and the self-employed, in line with the European Pillar of Social Rights. Finally, the EU needs to train more artificial intelligence professionals, using its long tradition of academic excellence, create a suitable working environment for them and attract more talents from abroad.³⁶

Not just the EU, but no one can close their eyes before the advent of technology. This is an irreversible phenomenon, which can also mean a fundamental redistribution of economic influence among regions. It provides a chance for economic sustainable growth, at least to the extent that it is possible in today's tired world of crisis (climate, peace and social crisis). Europe should strive to increase the number of people trained in artificial intelligence and stimulate diversity. More women and people from different backgrounds, including people with disabilities, need to be involved in the development of artificial intelligence, starting with inclusive education and training in the field of artificial intelligence, to ensure that artificial intelligence is non-discriminatory and inclusive.

2.2. Ethics and non-discrimination

The advent of artificial intelligence and its unnoticed integration into society, work practices or everyday life, is also associated with considerable ethical dilemmas. The European Commission has set up a High-Level Expert Group on Artificial Intelligence, publishing the document 'Ethics Guidelines

³⁶ Quoted from the EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions: Artificial Intelligence for Europe*, 2018, available online: <https://eur-lex.europa.eu/legal-content/SK/TXT/PDF/?uri=CELEX:52018DC0237&from=en>

for Trustworthy Artificial Intelligence.³⁷ The Commission considered the possible impacts of automated systems on human rights and identified four fundamental ethical principles, anchored in fundamental rights, that must be respected to ensure that artificial intelligence systems are developed, deployed and used in a trustworthy manner. These principles have been identified as ethical requirements that artificial intelligence specialists should always strive to adhere to. The order in the list does not represent the order of importance. It presents the principles in a way that reflects the order in which the EU Charter of Fundamental Rights lists the fundamental rights on which they are based. These are: (i) respect for human autonomy; (ii) harm prevention; (iii) fairness and (iv) explainability.

The Commission underlines that the development, deployment and use of artificial intelligence systems bring a commitment to ensuring equal and fair distribution of both benefits and costs. At the same time, it should be ensured that individuals and groups are not subjected to unfair bias, discrimination and stigmatisation. If unfair bias can be prevented, artificial intelligence systems could even enhance social justice. Equal opportunities in terms of access to education, goods, services and technology should also be promoted. Furthermore, the use of artificial intelligence systems should never lead to the deception of (end)users or to a weakening of their freedom of choice. In addition, fairness means that artificial intelligence specialists should respect the principle of proportionality between means and objectives and carefully consider how to balance conflicting interests and intentions. The procedural dimension of equity includes the ability to challenge decisions of artificial intelligence systems and the people operating them and to seek effective remedy.³⁸

Similarly, the Committee of Ministers of the Council of Europe addresses the impact of algorithmic systems on human rights in a separate document³⁹ and adopted a recommendation addressed to the Member States highlight-

³⁷ HIGH-LEVEL EXPERT GROUP ON ARTIFICIAL INTELLIGENCE: *Ethics Guidelines for Trustworthy AI*. Brussels: European Commission, 2019, available online: https://www.europarl.europa.eu/meetdocs/2014_2019/plmrep/COMMITTEES/JURI/DV/2019/11-06/Ethics-guidelines-AI_EN.pdf

³⁸ Ibidem, p. 15

³⁹ COUNCIL OF EUROPE: *Recommendation CM/Rec(2020)1 of the Committee of Ministers to member States on the Human Rights Impacts of Algorithmic Systems*, 2020, available online: https://search.coe.int/cm/pages/result_details.aspx?objectid=09000016809e1154. In this regard, interesting ideas are provided by the dissertation DUDITŠ, L.: *Rozsudok v civilnom sporovom konaní*. Košice: Univerzita Pavla Jozefa Šafárika v Košiciach, 2022.

ing the obligations of the Member States in ensuring the rights and freedoms under the Convention and in the process of technological development and digital transformation.

The Commission's intention can only be welcomed, but at the same time legitimate doubts about the implementation of these intentions arise. One example is the method of selecting new employees using algorithms or artificial intelligence, to which several employers are turning.⁴⁰ While from the point of view of the GDPR, this procedure is treated with relatively precise regulation,⁴¹ from the point of view of job seekers, protection against discrimination becomes only formally illusory.

As part of pre-contractual relations, artificial intelligence is already taking over routine and repetitive aspects of human resources specialists' work. Artificial intelligence is able to assess the submitted resumes, select the most suitable candidates, help with the profiling of candidates, and schedule a job interview. In the near future, it is expected that artificial intelligence, through chatbots, will communicate with selected candidates, verify their abilities, or answer their questions regarding the employer's usual operations. This will de facto replace the core work of human resources specialists. The first question that arises is whether artificial intelligence will proceed to act non-discriminatorily. Protection against discrimination is already guaranteed in the legal regulation of pre-contractual relations, and the employer must always proceed in accordance with this principle when selecting employees. It is not possible to talk about the fair exercise of law if it is contrary to the principle of equal treatment and the material concept of non-discrimination. Does artificial intelligence always proceed non-discriminatory when sorting professional resumes? Are statistical data on employee turnover, education, violations of work discipline with regard to any of the differentiating features part of the content of artificial intelligence's knowledge? Does artificial intel-

⁴⁰ See, for example, OLÁHOVÁ, K.: Výber nových zamestnancov nechávajú firmy na umelú inteligenciu. In: *TREND.sk*, 2022, available online: <https://www.trend.sk/biznis/vyber-novych-zamestnancov-nechavaju-firmy-umelu-inteligenciu>

⁴¹ Artificial intelligence makes profiling and automated decision-making possible, or most profiling and automated decision-making are currently carried out with the help of artificial intelligence. The GDPR defines profiling for its purposes in Art. 4(4) as *any form of automated processing of personal data consisting of the use of personal data to evaluate certain personal aspects relating to a natural person, in particular to analyse or predict aspects concerning that natural person's performance at work, economic situation, health, personal preferences, interests, reliability, behaviour, location or movements*. See ŽUŠOVÁ, J.: Používanie umelej inteligencie pri výbere zamestnancov z perspektívy GDPR. In: *Justičná revue*, 2021, Vol. 73, No. 1, pp. 30–39.

ligence have built-in biases? And last but not least, is there an internal check that will prevent unwanted discriminatory actions? The answers to these questions are clear. The problem is to get the right answers in the real world. We express our belief that in the future there should be at least a multi-component level of check of compliance with the prohibition of discrimination over the activity of artificial intelligence. First, the rights of the employees should be guaranteed by the employer. This should be the basic, first line of protection. However, we believe that only soft law is not sufficient to comply with the employer's control over the activity of artificial intelligence. We assume that it will be necessary to create a legal environment that will allow transparent public authorities' control of the way of operation of algorithms or artificial intelligence, which will implement labour relations on behalf of the employer. This would represent the second line of protection. And finally, last but not least, employees must always be given the possibility of judicial review of the employer's actions.

Another ethical issue with replacing the work of a human resources specialist with artificial intelligence is data collection. The Internet and, above all, social networks represent a unique opportunity to obtain a variety of information about employees. User profiles provide enough personal and behavioural data that can also be used in the selection of suitable employees. Human resources specialists confirm that, based on an internet (digital) trace, a natural person may be invited to a job interview or even hired, but also rejected or unnecessarily disadvantaged, even if it may later turn out that the information provided was distorted or even false.⁴² Typically, a future employer can only require information from an employee that is related to the work to be performed. The employer may not demand from a natural person information about pregnancy, family relationships, integrity, with the exception of work that requires integrity according to a special regulation, or if the requirement of integrity is required by the nature of the work that the natural person is to perform, about political affiliation, trade union affiliation and religious affiliation.⁴³ When selecting an employee, an employer may also not require information related to nationality, racial origin or eth-

⁴² BÖHMOVÁ, L., PAVLÍČEK, A.: Personalistika a budoucnost sociálních sítí v ČR. In: *Scientific Papers of the University of Pardubice. Series D, Faculty of Economics & Administration*, 2013, Vol. 20, No. 27, pp. 14–22. Quoted from ŽUŤOVÁ, J.: Profilovanie a automatizované rozhodovanie (nielen) v pracovnom práve. In: *Práca 4.0, digitálna spoločnosť a pracovné právo*. Bratislava: Friedrich Ebert Stiftung, 2018, pp. 49–60.

⁴³ Provision of Sec. 41 par. 5 and 6 of the Labour Code. However, it can be stated that a similar regulation applies in general in the EU.

nic origin, political attitudes, membership in trade unions, religion, sexual orientation, information that is contrary to good morals, and personal data that are not necessary for the performance of employer's duties established by a special regulation on the protection of personal data. An employer is obliged to prove the necessity of the required personal data at the request of a citizen. The criteria for selecting an employee must guarantee equal opportunities for all.⁴⁴

However, labour law regulations do not a priori preclude (and especially in reality it is not even possible) that an employer also draws on information that an employee themselves publishes publicly on social networks. Then what is the difference when artificial intelligence will do it? In our opinion, the difference is substantial. As long as a person searches for information from social networks, we can assume that they will make an effort proportional to the importance of choosing an employee. In many cases, they will not search for such information at all or only marginally. And even with the greatest effort, an employer is unlikely to get access to all the information to which there is open access. This does not apply to artificial intelligence. It can be reasonably assumed that artificial intelligence will gather a lot of publicly available information and it is not excluded that this will be relevant for the selection itself using the set algorithms. However, such an approach is questionable not only from the point of view of personal data protection, but also from a broader perspective. Published information of a private nature, regardless of whether it was published by a third party or an employee themselves, should not have importance in the selection of the employee for employment.

If we turn away from labour law, a broad discussion is made about the possibility of using artificial intelligence in decision-making practice. It is assumed that in the near future artificial intelligence will replace the decision-making activity of arbitration courts, but also of classic general courts.⁴⁵ The activity of judges and the entire apparatus will no longer be necessary. However, these (at first glance almost utopian) ideas have opponents as well. Human rights are general, inalienable, and the right to judicial protection is definitely part of them. It is emphasized that the result of the decision-making activity created by artificial intelligence must always be controlled by

⁴⁴ Sec. 62 par. 3 of the Labour Code.

⁴⁵ See for example BRNČALOVÁ, S.: Robot as Judge? Possibility of the Use of an Artificial Intelligence in Court Proceedings in Slovakia. In: *Artificial Intelligence from the Perspective of Law and Ethics: Contemporary Issues, Perspectives and Challenges*. Prague: Leges, 2021.

human, and in the first step artificial intelligence can replace mostly simpler decision-making processes that are carried out internally and have only a basic procedural nature. Regardless of how the practice of general courts will develop, artificial intelligence is expected to take over a large amount of decision-making activity in labour law. And also, here fundamental risks and important questions are raised. Ultimately, decision-making about the work process and work procedures can not only serve and facilitate the performance of work for employees but can also indirectly manage their work. What goal will artificial intelligence pursue? Carrying out activities in a way that allows the most efficient result in favour of an employer or in a way that ensures that work is as safe and easy as possible for an employee, despite the increased costs for the employer? Will it be possible to find a compromise between the two approaches? Of course, the same questions are still on the table today when activity is controlled by human reason. However, the check of procedures performed by artificial intelligence should undergo at least the same control by public authorities as it does today with the standard allocation and management of work.

3. RETHINKING ONTOLOGICAL MEANING OF FOUNDING LABOUR LAW CATEGORIES UNDER THE INFLUENCE OF AI

The transformative impact of technology is visible in every aspect of working life. Computers, digital technology, AI, algorithms – all that is changing the modern workplace and with it the understanding of the contractual agreement on which it is founded. In academic circles there is a widespread debate about the future of work.⁴⁶ Currently we are experiencing the transition phase from the old to the new *condition humana*, a kind of interregnum⁴⁷ marked by obsessive modernization, liquefaction, deregulation. That means, on the one hand, technology altering the DNA of standard working arrangements creating further asymmetries, and on the other hand, mushrooming of often hardly classifiable platform-based working activities. While it is labour lawyers' primary concern to navigate in a new blurred reality of employment relations, it should be of equal importance to set rather 'meta-physical' boundaries for technological progress. We should try to find an answer to the question if 'progress for progress's sake must be discouraged',⁴⁸ or should we assume that technological breakthroughs will always imply improvement of human and working condition and therefore they should be accepted by default.⁴⁹

In the midst of abundant scholarly literature focusing on the new technologies in the workplace and novel forms of work brought by IT development,

⁴⁶ Also ILO launched the homonymous initiative in 2013 and the literature on this topic is extensive BARNARD, C., DEAKIN, S., MORRIS, G. (eds.): *The Future of Labour Law: Oxford Liber Amicorum Sir Bob Hepple QC*. Oxford: Hart Publishing, 2004; CRAIG, J. D., LYNK, S. M. (eds.): *Globalization and the Future of Labour Law*. Cambridge: Cambridge University Press, 2006; SUSSKIND, R. E., SUSSKIND, D.: *The Future of the Professions: How Technology Will Transform the Work of Human Experts*. Oxford: Oxford University Press, 2015.

⁴⁷ Bauman considers interregnum a moment when the old ways are not good enough for current state of society but the new ones have not been invented yet. BAUMAN, Z.: *Modernità liquida*. Bari: Editori Laterza, 2011.

⁴⁸ Infamous quote from Harry Potter saga belongs to Professor Dolores J. Umbridge. ROWLING, J. K.: *Harry Potter and the Order of Phoenix*. London: Bloomsbury, 2003, p. 213.

⁴⁹ For particularly significant opinion against techno-deterministic narrative see, for instance, DE STEFANO, V.: 'Negotiating the algorithm': Automation, Artificial Intelligence, and Labour Protection. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1.

one can find a surprising academic work addressing profound implications between technology and labour already in the late 1980s. Gaetano Vardaro, an Italian labour law scholar, in his essay named *Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro*⁵⁰ challenges the archaic labour law categories in a bold interdisciplinary *exposè*. His ever open-minded analysis of legal and social concepts allows us today to move along the lines of his arguments and to use his work as a 'search engine', as someone called it, not much for what is already known and out there, but rather for what there is to 'reveal' in Heideggerian sense.⁵¹

One encounters similar shortage of academic debate examining ties between labour law and technology, among the Czech or Slovak authors.⁵² Interestingly enough, about the same time period when Vardaro wrote his paper, two prominent Czechoslovak labour law scholars – Jaroslav Filo and Milan Závacký – showed concern for the matter in *Innovation in technology and their reflection in Labour Law*.⁵³ Not as revolutionary as Vardaro's piece, on the contrary, perfectly in line with the reigning socialist organisation in Czechoslovakia in 1987, the article still manages to challenge today's scholar with timeless insights about the technology and law, and therefore it is deemed to be worthy of being taken into account in the following exposition.

From the beginning Vardaro argues that it is impossible to have meaningful debate about the technological influence on labour law without first defining the technology.⁵⁴ Indeed, the determination of the meaning of technology is an exercise with plurality of possible outcomes, let alone the complexity of such quest. There has been countless attempts in that direction in every field of human knowledge – the humanities, social and natural science, sociology, engineering sciences, philosophy, history and so on. Etymologically speaking, the word has origin in Greek *tekhnē*, which means art, skill, and *logos* speech or reason. Aeschylus narrates that Prometheus dis-

⁵⁰ The title can be translated word for word as 'Technique, Technology and Ideology of Technique in Labour Law'. VARDARO, G.: *Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro*. In: *Politica del Diritto*, 1986, No. 1.

⁵¹ CHIOCCI, A.: *Elogio del pensiero ricognitivo: non solo diritto del lavoro. Intorno e oltre l'itinerario di Gaetano Vardaro*. Avellino: Associazione culturale Relazioni, 2000, p. 20.

⁵² Author is of Slovak origin and with inevitable imprint of the first legal education given in this central European environment, the cause of everlasting curiosity towards comparison of Italian and (Czecho)Slovak legal systems.

⁵³ FILO, J., ZAVACKY, M.: *Innovations in Technology and their Reflections in Labour Law*. In: *Legal Scope*, 1987, Vol. 70, No. 5, pp. 357–368.

⁵⁴ VARDARO, G.: *Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro*. In: *Politica del Diritto*, 1986, No. 1, p. 76.

closed *tekhne* to human race as a gift of fire – not only in a physical sense but more importantly as a fire of reason, mastering of sciences and arts. However, slightly more obscure conclusions seem to be drawn in a tale told by Plato in the *Protagoras*. The fire of creative power, although source of potent skills and mastery of arts, does not suffice to save men from suffering, discord and war.⁵⁵ Civilized humanity thus cannot be reached solely by using the gift of *tekhne*, but only by means of high virtues of justice and reverence⁵⁶ – qualities on which respectively any law and religion were built. In fact, here we can see the very first interrelation between concepts of technology and law. Their relationship is not that of dependence, as the former can function independently without the latter and vice versa, but rather that of efficiency – a system that brings well-being and progress if sustained by some kind of ethical or normative regulation.

Martin Heidegger, that served to a large degree as an inspiration for Vardaro's essay, described the idea embedded in the word *tekhne* as both the human activity and means to an end. '*Who would ever deny that it is correct? It is in obvious conformity with what we are envisioning when we talk about technology. The instrumental definition of technology is indeed so uncannily correct that it even holds for modern technology*'.⁵⁷ Nonetheless, he assumed rather reluctant position towards this instrumental conception, which, albeit correct, prevents us from understanding the real essence of technology and from developing the right relation to it.

Vardaro, just like Heidegger, calls in question those same assumptions that '*seem to have fallen from heaven as a truth as clear as daylight*'. First of all, through *petition principii*-like reasoning, he tries to rebut the instrumental definition of technology. His main concern lies with the apathetic approach of the labour law scholars in taking for granted this interpretation, thus narrowing the possibilities for characterisation of subordination.⁵⁸

⁵⁵ For the philosophy standpoint see for instance BERG OLSEN, J. K. et al.: *A Companion to the Philosophy of Technology*. Chichester: Wiley-Blackwell, 2009; for even more comprehensive overview see FRANSSEN, M. et al.: *Philosophy of Technology, The Stanford Encyclopedia of Philosophy*, available online: <https://plato.stanford.edu/archives/fall2018/entries/technology/>

⁵⁶ RAGGIO, O.: The Myth of Prometheus: Its Survival and Metamorphoses up to the Eighteenth Century. In: *Journal of the Warburg and Courtauld Institutes*, 1958, Vol. 21, No. 1-2, pp. 44–62.

⁵⁷ HEIDEGGER, M.: *The Question Concerning Technology and Other Essays*. New York & London: Garland publishing, 1977, p. 5.

⁵⁸ Meanwhile, the coeval voice arriving from the other side of iron curtain was claiming not misunderstanding but deliberate oversimplifying, followed by inadequate labour regula-

Furthermore, he distinguishes between the terms *tecnica* and *tecnologia*, given that the former comprises the latter, enlarging the original sense of 'means of production as instruments, mechanisms and devices in their entirety that define the machine age' to the 'form of organisation and perpetuation of social relations as well as the replaceability of human labour with the machine as a result of automation'.⁵⁹ Interestingly enough, English language lacks this dichotomy known to many other European languages, the reason why present monograph refers solely to term technology, without distinction of the meaning.

Vardaro then observes how the new technologies expose all the weak spots of current definition of subordination and furthermore undermine the protective image of labour law. His assertion that '*new technologies do not mark the crisis of the labour law, but rather the crisis of its image as the legal branch which only scope is to safeguard employed workers*'⁶⁰ must be considered with utmost interest. He underlined that the primary function of labour law used to be so called *Rationalisierung*, and thus, by enhancing the employer's prerogatives towards employees, he was able to strengthen his position in modern society as the entrepreneur – innovator and organiser.⁶¹ According to Vardaro, the new technologies, and by that he means digital technologies, represent the culmination of such scope (of rationalising). In fact, the new labour law runs the risk of ending up in the denial of itself.⁶² In its relatively short history, labour law shifted from nineteenth century flexibility and centrality of contractual autonomy (hence rationalising), to extensive mandatory protection of weaker party of the employment contract (protective function), so that employees' rights would be slowly made precarious by pro-business legislative policy (rationalising 2.0). Moreover, as opposed to original rationalisation predetermined to enhance the titanic image of the

tion and application. FILO, J., ZAVACKY, M.: Innovations in Technology and their Reflections in Labour Law. In: *Legal Scope*, 1987, Vol. 70, No. 5, p. 358.

⁵⁹ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 82.

⁶⁰ Ibidem, p. 107.

⁶¹ Ibidem, p. 84; here agreeing with him also NOGLER, L.: Tecnica e subordinazione nel tempo della vita. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2015, No. 147, p. 342.

⁶² CIANFEROTTI, G.: Testi e contesti di storia di diritto del lavoro. A proposito di libro di Paolo Passaniti 'Storia del diritto del lavoro'. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2007, No. 3, p. 573.

employer-entrepreneur,⁶³ today's employer is getting empowered in subtle way, hiding behind the algorithm, trying to give impression that it is not him who gives direct orders to employees, who controls or even disciplines them.⁶⁴

Consequently, the proliferation of new technologies calls into question one of the (self)representations of labour law: is it or is it not specifically delegated to the protection of subordinate workers, both collectively and individually? Such self-doubt is validated through experiencing sense of inadequacy in front of technological changes. First, it comes under the form of missing conceptual apparatus – as one illuminated judge who expressed his feelings about being handed a square peg and being asked to choose between two round holes⁶⁵ – when dealing with alleged incompatibility of platform-based workers around the world with notion of employee. Second, it vacillates under the pressure of fast innovation. Although labour law's lagging behind the economic and social reality is its quintessential feature, its organizational function should attenuate the delay to some extent. Nevertheless, unprecedented technological progress leaves no time to adjust and results in constant legal vacuum.

We could only assume that Vardaro's doubts about centrality of protective scope in labour law should be interpreted as a wakeup call for academic community, and certainly not as a real scepticism. After all, in the final words of his essay he envisions two alternatives for the future of this legal branch: either it will disappear in broader concept of commercial law, or else we could try to redistribute safeguards and guarantees more fairly.⁶⁶ Hence, the question should not be *if* the protection of employees is vital role of labour law, but *how should the labour law protect work regardless of form in which it presents itself*.

The following chapters thus represent an attempt to analyse the most salient labouristic issues with regards to the pressure of fast technological development.

⁶³ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 84.

⁶⁴ ADAMS-PRASSL, J.: What If Your Boss Was an Algorithm? Economic Incentives, Legal Challenges, and the Rise of Artificial Intelligence at Work. In: *Comparative Labour Law & Policy Journal*, 2019, Vol. 41, No. 1, pp. 26-27.

⁶⁵ *Cotter v. Lyft, Inc.*, United States District Court, N.D. California, March 2015, Case No. 13-cv-0465-VC.

⁶⁶ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 128.

4. TECHNOLOGICAL UNEMPLOYMENT – AN EMPTY THREAT OR AN INEVITABLE NECESSITY?

Current digital transition in employment has its immediate effects in the general perception of automation anxiety among the workers. However, the workman's fear of the technology taking his job could be easily perceived as an outdated commonplace from where we stand today. The questions about job deskilling and displacement caused by technology have been widely dealt with since the dawn of industrial revolution. Even further down the road of the history – in the ancient Greece and Rome – people were aware of the perils of introducing newer and cheaper industrial processes in the labour market. However, it was not clearly any machine or automated process that caused displacement of workers in ancient times, but rather the invasion of all economic fields by the work of slaves. Slaves were considered the living instruments of action,⁶⁷ and as such the machines in flesh and blood. In Aristotelian point of view slaves could be seen as an alternative of non-existing technological support: *'if (...) the shuttle would weave and the plectrum touch the lyre without a hand to guide them, chief workmen would not want servants, nor masters slaves'*.⁶⁸ In Roman Empire, the largest slave society in the history,⁶⁹ the labour market was distorted in favour of enslaved population. Unemployment in Rome was a permanent condition, *'the revenge of slavery upon the ancient world'* as someone called it.⁷⁰ Some poor freeborn men even chose the voluntary enslavement so that they could achieve more secure long-term employment.⁷¹ Despite obvious exaggeration in treating two very different phenomena as the same problem, something can be said about similarities in their effects and remedies. As well as contemporary use

⁶⁷ 'Now instruments are of various sorts; some are living, other lifeless; in the rudder, the pilot of a ship has a lifeless, in the look-out man, a living instrument, for in the arts the servant is a kind of instrument'. ARISTOTLE: *Politics*. Kitchener: Batoche Books, 1999, p. 7.

⁶⁸ Ibidem.

⁶⁹ SCHEIDEL, W.: *Slavery in the Roman Economy*. Stanford: Stanford University, 2010, p. 2, available online: <https://www.princeton.edu/~pswpc/pdfs/scheidel/091003.pdf>.

⁷⁰ BURR MARSH, F.: In Defence of the Corn-Dole. In: *The Classical Journal*, 1926, Vol. 22, No. 1, p. 25.

⁷¹ TEMIN, P.: The Labor Market of the Early Roman Empire. In: *Journal of Interdisciplinary History*, 2004, p. 12.

of technology aims to reduce the cost of labour,⁷² it can be positively affirmed the same about slave work in antiquity. The annual cost of a free labourer in the 4th century B.C. in Greece was approximately 540 drachmas as opposed to 270 drachmas for annual maintenance of a slave.⁷³ With regards to remedies, Julius Caesar tried to tackle high unemployment by introducing mandatory quota of free men to be hired in some economic fields. Peeking into the future, some authors suggest that governments will have to determine what jobs should be reserved to humans, either by creating a kind of ‘human quota’, or by using a softer approach and nudging employers to hire humans by creating ‘made by humans’ brand.⁷⁴ In order to tackle the occupational crisis, Gaius Gracchus introduced grain dole as a form of unemployment benefit and other measures such as extensive program of road building, and Augustus gave lands to ex-soldiers at risk of sudden unemployment in order to establish agricultural veteran colonies. Now, the grain dole operated as a distribution of grain to poor people of Rome at half price,⁷⁵ whereas modern unemployment benefits work as a direct payment to a restricted category of recently laid off workers. Nonetheless, by lowering the cost of living of the Roman mob he freed them from the need of (already scarce) labour. What is more, road construction provided employment for many citizens.

Despite reigning academic consensus⁷⁶ trying to calm down the excitement and fear brought by every potential technological change in the em-

⁷² In times of Covid-19 pandemic many companies turned to automation to deal with budget constraints. See for example LOTEN, A.: Software Bots Multiply to Cope With Stretched Resources. In: *Wall Street Journal*, 2021, available online: <https://www.wsj.com/articles/software-bots-multiply-to-cope-with-stretched-resources-11611615504>.

⁷³ FORBES, J. D.: *Some Evidences of Technological Unemployment in Ancient Athens and Rome*. Stanford: Stanford University, 1932, p. 13.

⁷⁴ WISSKIRCHEN, G. et al.: *Artificial Intelligence and Robotics and their Impact on the Workplace*. IBA Global Employment Institute, 2017, p. 40.

⁷⁵ BURR MARSH, F.: In Defence of the Corn-Dole. In: *The Classical Journal*, 1926, Vol. 22, No. 1, pp. 23–24.

⁷⁶ See CHERRY, M. A.: Job Automation in the 1960s: A Discourse ahead of Its Time (and for Our Time). In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1, pp. 197–220; also FINKIN, M. W.: Technology and Jobs: The Agony and the Ecstasy. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1, pp. 221–234; DE STEFANO, V., ALOISI, A.: *Il tuo capo è un algoritmo. Contro il lavoro disumano*, La Terza, 2020; FREY, C., OSBORNE, M. A.: The Future of Employment: How Susceptible Jobs Are to Computerization? In: *Technological Forecasting and Social Change*, 2017, Vol. 114. On the contrary, for more deterministic economist approach see BRYNJOLFSSON, E., McAFFEE, A.: *La nuova rivoluzione delle macchine. Lavoro e prosperità nell'era della tecnologia trionfante*. Feltrinelli Editore Milano, 2019.

ployment, the discussants in all generations were oftentimes stuck in repeating the recurrent pros and cons of ‘new’ technologies in the world of work. Eventually, ongoing technological progress since nineteenth century lead inevitably into creating two schools of thought – first, rather obscure, started with extreme Luddite movement’s ‘rage against the machines.’⁷⁷ More moderate opinion was expressed by professor Henry Booth in 1887. After recognising the indubitable progress of humankind in bringing some advantages for the workers (mostly in terms of cheap products that they could finally afford), he comes to a conclusion that *‘the laborer sees in the machine a remorseless rival, operated by the tireless forces of nature taking away from him the accustomed task whereby he earned bread for his family, conscious that competition with such a rival must be hopeless.(...) The term labor-saving machinery is not a misnomer, but conveys the correct idea. It means machinery which saves labor, or dispenses with the services of the laborer. This, then, is the revolution which we are called upon to face.’*⁷⁸ The second school of thought was represented by those who considered negative effects of technology on work only temporary phenomenon, soon to be compensated by better opportunities it creates. J. M. Keynes optimistically believed in automation’s positive effect on economy. It was him who coined the term technological unemployment, meaning *‘unemployment due to our discovery of means of economising the use of labour outrunning the pace at which we can find new uses for labour’*.⁷⁹ According to famous economist, machines would, indeed, replace humans, causing short-term technological unemployment of the masses. However, in the long run, thanks to machines standard of living would increase and it would eliminate, once and for all, the economic problem of humankind, i.e. having to work to earn a living.⁸⁰ Technological unemployment was a ‘disease’,⁸¹ but the same virus causing it was consid-

⁷⁷ Full account on luddite fallacy and technological unemployment in general is given by CAMPA, R.: Technological Unemployment. A Brief History of an Idea. In: *Orbis Idearum*, 2018, Vol. 6, No. 2, pp. 57–80.

⁷⁸ BOOTH, H.: The Labor Question. In: *Chicago Law Times*, 1886, Vol. 1, No. 1, p. 15. The quotation includes the American English spelling of ‘labour’ in its original version.

⁷⁹ KEYNES, J. M.: Economic Possibilities for Our Grandchildren. In: *Essays in Persuasion*. W. W. Norton & Co, 1963, pp. 358–373.

⁸⁰ Ibidem, pp. 358–373.

⁸¹ *‘We are being afflicted with a new disease of which some readers may not yet have heard the name, but of which they will hear a great deal in the years to come - namely, technological unemployment’* KEYNES, J. M.: Economic Possibilities for Our Grandchildren. In: *Essays in Persuasion*. W. W. Norton & Co, 1963, pp. 358–373.

ered a cure. It goes without saying that, so far, he was proven partially⁸² right. In two hundred years of history there is no evidence of other than temporary joblessness, rather than structural technological unemployment. Even if some professions became inevitably obsolete, people were still able to work – so the lamplighters disappeared from the streets but new electricians could still make a living.

Although also the contemporary voices about the effects of automation are often discordant, they agree on one thing: there is no guarantee that the history will repeat itself once again. Firstly, new technology develops at a faster pace than before, leaving less time for workers and organisations to adjust, which can lead to widening gaps and increasing possibilities for technological unemployment.⁸³ Secondly, the technology itself is different. With the inception of ‘second machine age’⁸⁴ the myth that technology, namely computers and digital technology, is capable of replacing humans only in mundane, simple tasks, has fallen.⁸⁵ Recently, The New York Times featured an article called ‘The robots are coming for Phil in accounting’ that underlined the reality of white collar automation as a result of robots’ capability of complex decision making and how it is becoming less rare to build career path on a basis of scarce ‘automability’ of chosen profession.⁸⁶ And last but not least, capitalism seems to be imploding. According to the Slovenian philosopher Slavoj Žižek ‘it is the very success of capitalism which produces unemployment,

⁸² Keynes's other predictions (including the one when our generation was to live life without economic necessity and working just to avoid boredom) unfortunately did not come true.

⁸³ BRYNJOLFSSON, E., McAFEE, A.: *La nuova rivoluzione delle macchine. Lavoro e prosperità nell'era della tecnologia trionfante*. Feltrinelli Editore Milano, 2019, p. 192.

⁸⁴ Term invented by two authors in the volume BRYNJOLFSSON, E., McAFEE, A.: *La nuova rivoluzione delle macchine. Lavoro e prosperità nell'era della tecnologia trionfante*. Feltrinelli Editore Milano, 2019, p. 13 ff. According to the authors, ‘the first machine age’ took place during the industrial revolution, when for the first time in history the human progress depended on technological innovations replacing muscular power. The second machine age generates the progress too, but contrary to the previous era new technology takes to uncharted territories and overcome our limits with regards to our mind and mental capacities.

⁸⁵ According to previous theories, human brains, as opposed to computers, are especially good at recognising the patterns, i.e. taking in information via our senses and examining it for patterns. See LEVY, F., MURNANE, R.: *The New Division of Labor: How Computers Are Creating the Next Job Market*. Princeton: Princeton University Press, 2005.

⁸⁶ ROOSE, K.: The Robots Are Coming for Phil in Accounting. In: *New York Times*, 2021, available online: <https://www.nytimes.com/2021/03/06/business/the-robots-are-coming-for-phil-in-accounting.html>.

rendering more and more people useless'.⁸⁷ Despite the desire of capitalism for full automation, it still needs humans, if not as producers of value, but certainly as consumers of products. That is why the ones who are the most aware of the pitfall of technological unemployment are the big companies who would lose the consumers for their products. It is therefore not paradoxical at all that Silicon Valley entrepreneurs became the most ardent proponents of Universal Basic Income.⁸⁸

As far as the issue of technological unemployment is concerned we are still moving on the quicksand of contradictory economic theories. Nevertheless, with all probability we will witness losing some jobs to automation in the years to come. What is more, some authors see the automation as the only solution for the demographic crisis in act: the older national populations grow, the more the gaps in the labour markets need to be filled with robots.⁸⁹

⁸⁷ ŽIŽEK, S.: The Revolt of the Salaried Bourgeoisie. In: *London Review of Books*, 2012, Vol. 34, No. 2, available online: <https://www.lrb.co.uk/the-paper/v34/n02/slavoj-zizek/the-revolt-of-the-salaried-bourgeoisie>.

⁸⁸ SADOWSKI, J.: Why Silicon Valley Is Embracing Universal Basic Income. In: *The Guardian*, 2016, available online: <https://www.theguardian.com/technology/2016/jun/22/silicon-valley-universal-basic-income-y-combinator>.

⁸⁹ TREMOLADA, L. L'inverno (demografico) sta arrivando: perché servono velocemente più robot. In: *Il Sole 24 Ore*, 2022, available online: <https://24plus.ilsole24ore.com/art/l-inverno-demografico-sta-arrivando-perche-servono-velocemente-piu-robot-AEUtZi2B>. See also ACEMOGLU, D., RESTREPO, P.: *Demographics and Automation*, WP 24421, National Bureau of Economic Research, 2018, available online: https://www.nber.org/system/files/working_papers/w24421/w24421.pdf.

5. TECHNOLOGICAL IMPACT ON DEHUMANISATION OF WORK

Besides posing a threat for general employability, new technologies are also responsible for dehumanization of work, i.e. treating employees as if they were tireless and highly efficient machines without any unnecessary emotions and human needs. As a result, workers perceive themselves in working environment as a mere instrument, a number or as a part that can be replaced.⁹⁰ There are several scientifically proven managerial patterns that lead to it,⁹¹ some of them relevant from labour law standpoint. First of all, fragmented, repetitive and dull tasks directly influence the quality of work but they also trigger the sense of alienation (*rectius*: meaninglessness) from worker's human existence. Secondly, mechanistic dehumanization⁹² is responsible for likening the human workers to machines and denying qualities such as emotion, individuality and warmth for the sake of efficiency and regularity. Technological devices implemented in the execution of work can ignore said human qualities on worker's site. What is more, technologically enhanced workplace can be deliberately constructed to cancel human attributes of those who execute managerial prerogatives, be it the employer, managers or supervisors. Accordingly, three factors will be taken in consideration for further analysis – concept of meaningful work; measuring and monitoring of work performance with dehumanizing implications; and automated algorithmic management suppressing employer's empathy in work relations.

⁹⁰ Inside infamous Amazon warehouses the work is organized digitally as algorithms assign tasks and surveil workers. Those are well aware of the uneven nature of their relation with technology, as one Italian Amazon manager has put it: *'Technology codifies, understands and manages. But the real machine is the human: everything is done manually'*. DELFANTI, A.: *Machinic Dispossession and Augmented Despotism: Digital Work in an Amazon Warehouse*. In: *New Media & Society*, 2019, Vol. 17, No. 1, p. 2.

⁹¹ SAINZ, M., DELGADO, N., MORIANO, J. A.: The Link Between Authentic Leadership, Organizational Dehumanization and Stress at Work. In: *Journal of Work and Organizational Psychology*, 2021, Vol. 37, No. 2, pp. 85–92.

⁹² As opposed to animalistic form of dehumanization in which humans are denied qualities that are considered to distinguish them from animals – qualities such as refinement, self-control, intelligence, and rationality. This form of dehumanization is often discussed in the context of ethnicity, race, and related topics such as immigration and genocide. HASLAM, N.: Dehumanization: An Integrative Review. In: *Personality and Social Psychology Review*, 2006, Vol. 10, No. 3, pp. 252–264.

5.1. Meaningfulness of work and its appeal for legal science

Meaningfulness of work, although popular research topic among psychology and management scholars,⁹³ does not get attention from labour law experts due to its perception as inherently personal attitude depending on individual ethics of subjects concerned. Such approach would see meaningful work as a result of inner psychological quest of each employee rather than something that can be supplied by an organization, its leaders or through job design initiatives.⁹⁴ This theory analyses meaningfulness of work as purely dependent on individual character traits, capabilities, experiences and preferences and thus releases employers from burden of creating the meaning within the work organization.

However, most available definitions of meaningful work consider it miscellaneous construct that generally entails at least some of following features: pursuing a purpose, autonomy, social relationships, recognition, self-esteem, exercising skills and self-development.⁹⁵ For the sake of this argument all of aforementioned attributes contribute in equal parts to the sense of meaningfulness. While some of them are traditionally studied by organisational psychology as highly subjective attitudes, others fall under more objective theories. Objectively valued work-related features of meaningfulness are autonomy, exercising skills, self-development and under certain circumstances also social relationships. Arguably they could constitute suitable subject-matter for labour law in the extent they influence the working conditions and the sense of alienation of worker.

Various scientific analyses have successfully pointed out the link between intrinsic quality of work and experienced meaningfulness. Therefore, according to some scholars,⁹⁶ meaningful work is found to be associated with the content of working tasks – i.e. skill variety, task significance and task iden-

⁹³ For an extensive summary on literature in this field see BAILEY, C., YEOMAN, R., MADDEN, A., THOMPSON, M., KERRIDGE, G.: A Review of the Empirical Literature on Meaningful Work: Progress and Research Agenda. In: *Human Resource Development Review*, 2019, Vol. 18, No. 1, pp. 83–113.

⁹⁴ LIPS-WIERSMA, M., MORRIS, L.: Discriminating Between ‘Meaningful Work’ and the ‘Management of Meaning’. In: *Journal of Business Ethics*, 2009, pp. 503–505.

⁹⁵ Interesting perspective on how these aspects of meaningful work can change with introduction of robotics in a workplace is offered by SMIDS, J., NYHOLM, S., BERKERS, H.: Robots in the Workplace: A Threat to – or Opportunity for – Meaningful Work? In: *Philosophy & technology*, 2019, Vol. 33, pp. 503–522.

⁹⁶ HACKMAN, J. R., OLDHAM G. R.: *Development of the Job Diagnostic Survey*. In: *Journal of Applied Psychology*, Vol. 60, No. 2, 1975, pp. 159–170.

tity, as well as with level of autonomy of workers. Such affirmation goes hand in hand with abovementioned claims about importance of exercising skills, self-development and autonomy due to their reference to the same core issue – harmful nature, in the long run, of routine and tedious working tasks.

Many have criticised work organisation systems exposing workers to tedious and repetitive tasks. Adam Smith famously suggested that *‘the man whose whole life is spent in performing a few simple operations, of which the effects are perhaps always the same, or very nearly the same, has no occasion to exert his understanding or to exercise his invention in finding out expedients for removing difficulties which never occur. He naturally loses, therefore, the habit of such exertion, and generally becomes as stupid and ignorant as it is possible for a human creature to become’*.⁹⁷ Rawls reckoned that *‘monotonous and routine occupations are deadening to human thought and sensibility’*.⁹⁸

The introduction of new technology in working process has always raised question whether it generates positive or negative outcome with regards to task content. Rather techno-deterministic assumption that technological progress would save men from repetitive, tedious and unskilled work must not be taken for granted. According to Eurofound’s recent findings digital technologies are paving the way to gradual decrease of employment in routine jobs while simultaneously increasing share of routine tasks within the jobs.⁹⁹ Statement that technology will eliminate routine work thus could be hold true and untrue at the same time:¹⁰⁰ while true when referring to totality of jobs with routine content, it is in contrast with an increase in the amount of repetitive and standardised tasks people actually do in those and other jobs. The latter phenomenon will be called ‘routinization’ for the purpose of this monograph.

On that last note, new academic discourse was born recently on effects of automating routine tasks affecting job’s meaningfulness.¹⁰¹ It has been shown

⁹⁷ SMITH, A.: *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776, pp. 38–39. Available online: http://files.libertyfund.org/files/220/0141-02_Bk.pdf.

⁹⁸ RAWLS, J.: *A Theory of Justice*. Harvard: Harvard University Press, 1971, p. 529.

⁹⁹ BISELLO, M. et al.: *How Computerisation Is Transforming Jobs: Evidence from Eurofound’s European Working Conditions Survey*. Seville: European Commission, 2019, pp. 39–40.

¹⁰⁰ Statements that are simultaneously true and untrue are called ‘dialetheisms’. See: <https://plato.stanford.edu/entries/dialetheism/>.

¹⁰¹ So far the only research paper focusing on this topic is STAABY, A., HANSEN, K., GRONLI, T.: Automation of Routine Work: A Case Study of Employees’ Experiences of Work Meaningfulness. In: *Proceedings of the 54th Hawaii International Conference on System Sciences*, 2021, pp. 156–165.

in the emerging literature how robots substituting workers in performing repetitive manual tasks have profound impact on perception of work meaningfulness.¹⁰² However, the effects of automation are not straightforward. Automation of routine manual work with robots may create opportunities for major work autonomy, accelerate skill development with positive consequences for self-esteem and self-development. Conversely, in some cases it can increase the workload or even lead to more routine work and sense of alienation. Findings of both positive and negative influences are present, proving once again the basic neutrality of technology but not neutrality of its deployment. How it is used and with what consequences matters in order to evaluate its impact on human workers. This research seems perfectly in line with well-known argument that computerisation facilitates the automation of tasks and jobs involving a high degree of routine while it serves only to complement workers executing nonroutine, creative and complex tasks.¹⁰³

However, connection between work meaningfulness and automation of manual routine work represent only partially valid finding, in that it covers only one imaginary quarter of all the work task typology. In order to analyse the technology impact on work tasks, some authors found it useful to divide them into four ideal categories and two subcategories: manual - cognitive tasks and routine - nonroutine tasks.¹⁰⁴ With regards to this taxonomy scholarly literature should open a discourse not only on routinization of manual routine tasks affecting their meaningfulness, but also other three – cognitive routine tasks, manual nonroutine tasks and cognitive non routine tasks. Albeit the risk of routinization decreases in this order, current speed of technological development presupposes turning more complex human tasks into routine tasks, creating the vicious circle of ever new automatable jobs. Moreover, we cannot rule out the possibility that work will be organised in such a way to maximise profit or for reasons of market efficiency. What remains is the question how should the legislator address the increase of the meaningless work, its distribution among workers, and potential compensation mechanisms for enduring it.

¹⁰² Ibidem, p. 164.

¹⁰³ AUTOR, D. et al.: The Skill Content of Recent Technological Change: An Empirical Exploration. In: *Quarterly Journal of Economics*, Vol. 118, No. 4, p. 1322.

¹⁰⁴ See, for instance ACEMOGLU, D., AUTOR, D.: *Skills, Tasks and Technologies: Implications for Employment and Earnings*. Working Paper, National Bureau of Economic Research, 2010.

All aforementioned research regarded meaningful work from psychology, sociology or human resources standpoint. Although labour law could attain to interdisciplinary research providing empirical proofs on technological tools affecting quality of work in terms of task routinization, above described concept of meaningfulness would still provide unsatisfactory basis for a legislator to operate with. For such concept to become tangible in legal perspective it ought to resolve two conditions beforehand: the need to justify state intervention in the matter and a degree of such intervention.

The first issue has been partially covered above when meaningfulness was attributed both subjective and objective site. On the one hand the meaning of work could be seen as individual and/or social gratification and consequently differ from one person to another. On the other hand the meaningfulness comprehend an objective value as well, which has been ascribed to areas of autonomy and task content and quality. Such features are easily measurable and could provide a solid foundation for legislator's intervention. However, in order to create a plausible legal concept of meaningful (subordinated) work there is still one element missing from the equation – the alienation, or rather its absence. Worker's impossibility to express himself through work process translates into sense of alienation.¹⁰⁵ Routine work makes it difficult to manifest worker's individuality and values through working process, creating a sense of alienated, meaningless work. Here is where the theory of meaningful work as a legal concept meets Vardaro. Human workers lose awareness of the employer's organization and the responsibility for what happens, thus effectively delegating to technology the ability and the possibility of analysis and choice.¹⁰⁶ Meaninglessness touches the same personal area of worker as the concept of existential alienation coined by Vardaro, in that it affects the perception of worker's time at work as a mere presence.¹⁰⁷ And since the technologically enhanced concept of subordination contains also this negative existential aspect it would mean that the vast majority of employment

¹⁰⁵ Marx pointed out the need for worker to objectify his individuality, to see manifestation of his life during the activity. MARX, K.: *Marx's Notebook Comments on James Mill, Elements d'économie politique*, 1844, available online https://www.marxists.org/archive/marx/works/download/Marx_James_Mill.pdf.

¹⁰⁶ DI CARLUCCIO, C.: *Lavoro e salute mentale dentro e fuori l'istituzione*. Editoriale Scientifica, 2022, p. 302. The Author pinpoints such processes also beyond the workplace, sweeping over the general freedom of persons and the society as a whole, until it reaches 'the big alienation'.

¹⁰⁷ VARDARO, G.: *Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro*. In: *Politica del Diritto*, 1986, No. 1, p. 92.

would be subject to the loss of meaning. So, in conclusion, if only alienated, meaningless work is available in the labour market, legislator should definitely embrace the issue with such degrading societal consequences in order to establish a 'truly human labour regime'.¹⁰⁸

When it comes to a degree to which the legislative power should intervene in a matter, legal philosophy scholarship offers some suggestions as for the direction the discourse should take.¹⁰⁹ Accordingly, the regulatory efforts could be translated to the right to access to meaningful work, the right to meaningful work and meaningful work as a minimal standard.

The first hypothesis would limit the normative activity to a simple provision of fair opportunity to gain access to a meaningful work. In order to understand what would it mean in practice, one could draw from experience of ILO agenda for decent work. The guiding concept of a programmatic framework called decent work was presented for the first time in the report of ILO Director-General Juan Somavia addressed to the 1999 International Labour Conference with the proposal of a new integrated approach to ILO's activities.¹¹⁰ The concept should have unified the work of ILO under the perspective of a common purpose and a shared interest among the Member States and ILO itself in improving the situation of human beings throughout the world of work. At the time of the presentation of the then new concept, ILO stated that decent work, promoted as a global goal with regional challenges, has as its main purpose to achieve productive work in conditions of freedom, equality, security and human dignity, in complete compliance with ILO's mandate set forth in the Declaration of Philadelphia. However, since its inception in 1999 ILO failed to formulate a precise concept that correlates with the term decent work. It could be argued that the conceptual vagueness of a definition is partially responsible for its success and longevity as a slogan for public policies. At any rate, only one way leads to the core of the concept

¹⁰⁸ Reference is to French translation of 'humane conditions of labour' included as a goal in the preamble of ILO Constitution from 1919. SUPLOT, A.: Labour Is Not a Commodity: The Content and Meaning of Work in the Twenty-First Century. In: *International Labour Review*, 2021, Vol. 160, No. 1, p. 5.

¹⁰⁹ The choice of a foundation for this discourse fell to the essay of political philosophy that foresee meaningful work as access to employment, right, or standard. ROESSLER, B.: Meaningful Work: Arguments from Autonomy, Symposium: Political Philosophy at Work. In: *The Journal of political philosophy*, 2012, Vol. 20, No. 1, pp. 92–93.

¹¹⁰ Report of the Director-General Juan Somavia: *Decent work*, 87th Session of International Labour Conference, Geneva, June 1999, available online: <https://www.ilo.org/public/english/standards/relm/ilc/ilc87/rep-i.htm>.

of decent work and it is through the four strategic objectives linked to the notion, namely: the protection of the fundamental principles and rights at work, the generation of quality employment, the expansion of social protection and the adoption of social dialogue. In particular the second objective – creating the quality employment – correlates with the message embedded in the access to meaningful work. Just as decent work, meaningful work would represent the goal to achieve, the necessary statement in the social policy that everybody should have equal opportunity for meaningful work in society.

The second and third hypothesis would call for traditional regulatory practise so that meaningful work would turn into a right or a minimal standard contained in a legislative act.

In conclusion, are we able to determine the relationship between meaningfulness and technology at work? The assumption that *‘to work means to humanize the one through whom the work takes place’*¹¹¹ seems to gain the reverse meaning with regards to new technology in the workplace. Instead of humanizing the worker by giving him the space for autonomy and freedom while carrying out the tasks, robots and algorithms seem to standardise the job’s content and reduce the human role to a bare minimum. The risk of task routinization thus could be interpreted in the light of heideggerian theory about technological thinking. Instead of seeing technology as a threat itself, Heidegger worried about technical mode of thinking about the world.¹¹² As already argued, he assumed that technology as ‘a means to an end’ represent a logical, albeit misleading definition, since it fails to capture its essence. On the other hand he envisioned technical, technological, or calculative thinking behind the ever new, ever more promising and more economic possibilities. Heideggerian technological thinking reveal itself in the way the automation increases in the workplace and by turning more and more human work into marginal repetitive tasks to complete the work of the machine. Following this logic, not technology but technological thinking is responsible for dehumanization of work.

¹¹¹ YEOMAN, R.: Conceptualising Meaningful Work as a Fundamental Human Need. In: *Journal of Business Ethics*, 2014, Vol. 125, No. 2, p. 236.

¹¹² For the major critique of calculative thinking see HEIDEGGER, M.: *The Question Concerning Technology and Other Essays*. New York & London: Garland publishing, 1977.

5.2. Quantifiable worker

In addition to routinization of work and the loss of meaningfulness, another aspect of work's dehumanization is observed in the frenetic performance assessment. Measuring worker's productivity consists of turning a very human work performance into what is seemingly a mere collection of data. It is anything but a new phenomenon. In order to streamline the production, twentieth century Taylorism used monitoring of employees to determine redundant motions and tasks in order to complete the job. Then it implemented allegedly scientific methodology to measure the best possible way certain job could be performed in terms of speed and precision. Once the results of measurements were available they were destined to be studied by management so that the detailed knowledge of the production process could pass from workers to management.¹¹³ Similar ways of quantifying of employee's performance are being executed in modern workplace. Infamously notorious Amazon warehouses in U.S.A. track down every movement of their blue collar workers and clock time spent on and off tasks.¹¹⁴ Since workers' individual working tools are logged into a centralised system, management can use generated data to set ever higher pace based on average performance. But the quintessential model of worker quantification could be found in work organised by digital platforms. On-demand workers and crowdworkers are being constantly evaluated through the user profile on a web site or an app that serves both as a main working tool and reservoir of their performance data. In addition the platforms make use of customer satisfaction ratings that constitute a form of external control of work performance with dubious relevance.¹¹⁵

So what has changed over time in workers' performance monitoring and why does it matter? Human skills optimization (*rectius*: *Rationalisierung*) is still considered an ultimate ambition, whatever are the methods used to reach it. Taylorism used scientific approach to increase efficiency of produc-

¹¹³ STONE, K. W.: *From Widgets to Digits. Employment Regulation for the Changing Workplace*. Cambridge: Cambridge University Press, 2004, pp. 27–50.

¹¹⁴ DELFANTI, A., RADOVAC, L., WALKER, T.: *The Amazon Panopticon, A guide for Workers, Organizers & Policymakers*. UNI Global Union report, 2021.

¹¹⁵ NUZZO, V.: Customer satisfaction e contratto di lavoro subordinato. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2020, Vol. 165, pp. 35–38, suggesting irrelevance of customer's subjective perceptions regarding received service due to their implications only as a mere opinion and not as a valid factual evaluation.

tive process¹¹⁶ and its soviet counterpart – Stakhanovism – consisted in bottom up rationalization lead by workmen, yet still resulting in greater productivity.¹¹⁷ Both resulted in fragmentation of work duties and deskilling for the majority of workers, whereas the aspect of innovation and ideation was reserved to leading forces in the factories – in Taylor’s case engineers and managers, in the other case the members of Stakhanovite movement. But, while Taylor’s engineers and managers dominated the technology, members of Stakhanovite movement were limited to mastery of specific technology in one factory unit, and thus did not possess *la padronanza della tecnica* that Vardaro ascribed to classical entrepreneur type. However, besides above-mentioned differences between them, both historical approaches to measuring of worker’s performance served as ‘primitive’ forms of quantification of human work.

The main difference between old and new methods lies in data availability. What once was a subject-matter of prolonged studies on selected groups of workers today concerns totality of workforce with results of various measurements instantly at disposition of employer. Algorithmic control can be more comprehensive in terms of which work behaviour is being monitored, and more instantaneous in terms of providing real-time reactions on the basis of immediate data input.¹¹⁸

Moreover it leads to another striking feature of the new technologies involved in measurements – the shift from human evaluation to technological evaluation. That does not imply lack of technological tools when measuring performance in the past – for example Taylor’s engineers used a scale to determine the optimal weight for a shovel, a tape measure to decide upon the ideal thickness for transmission belts and a stopwatch to establish their ideal

¹¹⁶ STONE, K. W.: *From Widgets to Digits. Employment Regulation for the Changing Workplace*. Cambridge: Cambridge University Press, 2004, pp. 27–50.

¹¹⁷ FERRI, S.: *Sullo stakhanovismo*. In: *Rivista di storia contemporanea*, 1977, Vol. 6, No. 3, pp. 444–445.

¹¹⁸ Algorithms have changed the control dynamics in the workplace. Other organizational system allowed the employers to exercise their prerogatives through technologies – workers have been directed to do particular tasks at particular rate at the pace of the assembly line, and they have been evaluated by recording the frequency and length of the work tasks, worker productivity and accuracy (technical control). Different systems relied on formal rules and procedures to guide worker’s behaviour, for instance through incentives and penalties (bureaucratic control). As opposed to algorithmic control, both such systems were slower and more limited and contained at least some direct human supervision. See KELLOG, K. C. et al.: *Algorithms at Work: The New Contested Terrain of Control*. In: *Academy of Management Annals*, 2020, Vol. 14, pp. 4–7.

speed.¹¹⁹ Even if technology used in the past was also criticised for creating impersonal and dehumanized workplace, it still included human decisions and allowed workers to appeal to a human decision-maker. Devices were designed to assist human managers in overall evaluation process, whereas current technology is able to carry out alone the whole assessment.

In order to demonstrate some of these theoretical claims it shall be interesting to do a focused study on a somewhat specific employment relationship, like the one between professional athletes and sporting organizations. The reason for this unusual choice is its specific legal discipline that excludes sport workers from protective discipline against employer's abusive monitoring practices. The measuring of worker's productivity made a giant leap in employment of sport professionals. Many sporting organizations are monitoring the performance of their athletes via wearable technological devices, often collecting also biometric or other sensitive data. What we are dealing with here is an extreme case of prolific technology deployment and simultaneously (almost) inexistent legal protection of workers due to specific nature of their work performance. This way every aspect of current workers monitoring is underlined in a scenario of deliberate legal vacuum, so that it can act as a simulation of an 'laboratory prototype'.

The first decisive question is whether the sports organization can control and coordinate a professional athlete's performance. If we presume that the goal of any sports organization is to achieve the best possible sports results, then we can state that the above-mentioned defining feature of subordinate work is undoubtedly fulfilled in the relationship between the athlete and the organization. However, professional sport goes even further in this respect. Metrics such as distance, speed, acceleration, metabolic consumption are being recorded live via GPS devices worn by athletes during matches, races and/or training. All the intrinsic aspects of the sportsman performance are deliberately under employer's scrutiny – unlike in any other standard employment relationship (as for example, in Italy, where, pursuant to Article 4 of the Law No. 300/1970 'Workers' Statute', the work performance cannot be monitored via remote control tools without prior trade union agreement or ministerial authorization and in any case only for organizational and production needs, for work safety and for the protection of company assets. Italian legislative framework regarding the work arrangements of sportsmen rules

¹¹⁹ STONE, K. W.: *From Widgets to Digits. Employment Regulation for the Changing Workplace*. Cambridge: Cambridge University Press, 2004, p. 34.

out the application of Articles 4 and 5 of the Workers' Statute on the sporting employment contracts¹²⁰).

National legal exemptions aside, compliance with General Data Protection Regulation (Regulation (EU) 2016/679) ('GDPR') is still required. Especially when the performance analysis includes collecting special category data under Article 9 of the GDPR, such as health, biometric or other sensitive data – for example information about athlete's heart rate, disposition to cardiovascular problems, diet or a photo of the athlete's face. Such practice could be considered legitimate if the employee has given his explicit consent¹²¹ or if the sports organisation is able to justify processing of those data for the purposes of preventive or occupational medicine, for the assessment of the working capacity of the employee, or medical diagnosis.

Once the data are collected they should be evaluated. In the matter of who or what should be responsible for this task when assessing performance of employed athletes have arisen few interesting issues. First of all, employer's assessment relies on a quantity of data so extensive that it is acquirable only through technology. In order to determine what needs to be further optimised, employers harvest worker's data as inputs for algorithms. Then, depending on algorithm deployed by a sport organization, data are either judged solely by human managers or they are directly handled to them in a form of partially executed evaluation.¹²² Amidst numerous perks and per-

¹²⁰ Article 26 of the Legislative Decree No. 36/2021 that abrogates Law No. 91/1981, 'Rules on relations between clubs and professional sportsmen'.

¹²¹ With reference to employee's consent the legal regulation here is based on the logic of free disposition of an individual with his personality which also includes his personal data. The advantage of this legal title of processing is above all the comprehensibility and clarity it brings to the employer. An employer who obtains consent from his employees to process their biometric data would know exactly for what purpose, to what extent and for how long he can process this data. Giving consent represents, however, several pitfalls. First, the use of consent as a legal title for the processing of personal data in employment is generally undesirable due to an imbalance of power between the employee and the employer. The second, rather practical disadvantage is the fact that the employee has the right to withdraw his or her consent to the processing at any time pursuant Article 7 paragraph 3 GDPR. The employer would thus be effectively forced into an impractical double-track system if some employees followed biometric processes and some non-biometric ones. Thus, by its nature, consent seems not only an illegitimate title for the processing of employees' biometric data due to their subordinated position, but also an unreliable title due to its volatility and variability. See 29 *Working Party Guidelines on consent under Regulation 2016/679*, 2018, WP259, rev.01., available online: https://ec.europa.eu/newsroom/article29/document.cfm?action=display&doc_id=51030.

¹²² Like, for instance, in the case of Italian algorithm PlayeRank capable of independent assessment of crucial moments in a game. PlayeRank analyzes everything that has happened

ils of algorithm deployment in football the one to mention should be its beneficial effect on the injury prevention. Technology is able to analyse the stress state of an athlete and alert the athletic trainers about the possibility for that him to contract a muscle injury in a short term.¹²³ The same type of data, however, are used to predict the longevity of an athlete combining various biometric data, information about age and previously sustained health problems. Janus-faced algorithm could therefore help to reduce injury rate of sportmen and simultaneously predict future decline of performance with negative impact on his employment prospects or retribution.

Secondly, even external evaluation of sport performance on the basis of available data could have repercussions on employment relationship. As per custom, Italian newspapers periodically publish football players ratings based on opinions of human judges. Albeit researchers have proven that human evaluation process is generally flawed and biased compared to a hypothetical use of an algorithm,¹²⁴ this particular analysis belongs to humans for the time being.

Curious connection could be drawn between the database of football management simulation games and a real life performance ratings of football players. Football Manager, one of the most popular sports management video game, simulates a manager's career with an emphasis on data analysis and number crunching, especially the football match scenario and the football players' quantified characteristics. The claimed realism of the game is therefore based on the reliability of a constantly-updated database of hundreds of thousands of real football players.¹²⁵ The players are supposed to be

during the match and learns through machine-learning technique which are the events that characterize the winning teams of each match. In the end, having obtained the value of each event, be it positive or negative, PlayeRank manages to summarize the performances of all the players in a single number rating. See ROMEO, G.: Un algoritmo per l'azienda calcio. In: *Il Sole 24 Ore*, 2018, available online: <https://www.ilsole24ore.com/art/un-algoritmo-l-azienda-calcio-valutare-giocatore-come-se-fosse-un-azione-AEil1kzeF>.

¹²³ SYNREM, W.: Influence of Technology on Sports: Policy Based Perspective. In: *NUALS Law Journal*, 2019, Vol. 13, pp. 53–54.

¹²⁴ PAPPALARDO, L. et al.: Human perception of performance. PlayeRank: Data-driven Performance Evaluation and Player Ranking in Soccer via a Machine Learning Approach. In: *ACM Transactions on Intelligent Systems Technology*, 2019, Vol. 10, No. 5, article No. 59.

¹²⁵ Database of Football Manager is actually crowdsourced – it is co-built by a community of hardcore gamers from all around the world. As a consequence, this form of free digital labour of the volunteers is responsible for extremely accurate and rich bank of data. HOCQUET, A.: Football Manager: Mutual Shaping between Game, Sport, and Community. In: *Journal of Media Studies and Popular Culture, Special Issue: Exploring the Frontiers of Digital Gaming: Traditional Games, Expressive Games, Pervasive Games*, 2016, Vol. 6, p. 34.

described as accurate quantitative representations of real players, thanks to their characteristics (not only speed or strength, but even personal traits like ambition or professionalism) translated into numbers. Since it has been able to successfully predict real-life success of many previously unknown young players (one example for all – Lionel Messi) database gained the commercial value. Some of the important football clubs has acquired the right to use the database before its annual release in order to search for the new talents.¹²⁶ Therefore it became a generally recognised evaluation tool for future employers when talent-scouting, directly influencing hiring prospects and market price for both young as well as acclaimed players. Moreover, the popularity of Football Manager rating system raised to the point that it is actually used when creating real football metrics to evaluate the players. Currently the performance of the football players is assessed by a twofold mechanism – firstly through the real life parameters of a human player and secondly via his quantified digital avatar version.

5.3. Algorithmic employer

Directly linked to the last allegations concerning human versus technological evaluation of workers' performance is the issue of dehumanization of employer in employment relationship.

As a consequence of technological advancements employer does not only lose his titanic character (as a sole master of technology and organiser of production process), he even loses his human traits. Use of AI and machine learning algorithms in the workplace day to day management has the potential to eliminate employer's human supervision.¹²⁷ The choice to deploy new technology might still be his own, but in the moment he does it he loses his supremacy over it.¹²⁸ Nevertheless that does not mean that his position to-

¹²⁶ Famously the first football club to have ever done so was Everton in 2008. See STUART, K.: Why Clubs Are Using Football Manager as a Real-life Scouting Tool. In: *The Guardian*, 2014, available online: <https://www.theguardian.com/technology/2014/aug/12/why-clubs-football-manager-scouting-tool>.

¹²⁷ De Stefano speaks about 'a form of automation of middle-managerial and managerial roles'. DE STEFANO, V.: Negotiating the Algorithm: Automation, Artificial Intelligence, and Labor Protection. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1, p. 30.

¹²⁸ According to Vardaro, even when he – the employer – is convinced about his supremacy over technology and he sees it as a mere instrument for his entrepreneurial objectives, he actually ends up under technological dominion. Technology becomes his inevitable destiny in hedeggerian sense. VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, pp. 119–120. For more recent

wards employee has weaken. On the contrary, managerial decisions become more difficult to decipher when coming from an algorithm. Lack of transparency behind the ‘mind’ of an algorithm leads to even more troublesome criticism towards unfair or biased managerial orders or decisions.¹²⁹ This can have repercussions in further deepening the asymmetry between the parties of work-related contractual relationship.

Anyhow, management-by-algorithm can improve to some extent the objectivity and accuracy of employer’s decision, especially by using machine-learning algorithms that rely on searching patterns in human behaviour. The principle on the basis of machine learning is simple – algorithm is being fed by a certain number of data until it develops its own system of reasoning.¹³⁰ So in the best case scenario the algorithm will be able to find patterns that are either invisible to human eye or harder to spot – for instance it can be able to predict risk of suicide based on use of word ‘ibuprofen’ rather than ‘suicide’, hence with drastic time-saving results when answering the individuals on a crisis helpline.¹³¹ The worst case scenarios include the risk of biased decisions and discrimination and will be treated separately in other parts of this monograph. Then there is a middle category of allegedly harmless algorithm-based management that is able to guarantee the most objectivity and rapidity – this is the one that deserve our attention because it encompasses technodeterministic approach with potentially dehumanising effects on the workplace.

Human managers are capable of empathy, filtering of what is senseless or too harsh, finding the exceptions to the rule. Excluding human empathy from the employer’s interaction with employees entails the risk of distortion of justice in the workplace. Unempathetic application of any reasonable rules can turn them into unfair and arbitrary, following the logic of Cicero’s

contribution extending this thesis in terms of irrelevance of supremacy over technology as opposed to importance of supremacy over market and social relations network, see RAZZOLINI, O.: La nozione di subordinazione alla prova delle nuove tecnologie. In: *Diritto delle Relazioni Industriali*, 2014, No. 4, XXIV, p. 3.

¹²⁹ Opacity of algorithms is usually attributed to three main factors: intentional secrecy, required technical literacy and machine-learning opacity. BURRELL, J.: How the Machine ‘Thinks’: Understanding Opacity in Machine Learning Algorithms. In: *Big Data & Society*, 2016, Vol. 3, No. 1, pp. 1–12.

¹³⁰ We can speak about implicit criteria, since they are conclusions drawn from algorithm’s experience with data. JEAN, A.: *Nel paese degli algoritmi*. Neri Pozza Editore, 2021, pp. 82–83.

¹³¹ GUPTA, A.: *Detecting Crisis: An AI Solution*, *Crisis Text Line Blog*, 2019, available online: <https://www.crisistextline.org/blog/2018/03/28/detecting-crisis-an-ai-solution/>.

summum ius summa iniuria. Even the draft of new EU Regulation on artificial intelligence, when acknowledging that ‘AI intended to be used for making decisions on promotion and termination of work-related contractual relationships, for task allocation and for monitoring and evaluating performance and behaviour of persons in such relationships’ represents high risk for health and safety and fundamental rights of persons,¹³² recognises the perils of inhuman bosses. Execution of managerial prerogatives, if not supervised by humans, can contribute to unfair workplace practices that are difficult to appeal against.

In spite of awe that paralyses most of the employees and may cause submissive behaviour even in front of irrational or unfair algorithmic decisions, there is a scientifically proven resistance in many individuals enabling them to contradict and disobey when necessary. Famous Milgram experiment showed that majority of people tend to behave as ordered when under pressure of some situational factors (like, for instance, fear of negative work-related consequences fuelled by imbalance between parties in an employment relationship), but simultaneously has proven the existence of the hard core of sensible, thinking individuals willing to stand against the authority. In fact, during to the experiment roughly thirty-five percent of participants has deemed it important to resist direct orders to send painful electric shocks to another participant who had failed to answer correctly the test questions, even if they were told the electricity will not cause any harm to the other. The resting two thirds of participants not only carried out experimenter’s orders, they were also ‘proud of doing a good job’.¹³³ Ordinary interpretation of Milgram experiment implies that people in general are prone to do their jobs as asked or ordered, whatever are the consequences. That said, the backward reading of its results reveals the opposite tendency to refuse morally unjust, illegitimate or unlawful orders.¹³⁴

¹³² Under Annex III, p. 4 (b) of the Proposal for a Regulation of the European Parliament and the Council laying down harmonised rules on artificial intelligence (Artificial intelligence Act) and amending certain Union legislative acts. Available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0206>.

¹³³ For the full account on the experiment from its author’s standpoint, see MILGRAM, S.: *The Perils of Obedience*. Harper’s, 1973, pp. 66–77.

¹³⁴ APPEL, J. M.: Rethinking the Infamous Milgram Experiment in Authoritarian Times. In: *Scientific American*, 2019, available online: <https://blogs.scientificamerican.com/observations/rethinking-the-infamous-milgram-experiment-in-authoritarian-times/>.

Ergo, thoughtless processes and lack of empathy are the weak spots in the management-by-algorithm.¹³⁵ Studies show the negative impact of digital technologies on social aspect within jobs, too.¹³⁶ Robots and devices equipped by machine-learning technologies and AI tools pose a further risk of dehumanization of the workplace, especially tangible during the worker-technology interaction.¹³⁷ It could be argued that it is the result of organizational decisions taken by human managers while new technologies act solely as the vector of dehumanizing practices. Dehumanizing attitude is often seen as economically acceptable or even necessary from the employer's viewpoint to increase productivity and lower costs. There are humans behind algorithms, but they can deliberately become unreachable to workers. The obscure nature of algorithms conceals potentially harmful employer's strategies and jeopardises contestation. One of its most striking signs is how it affects the expressing workers' discontent when fighting for better working conditions. Forming the unions and collective bargaining becomes a difficult endeavour against automated decision-making processes.¹³⁸ Hence, one could reckon that current regulation of management-by-algorithm should be considered a form of dehumanizing organization, or even an abusive supervision.¹³⁹

¹³⁵ Some authors refer to unempathetic computing as 'algorithmic cruelty', GRAY, M. L., SURI, S.: *Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass*. Houghton Mifflin Harcourt, 2019, pp. 77–78.

¹³⁶ BISELLO, M. et al.: *How Computerisation Is Transforming Jobs: Evidence from Eurofound's European Working Conditions Survey*. European Commission, 2019.

¹³⁷ DE STEFANO, V.: Negotiating the Algorithm: Automation, Artificial Intelligence, and Labor Protection. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1, p. 22.

¹³⁸ According to some authors, when striking, workers could choose to simply disengage automated systems, which would only represent the unlawful act of sabotage. BELLACE, J.: The Changing face of Capital: The Withering of the Employment Relationship in the Information Age. In: *Game Changers in Labour Law: Shaping the Future of Work*. Kluwer Law Intl, 2018.

¹³⁹ Even if the expression 'abusive supervision' in psychological literature refers to harmful behaviour displayed by human managers such as aggression and workplace abuse, the link can be drawn between individual abuse and organization as a source of harm and obstruction. CAESENS, G., NGUEYEN, N., STINGLHAMBER, F.: Abusive Supervision and Organizational Dehumanization. In: *Journal of Business and Psychology*, 2019, Vol. 34, p. 709.

6. ALGORITHMIC BIAS (NOT ONLY) IN THE ACCESS TO WORK

The use of AI technology – especially algorithms – in recruitment was supposed to revolutionise heavily biased area of human decision-making and consequently lead to inherently fairer and objective access to work. Human reasoning is filled with ‘bugs’ that sneaks in silently and unnoticed; when the time comes to make a decision, they present themselves under the form of distorted human judgment or random chance variability in decisions.¹⁴⁰ Social science refers to the former as unconscious bias – i.e. the state of unawareness concerning the mental shortcuts that are being used to process information.¹⁴¹ The latter psychological phenomenon is called ‘judgment noise’ and affects the human mind in a different way than unconscious bias, namely by subconsciously giving the weight to irrelevant or purely causal factors when forming the decisions, consequently causing the judgment inconsistency.¹⁴² Biased or otherwise distorted human decision-making causes different adverse effects also when applied in the negotiation phase preceding the work relationships.

The rise of algorithms in the recruitment initially seemed as an optimal technological remedy for human flaws. Algorithms are commonly understood as mathematical models that contain equations, constants, variables, conditions or assumptions, or to put it even more simply – as a recipe.¹⁴³ However, not all algorithms were created equal. The choice of their components can be carried out explicitly by the scientist developing the algorithm (resulting in so called rule-based algorithms); or it can be implicit as in the case of machine learning algorithms. The present distinction must not be taken for granted, inasmuch as it does not always show on a regulatory level, which entails consequences.

¹⁴⁰ HOLT, J.: Two Brains Running. In: *The New York Times*, 2011, available online: <https://www.nytimes.com/2011/11/27/books/review/thinking-fast-and-slow-by-daniel-kahneman-book-review.html>.

¹⁴¹ For more detailed analysis see, for instance, HOUSER, K. A.: Can AI Solve the Diversity Problem in the Tech Industry? Mitigating Noise and Bias in Employment Decision-making. In: *Stanford Technology Law Review*, 2019, Vol. 290, No. 22, pp. 318–323.

¹⁴² *Ibidem*.

¹⁴³ See in general JEAN, A.: *Nel paese degli algoritmi*. Neri Pozza Editore, 2021; the author strongly criticizes the popular comparison of algorithms to recipes, arguing that while algorithms cannot be compared to recipe, any recipe is in fact an algorithm.

Generally, European Union institutions seem to prefer the term artificial intelligence (AI) to the notion algorithm. Closer inspection of the initiatives embedded in the European digital strategy confirm the tendency to incorporate deployment of algorithms under wider notion of AI. The Communication on Artificial Intelligence for Europe vaguely describes AI as systems displaying intelligent behaviour by analysing their environment and taking actions with some degree of autonomy to achieve specific goals;¹⁴⁴ the concept incorporated in a White Paper on Artificial Intelligence describes it as a combination of data, computing power and lastly also algorithms; and homogeneous terminology is present as well in the newest contribution to the European policy in the matter – the infamous draft of new EU Regulation on artificial intelligence¹⁴⁵ (further only ‘AI Act’) – which, pursuant to Article 3 paragraph 1, characterises AI as *‘software that is developed with one or more of the techniques and approaches listed in Annex I and can, for a given set of human-defined objectives, generate outputs such as content, predictions, recommendations, or decisions influencing the environments they interact with’*. Despite the intent to provide a precise definition of AI system is made very clear in the recital 6 of the AI Act, in combination with the examination of Annex I recalled by the definition it exposes its all-encompassing character. Accordingly, falling under the notion of AI are typical machine learning approaches (including supervised, unsupervised and deep learning); both logic and knowledge based approaches (including knowledge representation, inductive logic programming, knowledge bases, deductive and inferential engines, symbolic reasoning and expert systems); and even statistical approaches, Bayesian estimation, search methods and optimization.¹⁴⁶

Regardless of the apparent linguistic choice, European legislator did not fail altogether to grasp the distinction between rule-based and machine

¹⁴⁴ Quoted from the EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. Artificial Intelligence for Europe*, 2018, available at: <https://eur-lex.europa.eu/legal-content/SK/TEXT/PDF/?uri=CELEX:52018DC0237&from=en>

¹⁴⁵ Proposal for a Regulation of the European Parliament and the Council laying down harmonised rules on artificial intelligence (Artificial intelligence act) and amending certain Union legislative acts.

¹⁴⁶ Ibidem, Annex I.

learning algorithms; such distinction starts to appear whenever the law casts the light on the discrimination issue.¹⁴⁷

Lately the concern relative to accuracy of algorithm's definition has been voiced by the national Council of State. In the case involving the exact technical definition of the notion of 'treatment algorithm' in the context of a national tender procedure for the supply of high-end pacemakers, the Council clarifies how the common and general notion of algorithm brings to mind '*simply a finite sequence of instructions, well defined and unambiguous, so as to be able to be performed mechanically and such as to produce a certain result*'.¹⁴⁸ Then it is observed by the same judge that such notion, when applied to technological systems, is inevitably linked to the concept of automation; consequently the degree and frequency of human intervention depending upon the complexity and accuracy of the algorithm that the machine is called upon to process. At this point the judge *de qua* outlines what is according to him the fundamental difference between two technologies: while rule-based algorithm is limited only to applying the software rules and pre-set parameters, more advanced algorithm contemplates machine learning mechanisms and creates a system that constantly elaborates new inference criteria between data and makes efficient decisions on the basis of these elaborations, according to a process of automatic learning. What is more, in contrast with current EU *acquis* only the latter is explicitly referred to by Council of State as AI.

Once the conceptual background has been established, a brief mention must be made about the non-discrimination law in access to work in general. Even if the use of algorithms represents relatively new element in recruitment, employer's practices discriminating against candidates due to a protected characteristic are not a new phenomenon and the law should know remedies for it.¹⁴⁹ With regards to its efficiency when addressing algorithmic bias, the legal distinction between direct and indirect discrimination¹⁵⁰ dwells

¹⁴⁷ See, in general, GERARDS, J., XENIDIS, R.: *Algorithmic Discrimination in Europe: Challenges and Opportunities for Gender Equality and Non-discrimination Law*. Brussels: European Commission, European Network of Legal Experts in Gender Equality and Non discrimination, 2020.

¹⁴⁸ Consiglio di Stato, 25 November 2021, No. 7891.

¹⁴⁹ The mention of all components of the vast body of legislation, both on European and national level shall be considered redundant for the purposes of this monograph. In general see BORELLI, V. S., GUARISO, A., LAZZERONI, L.: *Le discriminazioni nel rapporto di lavoro*. In: *La tutela antidiscriminatoria. Fonti, strumenti, interpreti*. G. Giappichelli Editore, 2019.

¹⁵⁰ The legislative distinction on European level first appeared in Council Directive 97/80/EC of 15 December 1997 on burden of proof in cases of discrimination based on sex. Cur-

in their ability to expose systematic rather than individual cases of discrimination. In particular, the advantage of indirect discrimination over direct one is that the former deals with rules or patterns of behaviour and thus can reveal underlying structural unfairness.¹⁵¹ However, in the light of the difficulties in tracking differential treatment based on protected grounds in black box algorithms, the Courts may use the notion of indirect discrimination as ‘a conceptual ‘refuge’ to capture the discriminatory wrongs of algorithms’,¹⁵² but that certainly does not preclude the possibility of classifying the algorithmic discrimination under the direct concept.¹⁵³

GDPR does not explicitly address the algorithmic bias; one can only read in recital 71 that ‘*the controller should use appropriate mathematical or statistical procedures for the profiling, implement technical and organizational measures appropriate to ensure, in particular, that factors which result in inaccuracies in personal data are corrected and the risk of errors is minimised, secure personal data in a manner that takes account of the potential risks involved for the interests and rights of the data subject and that prevents, inter alia, discriminatory effects on natural persons on the basis of racial or ethnic origin, political opinion, religion or beliefs, trade union membership, genetic or health status or sexual orientation, or that result in measures having such an effect*’. The obligation to establish such procedures falls under Article 22 paragraph 3, according to which the data controller shall implement suitable measures to safeguard the rights, freedoms and legitimate interest through a number of

rently all acts constituting non-discrimination legislative framework contain such distinction, where for direct discrimination should be understood a situation when one person is treated less favourably than another is, has been, or would be treated in a comparable situation on any of the grounds mentioned in various legal provisions. Indirect discrimination, on the contrary, occurs when an apparently neutral provision, criterion or practice would put persons having a particular protected characteristic (e.g. their religion or belief, disability, age or sexual orientation) at a disadvantage compared with others.

¹⁵¹ WACHTER, S., MITTELSTADT, B., RUSSEL, CH.: Why Fairness Cannot be Automated: Bridging the Gap between EU Non-discrimination Law and AI. In: *Computer Law & Security review*, 2021, Vol. 41, p. 15.

¹⁵² GERARDS, J., XENIDIS, R.: *Algorithmic Discrimination in Europe: Challenges and Opportunities for Gender Equality and Non-discrimination Law*. Brussels: European Commission, European Network of Legal Experts in Gender Equality and Non-discrimination, 2020, p. 11.

¹⁵³ In favour of classification as direct discrimination with regards to algorithm Frank used by Deliveroo platform in ruling of Tribunale di Bologna, 7 December 2018, order in the case No. 2949/2020, see SANTAGATA DE CASTRO, R.: Anti-discrimination Law in the Italian Courts: The New Frontiers of the Topic in the Age of Algorithms. In: *WP C.S.D.L.E. ‘Massimo D’Antona’*.IT, 2021, No. 440, pp. 13–18.

already described remedies: the right to obtain human intervention, to express his or her point of view and to contest the decision.

For the purpose of this study the emphasis should be put on the elusive character of algorithmic bias when machine learning procedures are implied in recruitment. Indeed, such technology presents undoubted advantages for the employer: in the selection processes the identification of the most suitable candidates is accomplished in a relatively shorter time than if the selection was made by an individual, and what is more, the technology ‘purifies’ the decision-making from unconscious human bias and noise.¹⁵⁴

A significant threat to the potential workers’ rights is represented by the fact that the advanced algorithms may come to discriminatory decisions regardless of their creators’ intention. This consequently results in a discrimination that is very difficult to detect¹⁵⁵ due to the complexity of algorithmic learning mechanisms. Compared to traditional forms of discrimination, algorithmic discrimination is more abstract and unintuitive, subtle and intangible.¹⁵⁶ In addition, human decision-makers tend to assume algorithms’ high accuracy and over-rely on them even despite the obvious illogicality of the decision.¹⁵⁷ Finding solutions to algorithmic bias is thus a challenge to the law for many reasons: it requires at least an elementary understanding of operation of these algorithms (the nature of which changes rapidly with technological progress); the very experience of the discrimination may diminish while simultaneously actual discriminatory practices are likely to increase, undetected;¹⁵⁸ and conceptually it represents a reiteration of the debate on the role of law in reducing disparities in society.

¹⁵⁴ ZAPPALA, L.: Informatizzazione dei processi decisionali e diritto del lavoro: algoritmi, poteri datoriali e responsabilità del prestatore nell’era dell’intelligenza artificiale. In: *WP C.S.D.L.E. ‘Massimo D’Antona’.IT*, 2021, No. 446, p. 10.

¹⁵⁵ BAROCAS, S., SELBST, A. D.: Big Data’s Disparate Impact. In: *California Law Review*, 2016, Vol. 104, No. 3.

¹⁵⁶ WACHTER, S., MITTELSTADT, B., RUSSEL, CH.: Why Fairness Cannot be Automated: Bridging the Gap between EU Non-discrimination Law and AI. In: *Computer Law & Security review*, 2021, Vol. 41, p. 10.

¹⁵⁷ This psychological phenomenon where humans either over-rely or under-rely on automated decision system is called ‘automation bias’ EDWARDS, L., VEALE, M.: Slave to the Algorithm? Why a Right to an Explanation Is Probably Not the Remedy You Are Looking for. In: *Duke Law & Technology Review*, 2017, Vol. 16, p. 45.

¹⁵⁸ WACHTER, S., MITTELSTADT, B., RUSSEL, CH.: Why Fairness Cannot be Automated: Bridging the Gap between EU Non-discrimination Law and AI. In: *Computer Law & Security review*, 2021, Vol. 41, p. 10.

Unintended discrimination can become a feature of an algorithm for a variety of reasons. The correct starting point before diving into the analysis of algorithmic ‘prejudice and bad behaviour’ ought to be breaking the assumption that algorithms will discriminate in ways similar to humans or with familiar patterns of discrimination.¹⁵⁹ It has been argued elsewhere¹⁶⁰ how the data/information dyad meaning shifted when collocated in the context of machine learning algorithms. The result of the algorithmic processing could depend on the data – abstractions of real-world entities not because they are signs that represent such entity, but because they are an ensemble of features or attributes, which, put together, will allow for a representation of such entity¹⁶¹ – which are used to train or develop the algorithm; discrimination will therefore often stem from unintended and unsuspected shortcomings of this data. In other cases the fault will be of pattern or connection found by the algorithm in order to make sense of the data and create an information. As a result, algorithmic discrimination poses a different set of risks – the risks that existing academic discourse is trying to address.¹⁶²

There are many ways discrimination can sneak into a hiring algorithm.

First of all it could be through an inappropriate determination of target attributes (in other words ‘correct results’) that the system is to achieve.¹⁶³ One can presume for instance that in the recruitment contest the target at-

¹⁵⁹ WACHTER, S., MITTELSTADT, B.: A Right to Reasonable Inferences: Rethinking Data Protection Law in the Age of Big Data and AI. In: *Columbia Business Law Review*, 2019, Vol. 2, No. 2.

¹⁶⁰ Famous definition: ‘information equals data plus meaning’ must be challenged and the data/information dichotomy revised in the light of new logic behind machine-learning algorithms. For an in-depth analysis see: GELLERT, R.: Comparing Definitions of Data and Information in Data Protection Law and Machine Learning: A Useful Way Forward to Meaningfully Regulate Algorithms? In: *Regulation & Governance*, 2020.

¹⁶¹ Ibidem, p. 14.

¹⁶² For general overview of non-discrimination legal framework and doctrine in relation to algorithms see ALESSI, C.: Lavoro tramite piattaforma e divieti di discriminazione nell’UE. In: *Impresa, lavoro e non lavoro nell’impresa digitale*. Cacucci, 2019; CONTOURIS, N., RATTI, L.: The Sharing Economy and EU Anti-discrimination Law. In: *The Cambridge Handbook of the Law of the Sharing Economy*. Cambridge: Cambridge University Press, 2018, pp.486–498; CAPUZZO, G.: Do Algorithms Dream about Electric Sheep? Percorsi di studio in tema di discriminazione e processi decisorii algoritmici tra le due sponde dell’Atlantico. In: *Medialaws*, 2020, No. 3; GERARDS, J., XENIDIS, R.: *Algorithmic Discrimination in Europe: Challenges and Opportunities for Gender Equality and Non-discrimination Law*. Brussels: European Commission, European Network of Legal Experts in Gender Equality and Non-discrimination, 2020.

¹⁶³ BAROCAS, S., SELBST, A. D.: Big Data’s Disparate Impact. In: *California Law Review*, 2016, Vol. 104, No. 3, p. 679.

tribute shall be a skilled candidate with good work aptitude. Human developers of the algorithms then set up this definition according to a variety of different measurable characteristics such as the ability to complete a working task within certain time period. The problems arising in the programming phase can be twofold: either can creators introduce some kind of personal bias in the equation, or they unintentionally introduce allegedly objective targets filled with previous human biases.

Second of all, the discrimination occurs due to inadequate representation of certain categories of people in training data. The digital age maxim ‘the algorithm is only as good as its training data’ puts the developers on guard from using previously biased data and under- or over-representation of certain categories.

Lastly, for the traditionally protected categories the new technology represents a threat, not so much in targeting them directly (which should be normally excluded by default by the developers), but rather due to the existence of so-called proxies. Proxies are neutral data that are closely related to sensitive personal characteristics, and they have the ability to reveal them without being detected, which can eventually lead to so-called ‘proxy discrimination’.¹⁶⁴ What is more, the need for new protected categories may arise, bearing in mind the original patterns of discrimination created in the ‘mind’ of an algorithm.

This problem cannot be reduced only by ensuring a sufficient representation of different categories in the training data. While some schemes appearing in the data are useful for the algorithm developers (such as key word referring to a previously covered work position matching the job opening), others represent the stereotype that they should avoid (men like football, women prefer dancing).¹⁶⁵ However, machine learning algorithms do not distinguish between the above-mentioned stereotypes.

From the foregoing it is clear that the regulation and detection of incorrect or discriminatory decision-making algorithms is difficult, yet not impossible. However, there is no clear and straightforward way to create an algorithm that is non-discriminatory and fair, mainly because there is no

¹⁶⁴ WACHTER, S., MITTELSTADT, B.: A Right to Reasonable Inferences: Rethinking Data Protection Law in the Age of Big Data and AI. In: *Columbia Business Law Review*, 2019, Vol. 2, No. 2, p. 22.

¹⁶⁵ BAROCAS, S., NARAYANAN, A., HARDT, M.: *Fairness and Machine Learning: Limitations and Opportunities*. Online manuscript, UC Berkeley, available online: <https://fairml-book.org/>.

consensus on how fair the selection and representation of certain groups of people is.

Even from this brief overview it is clear that determining what is a ‘fair algorithm’ is extremely difficult. Although the hidden layers of the neural network (‘black box’) are in principle almost impossible to control, various tools are beginning to emerge measuring different discriminatory tendencies of a given algorithm. These tools are developed by the world’s largest technology companies like IBM or Google.¹⁶⁶

‘Algorithm watchers’¹⁶⁷ or ‘algorithmic guardian angels’¹⁶⁸ how these tools are sometimes called by IT scholars, metaphorically speaking represent a sort of algorithmic police agents intended for hunting algorithmic criminals. It has just been analysed here why it is more difficult to identify the implicit criteria of a machine learning algorithm than to highlight the ones which by definition are explicitly defined by human beings. For this reason, such tools – the watchers – help to provide real-time analysis of algorithm’s reasoning as it learns¹⁶⁹ and thus decipher and report the risk of possible discrimination.

On the other hand, when tracking down the algorithmic bias, human control and expertise is also being requested. Ethical hackers and researchers can respond to so-called ‘bug bounties’¹⁷⁰ thus proving once again that tech-

¹⁶⁶ IBM, for instance, has developed an open source toolkit called AI Fairness 360 that helps developers test for discrimination or bias in machine learning models. Available online: <https://aif360.mybluemix.net/>. Moreover, organisations like Algorithm Justice League (<https://www.ajl.org/>.) systematically call for the duty of algorithmic audit to create more equitable and accountable AI.

¹⁶⁷ Like the author of the book JEAN, A.: *Nel paese degli algoritmi*. Neri Pozza Editore, 2021, one of the leading female researchers in the matter world-wide.

¹⁶⁸ JEAN, A.: Les agents algorithmiques seront nos meilleurs amis. In: *Les Echos*, 2018, available online: <https://www.lesechos.fr/2018/10/aurelie-jean-les-agents-algorithmiques-seront-nos-meilleurs-amis-1121174>.

¹⁶⁹ For instance, to analyse the representativeness of the learning data, the watcher provides a copy of the algorithm with samples of the learning data of different sizes. The average response should essentially not change, starting from a certain size and representativeness. Moreover, the watcher can provide the copy with a sample of so-called synthetic data, which it will have created by modifying the original learning data. All this allows watcher to analyse the behaviour of an algorithm and report the risk of possible bias to human supervisors. See JEAN, A.: *Nel paese degli algoritmi*. Neri Pozza Editore, 2021, pp. 120–121.

¹⁷⁰ GILES, M.: Digital Bounty Hunters Want to Help Businesses Track Down Hidden AI Biases that Can Prevent People Getting Jobs and Loans. In: *Forbes*, 2021, available online: <https://www.forbes.com/sites/martingiles/2021/11/19/digital-bounty-hunters-track-down-ai-bias-and-discrimination/?sh=7cbe8b3f2f2d>.

nological displacement is not the only possible future awaiting the labour markets.

Finally, beyond these obvious attempts to solve algorithmic discrimination via technology there is an enduring necessity for legal solutions to basically legal problem. Despite the best efforts of the IT scientists, some number of discriminatory cases will inevitably fall through the technological safety net and potentially end up in the court.

Contrary to the American experience,¹⁷¹ European case-law regarding algorithmic discrimination in access to work is considerably limited. The reasons for this may be the inherently difficult detection of the discriminatory practices perpetuated by an algorithm, just as the more advanced and widespread e-recruitment overseas as compared to Europe. Nonetheless, the wind of technological change has arrived also to Italian peninsula and brought with it two kinds of rather different, although significant rulings when it comes to algorithmic discrimination.

First of all, not long time ago a pair of rulings of Council of State has dealt with potentially discriminatory effects caused by the obscure nature of an algorithm-driven recruitment in public administration. In particular, the appellants in the first judgment No. 2270/2019¹⁷² were newly hired secondary school teachers, who, after being offered a permanent contract of employment based on their favourable rankings' position, have found themselves the recipients of an appointment on the competition classes and school order in which they had never worked; furthermore, despite having expressed their preference for second grade high school in the job application, they were the recipients of a first grade high school recruitment proposal; finally, all the appellants were sent to distant provinces with respect to their provenance. The second judgment No. 8472/2019,¹⁷³ identical with regards to the position of appellants and defendants, resulted reductive when it comes to the motives of the appeal as compared to previous judgment. The teachers were once again ordered permanent contracts in the distant provinces without taking into account the expressed preferences, despite the existing vacancies in the indicated provinces.

¹⁷¹ For exhaustive analysis of U.S. case-law with regards to algorithmic discrimination (with particular focus on the gender based discrimination) see SHIN, C. Can Hiring Algorithms be Impartial Decision-makers? In: *eRepository*. Seton Hall University, 2022, available online: https://scholarship.shu.edu/cgi/viewcontent.cgi?article=2248&context=student_scholarship.

¹⁷² Consiglio di Stato, 8 April 2019, No. 2270.

¹⁷³ Consiglio di Stato, 13 December 2019, No. 8472.

In particular, the dispute that Council of State was called to examine concerned in both cases the procedure leading to these outcomes, carried out on the basis of an ‘unknown’ algorithm.

The appellants’ argument against the algorithmic procedure was based on the fact that the functioning of the algorithm was not knowable and the provisions for the assignment of the offices were lacking the justification. On top of that there was no human in charge to assess the individual situations.¹⁷⁴

The employer *de qua* is the public administration. Until recently, a principle has been taken for granted among administrative law scholars that the content of the administrative decision was the result of a determination of a human being, attributable to the public institution through so-called ‘organic identification’.¹⁷⁵ The use of AI on various levels of public administration has partially rebutted such assumption, moreover with strong indications that the implementation of variously automated and intelligent systems capable of supporting the proceduralised decision-making process of public administrations are indispensable in the State of twenty-first century.¹⁷⁶ In this regard, especially in one of the judgments in question¹⁷⁷ there has been an attempt to strike a balance between two opposite poles – on the one hand, by rejecting the idea of the self-sufficiency of technology, on the other hand by recognizing the human derivation of digital management systems.

In substance, the Council has identified the essential legal characteristics of the algorithm in compliance with the principles and criteria underlying the just administrative procedure. More precisely, Council of State affirmed the full legal and administrative value of the algorithm, even if expressed in mathematical language. The technical formula of the algorithm must, therefore, be ‘*accompanied by explanations, which translate it into the underlying ‘legal rule’ which make it legible and comprehensible, both for citizens and for the judge.*’¹⁷⁸ This means, therefore, that ‘*the technical rule that governs each*

¹⁷⁴ Consiglio di Stato, 8 April 2019, No. 2270; point 1 and 2.

¹⁷⁵ GRECO, G.: Figure soggettive e modelli organizzatori della P.A. In: *Argomenti di diritto amministrativo*, 2017, Vol. 1, No. 3, p. 117. The most recent example of the P.A.’s relentless digitalisation is the InPA Platform, established with the Law Decree No. 80/2021 (later converted with Law No. 113/2021). Said platform allows to match the professional profiles necessary for the realization of the projects connected to Piano Nazionale di Ripresa e Resilienza (PNRR), all thanks to an algorithm that will match the offer and the demand and then notify the user through his digital identity account – SPID.

¹⁷⁶ CARULLO, G.: Decisione amministrativa e intelligenza artificiale. In: *Diritto dell’Informazione e dell’Informatica*, 2021, Vol. 3, p. 432.

¹⁷⁷ Consiglio di Stato, 8 April 2019, No. 2270.

¹⁷⁸ Ibidem, point 8.3

algorithm still remains a general administrative rule, built by man and not by the machine, to be then (only) applied by the latter'.¹⁷⁹ Ergo, in declaring the algorithm-driven software to be 'IT administration act', Council of State highlighted the consequences in terms of the need for transparency and knowability of the process.¹⁸⁰

For this reason, it has been observed by the legal doctrine that where the algorithmic activity requires discretionary assessments these must be anticipated during the development of the algorithm, structuring already beforehand – in the pre-automation phase – the hierarchy of rights and interests at stake.¹⁸¹ This would make it possible to verify that the results of the automated procedure comply with the requirements and purposes established by law and that the methods and rules on the basis of which algorithmic procedure was set up are clear and thus can be contested if necessary. According to Council of State, the 'knowability of the algorithm must be guaranteed in all its aspects'.¹⁸²

The importance of both judgments in question could be inferred from the logical-juridical considerations of the Council. In particular, as it has been pointed out by the Court in the second judgment (in chronological order) – No. 8472/2019 – three principles emerge from supranational law to be taken in due consideration when deploying AI tools in public administration, namely: the principles of knowability, non-exclusivity of the algorithmic decision and finally, the principle algorithmic non-discrimination.

In many critical points, such principles deduced in the foregoing case-law resemble the principles embedded in GDPR framework. In fact, the Council of State makes express and repeated reference to this regulation.

Knowability, for instance, must be interpreted according to Articles 13, 14 and 15 GDPR. According to this principle, everyone has the right to know the existence of automated decision-making processes that concern them and receive significant information of the logic used. The protection must be done 'by design', offering *ex ante* explanations of mathematical method or structure of the algorithm, but not only. 'Knowability in all aspects' refers

¹⁷⁹ Ibidem, point 8.2.

¹⁸⁰ DONINI, A.: Chi governa le strumentazioni digitali è datore di lavoro, anche in caso di appalto, Nota a sentenza di Tribunale di Padova, 16 July 2019, No. 550. In: *GiustiziaCivile.com*, 2020.

¹⁸¹ SIMONCINI, M.: Lo 'Stato digitale', l'agire provvedimento dell'amministrazione e le sfide dell'innovazione tecnologica. In: *Rivista Trimestrale di Diritto Pubblico*, 2021, Vol. 2, p. 264.

¹⁸² Consiglio di Stato, 8 April 2019, No. 2270, point 8.3.

inevitably to a more challenging ‘reasoned transparency’ through anticipations of the general logic behind the mind of an algorithm. However, doubts may arise whether said principle covers also the *ex post* transparency, which would lead to inevitable association with the right to explanation. Given the hesitancy of the legal doctrine to force the interpretation of aforementioned GDPR provisions in that sense, such interpretation should be dismissed right away. Yet, as stated by the Council, the knowledge of the logic underlying the algorithmic decision-making is instrumental to the exercise of the right of defence. Consequently, in any given specific case, the judge must be able to review the correctness of the algorithmic procedure in the same way that he is competent to assess the ordinary, non automated administrative activity. Hence, the *ex post* evaluation of the automated procedure leading to a specific administrative decision is necessary in order to convey the meaning of algorithmic reasoning in the understandable terms to interested parties and to judge. *Ergo*, surprisingly, the judgments *de qua* seem to have indirectly confirmed the existence of the right to explanation among the safeguards offered by Article 22, paragraph 3 GDPR.

According to another principle coined by the Council, that of non-exclusivity of the algorithmic decision, there must be, in the decision-making process, a human contribution capable of controlling, validating or denying the automatic decision – a so-called human in the loop.¹⁸³ There is a clear connection between said principle and the right to obtain human intervention pursuant to Article 22, paragraph 3 GDPR.

As for the potential discriminatory practice, in both cases the effects of the algorithmic discrimination did not affect the *if* of the possible outcome of recruitment procedure, but rather the incongruity of the content of employment contract with the pre-contractual offer of the contract; such discriminatory reason is compatible with the wording of the provision that bans

¹⁸³ State of Wisconsin v. Eric L. Loomis, Supreme Court of Wisconsin, Case No. 2015AP157-CR, 5 April – 13 July 2016; the case dealt with the discrimination produced by the Correctional Offender Management Profile for Alternative Sanction program (Compas) used by the US Department of Justice to pre-calculate the risk recidivism based on the processing of statistical data on social origin (for example, age, level of education, family conditions, work, gender, ethnic group, etc.) and the current living conditions (for example, availability of housing, drug use, etc.). The Wisconsin Supreme Court found legitimate the use of Compas where it does not constitute the exclusive instrument for the appreciation of the judge. The principle of non-exclusivity of the algorithmic decision expressed by the American court was expressly taken up by the Italian Council of State in the judgment No. 8472/2019, point 15.2.

all forms of discrimination with regards to access to work, including selection criteria and recruitment conditions pursuant to Article 27 paragraph 1 of the Legislative Decree No. 198/2006, as well as it falls under the scope of Article 3 of Directive 2000/78/EC regulating the access to employment and occupation.¹⁸⁴ From the factual examination of the case it is clear that other teaching staff hired in later phase of the recruitment have received more beneficial treatment (permanent employment in the selected competition class and in the province of residence), albeit placed lower in the ranking compared to appellants. That constitutes the infringement of the Aristotelian principle of distributive justice (on which both valid definitions of direct and indirect discriminations are founded) that clearly demands the equal cases to be treated equally.¹⁸⁵

From the factual background of both cases it is clear that appellants did not suffered the discriminatory treatment on the basis on any particular protected characteristic, i.e. gender, age or race; yet the bias that occurred was based on an incomprehensible algorithmic *ratio*, proving that also *'groups which do not map to a legally protected characteristics may suffer levels of disparity which would otherwise be considered discriminatory if applied to a protected group'*.¹⁸⁶

The second judgment concerned with algorithmic bias in the employment takes place in slightly different setting – that of platform economy workers. With the order issued on 30 December 2020, the Court of Bologna has declared the discriminatory nature of the algorithm 'Frank' operated by the company Deliveroo to manage the delivery riders' workflows.¹⁸⁷ According to the factual reconstruction of the case the working shifts were assigned to riders on the basis of the booking system with three time slots. Algorithms determined the collocation in one of the slots in accordance with rider's individual reputation ranking – the better ranking the wider choice of more profitable slots were available. It was the algorithm that calculated ranking by taking into account two parameters – participation and reliability, based on the actual participation in the chosen shifts or at least on the timely cancel-

¹⁸⁴ Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation, OJ L 303.

¹⁸⁵ CHROUST, A. H.: Aristotle's Conception of Equity (Epieikeia). In: *Notre Dame Law Review*, Vol. 18, No. 2, p. 120.

¹⁸⁶ WACHTER, S., MITTELSTADT, B., RUSSEL, CH.: Why Fairness Cannot be Automated: Bridging the Gap between EU Non-discrimination Law and AI. In: *Computer Law & Security review*, 2021, Vol. 41, pp. 11–12.

¹⁸⁷ Tribunale di Bologna, 7 December 2018, order in the case No. 2949/2020.

lation communicated with an advance notice of at least twenty-four hours. Discrimination would have concern precisely this last parameter since the algorithm failed to take into account the reasons why the rider had not participate in the previously chosen shift.

Because of the discriminatory profiling system those who did not participate in the booked shift for futile reasons and those who did not participate because they were on strike, sick, or absent due to care responsibilities were treated alike. As opposed to the previously described judgments of the Council of State, where there was a breach of the Aristotelian principle about treating two similar cases in the same way, here the algorithm stumbled upon the corollary of such principle – different cases must be treated differently.¹⁸⁸ In the best case scenario riders lost the possibility to work during the shifts with statistically higher remuneration; in the worst case scenario they lost the access to work.

Now, the latter effects of the case are particularly salient when put in relation to the algorithmic discrimination in the pre-contractual phase. *In primis*, contractual relationship between the rider and Deliveroo platform is established through rider signing of a self-employment contract. However, the order does not address the issue of the legal nature of the relationship because considered irrelevant for the purposes of applying the non-discrimination law. In fact, one of the most valuable characteristics of this particular legal branch is that the non-discrimination law has the effect on the consequences of the acts when the existence of a causal *nexus* between those acts and the disadvantage produced on members of a suspect class suggests the existence of discrimination.¹⁸⁹ Moreover, the judge in question has chosen to rely not on one, but directly two legal regimes capable of providing the non-discrimination protection for riders, namely the Legislative Decree No. 216/2003 and Article 47-quinquies of Legislative Decree No. 81/2015. While the latter offers only selective protection to a specific category of self-employed urban riders, the former has a much more wider scope. By choosing the widest legislative framework possible, the Court seems to be opening the big umbrella under which all in need could hide, irrespective of their status, supposedly

¹⁸⁸ MCCRUDDEN, CH., PRECHAL, S.: *The Concepts of Equality and Non-discrimination in Europe: A Practical Approach*. European Commission, European Network of Legal Experts in the Field of Gender Equality, 2009, p. 13.

¹⁸⁹ BARBERA, M.: Discriminazioni algoritmiche e forme di discriminazione. In: *Labour & Law Issues*, 2021, Vol. 7, No. 1, p. 9.

even covering the interval relative to the access to employment and occupation.¹⁹⁰

In fact, a rather intriguing question arises, whether the discrimination of riders *de qua*, falling under the provision referring to access to digital platform *ex* Article 47-quinquies, could have been interpreted as the discrimination in the access to employment and occupation. Given that the work modality in on-demand platforms (theoretically) consist of freedom of the rider to independently determine the *an*, when and *quantum* of the performance,¹⁹¹ their position in the platform's internal labour market is determined by the effectiveness of such choice. Although '*the discontinuity in the work relationship does not exclude that there may be continuity of the work performance*',¹⁹² – hence not excluding *a priori* the legal classification of such working arrangements under the profile of subordinated employment – such temporal discontinuity is the reflexion of the technologically-enhanced importance of the subjective time of work, both subordinated and self-employed.¹⁹³ Platform workers are the perfect example of how deployment of new technologies in work organization *lato sensu* has the effect of emphasizing the progressive elevation of 'waiting time' among classical working time categories.¹⁹⁴ Rider's access to single working shift transforms his status from offline to online (both figuratively and literally); unpaid non-working time converts to waiting time with the possibility to receive paid task assignments from the app.

¹⁹⁰ Some authors speak about '*a desire to inaugurate a trend that recognises the universalisation of certain protections*'. See PURIFICATO, I.: Behind the Scenes of Deliveroo's Algorithm: The Discriminatory Effect of Frank's Blindness. In: *Italian Labour Law e-Journal*, 2021, Vol. 14, No. 1, p. 173.

¹⁹¹ Contrary to the majority of the Italian case-law, the ruling of Court of Palermo from 24 November 2020, No.7283 rebutted the longstanding conviction about the worker's autonomy in the case by case analysis of the alleged employment status of Glovo rider. See, for instance, NUZZO, V.: Sulla subordinazione dei rider: un'innovativa pronuncia del Tribunale di Palermo. In: *Rivista Italiana di Diritto del Lavoro*, 2020, No. 4; CAVALLINI, G.: Poteri datoriali della piattaforma: il Tribunale di Palermo riapre l'opzione subordinazione. In: *GiustiziaCivile.com*, 2020, No. 12.

¹⁹² BAVARO, V.: Questioni in diritto su lavoro digitale, tempo e libertà. In: *Rivista Giuridica del Lavoro e della Previdenza Sociale*, 2018, Vol. 1, p. 53.

¹⁹³ From here the need for '*the valorization of the subjective profile of labour law*', VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, pp. 123–124.

¹⁹⁴ MARTELLONI, F.: Metamorfosi del lavoro e polisemia del tempo: riconoscerlo, proteggerlo, remunerarlo. In: *Archivio giuridico*, 2019, Vol. 2, p. 259.

The access to employment or occupation under the Directive 2000/78/EC¹⁹⁵ is a concept that should not be interpreted restrictively in the light of consolidated EU case-law.¹⁹⁶ Moreover, algorithmic discrimination in access to work entails especially the risk for the precarious categories of on-demand workers. Along these lines the recent proposal of AI Act classifies among the high risks also the ‘AI systems used in employment, workers management and access to self-employment, notably for the recruitment and selection of persons(...)’.¹⁹⁷

In the light of foregoing theoretical reconstruction, discrimination in access to digital platform *ex* Article 47-quinquies of the Legislative Decree No. 81/2015 shall be interpreted as discrimination in access to employment and occupation under the Directive 2000/78/EC.

In addition, paragraph 2 *ex* Article 47-quinquies establishes that the exclusion from the platform and the reductions in job opportunities attributable to the rider’s failure to accept the call are illegitimate and, therefore, prohibited. Even if the judge *de qua* dedicated no attention to this provision, the rule must be considered of utter importance since it provides the *ex ante* protection of the access to work, regardless of possible discriminatory effect.¹⁹⁸

The abovementioned rulings come from two labour market realities that stand opposite to each other – a permanent employment contract with public administration, so called *posto fisso*,¹⁹⁹ versus quintessentially precarious job in gig economy. It is a demonstration that algorithmic decision-making has found its way into all workplace realities, irrespective of its private/public nature or the workers’ employment status.

¹⁹⁵ Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation, OJ L 303.

¹⁹⁶ CJEU, Case C-507/2018, *NH v. Associazione Avvocatura per i diritti LGBTI*, 23 April 2017, PASSALACQUA, V.: Homophobic Statements and Hypothetical Discrimination: Expanding the Scope of Directive 2000/78/EC. In: *European Constitutional Law Review*, 2020, Vol. 16, No. 3, pp. 513–524.

¹⁹⁷ Recital 31 of Proposal for a Regulation of the European Parliament and of the Council laying down harmonized rules on Artificial Intelligence (Artificial Intelligence Act) and amending certain Union legislative acts.

¹⁹⁸ PERULLI, A.: La discriminazione algoritmica: brevi note introduttive a margine dell’Ordinanza del Tribunale di Bologna. In: *Lavoro Diritti Europa*, 2021, No. 1, p. 7.

¹⁹⁹ Employment in Italian public administration represents a goal for many, as it stands for typically comfortable, low-intensity job, accompanied with strong labour law safeguards, mainly regulations against dismissals – the urban legend has it that such job, once obtained, will last until reaching the retirement.

Nonetheless, one common denominator exists: both Council of State and Court of Bologna are responsible for creating the leading cases in the matter of algorithmic discrimination and transparency, and not only in relation to technologically enhanced recruitment phase.²⁰⁰

²⁰⁰ See ALOISI, A., DE STEFANO, V.: Frankly, My Rider, I Don't Give a Damn. In *La rivista il Mulino*, 2021; PESCE, G.: Il giudice amministrativo e la decisione robotizzata. Quando l'algoritmo è opaco. In: *Judicium*, 2020, available online: <https://www.judicium.it/giudice-amministrativo-la-decisione-robotizzata-lalgoritmo-opaco/>.

7. DEEPENING OF INFORMATION ASYMMETRY IN THE LABOUR MARKET. DISRUPTIVE ROLE OF REPUTATION IN DIGITAL WORKING ARRANGEMENTS

Digital technologies have opened a world of possibilities to individuals and to businesses. Instead of limited space and number of connections in analogue world, internet gave an opportunity to anyone with an idea or a product to sell, to reach the unknown crowd of consumers and far-away markets.

With specific reference to technology-driven innovation and its impact on the organization and execution of work it could mean only one thing – new way for employers to reduce the transaction costs. According to Nobel prize winner economist Ronald Coase, an employment relationship represents a convenient compromise for both its parties – it gives an employer a stable manpower to direct and organise in order to conduct business efficiently and it means a job security and continuity for the employee. Coase argued that having to search and choose individual contractors whenever there is a need for a specific job performance would result in more costly and time-consuming procedure for the employer.²⁰¹ This thesis was further confirmed by economic sociology theory of ‘information advantage’ according to which having strong and stable social ties with others translates into an economic advantage because we can trust the other party, reduce transaction costs, develop a familiarity and a set of expectations that structure the actions of others and ours. We become more predictable for others and they become predictable for us.²⁰²

With a dawn of digital markets Coase’s theorem seemed to have found itself in a novel territory where its law did not apply.²⁰³ Gig economy has en-

²⁰¹ COASE, R. H.: The Nature of the Firm. In: *Economica, New Series*, 1937, Vol. 4, No. 16.

²⁰² See GRANOVETTER, M.: Economic Action and Social Structure: The Problem of Embeddedness. In: *American Journal of Sociology*, 1985, Vol. 91, No. 3, pp. 490–491; where the author scrutinized market processes in the light of sociological theories, especially with reference to the role of concrete personal relations and networks of such relations in generating trust and discouraging malfeasance.

²⁰³ Conversely, some commentators have argued against this narrative; according to such interpretation, Coase’s original theorem has not been rebutted and company’s internal hierarchy based on stable employment contracts offers paradoxically more flexibility thanks to the intrinsically incomplete contractual arrangements aimed at *cooperation between*

abled quick and efficient service market where the need for stable labour force seems obsolete; instead, just-in-time workforce is able to respond to an oscillating demand without the fixed costs of employment. That allegedly meant an inversion of Coase's theorem in favour of flexible working arrangements.

Indeed, new digital markets have an advantage of world-wide connectivity, but the protagonists of this economy do not know – and therefore – do not trust each other. Due to the inherent risks of internet-facilitated transactions, users engage in transactions only if they believe that the other party will not exploit their vulnerability and behave opportunistically.²⁰⁴ In economic terms the lack of information about the other party of the transaction is called information asymmetry; such asymmetric relations could lead to the failure of a single transaction, but in extreme cases they can provoke even a vast market failure. For instance, a clear asymmetry could be found between the Uber drivers and users. The customers of the ride-hailing company are practically accepting to share a ride with complete stranger; whereas the majority of Uber drivers may be trustworthy, the lack of any information whatsoever could mean personal risk for the users as well as significant financial risk for a company. Without the platform interface enabling for mutual evaluation of drivers and users, Uber could have never had a success on the market.²⁰⁵ The shift of paradigm happened precisely due to the 're-invention' of reputation.

Analogous situation of information asymmetry could be find on the service-side of the relationship as well, namely between other two components

parties through gradual adjustments'. The increase in organizational costs associated with employment is compensated by the possibility to exercising fully-fledged managerial authority and command and control power. See ALOISI, A., DE STEFANO, V.: Regulation and the Future of Work: The Employment Relationship as an Innovation Facilitator. In: *International Labour Review*, 2020, Vol. 159, No. 1, pp. 61–62.

²⁰⁴ TEUBNER T. et al.: Unlocking Online Reputation. On the Effectiveness of Cross-platform Signalling in the Sharing Economy. In: *Business and Information Systems Engineering*, 2020, Vol. 62, No. 6, p. 502. The authors recognize pivotal role of reputation in building the trust within internet based legal and commercial relations, defining trust as willingness to accept vulnerability due to others' actions based on expectations about their intentions and skills.

²⁰⁵ McAFEE, A., BRYNJOLFSSON, E.: *La macchina e la folla. Come dominare il nostro futuro digitale*, Feltrinelli Editore Milano, 2020, pp. 184–187. The information asymmetry theory of George Akerlof, coined in the groundbreaking paper 'The market for lemons' that won him a Nobel prize, has proved that existence of the 'lemons' - or better yet risks hidden in the market transactions by one (better informed) party of the transaction, could represent a possibility of failure on the market.

of digital economy – the platforms and the platform workers. Access to the platform is, in fact, open to all those who surf the web and who have the ability to use devices that allow them to access the portal to register for it. The selection of the platform worker, however, does not take place through a recruitment method based on an individual interview and preceded by an examination of the candidate's curriculum vitae, which would allow the platform employer to become aware of both the baggage of skills he is equipped with and his personal characteristics. Instead, the recruitment process usually unfolds with a simple website registration and unilateral acceptance of platform's terms and conditions, composed of so called click-wrap agreements.²⁰⁶ As a result, the platform employer must find different information sources on the worker's vices and virtues that could possibly influence the execution of work; that happens mainly by exploiting the same technological tools used to generate user's trust – i.e. customer feedback or other data collection systems about worker's performance.

In this way the reputation of the worker contributes to building the reputation of the digital platform; since the users seek elements of reliability and credibility from the other contracting party, feedback and evaluation tools appear as mechanisms for selecting economic operators on the digital market. Ultimately the platforms base their success to a considerable extent on the ability to manage those workers who meet the requirements for the acceptable reputation.

In a triangular relationship between the protagonists of gig economy – i.e. digital platform, platform worker and user – not only reputation tools compensate the missing information link on which the customers build their trust towards the service offered, but they also provide employer with information of various quality or relevance about the worker's performance. Reputational systems aimed at operating in the relationship between users and digital platforms in the first place thus affect the management of working relationships as well.²⁰⁷

²⁰⁶ Click-wrap or click-through agreements are a set of binding guidelines that defines the conditions of work and which are non-negotiable, since the candidate can only accept *tout-court* all of them with one simple click or abandon the enrolment process. See ALOISI, A.: Commodized Workers: Case Study Research on Labour Law Issues Arising from a Set of On-demand/Gig Economy Platforms. In: *Comparative Labour Law & Policy Journal*, 2016, Vol. 37, No. 3, p. 671.

²⁰⁷ See NUZZO, V.: Customer satisfaction e contratto di lavoro subordinato. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2020, Vol. 165, p. 30.

Clearly, reputation acts like a substitute for trust between various protagonists of digital markets and thus is bound to have a central role in their functioning. If one ought to draw conclusions from above analysis of various economic theories, reputation could be defined as a decisive immaterial business asset that reduces the risk of information asymmetry and thus market failure; moreover it enables the reduction of transaction costs for the platform companies and therefore it plays a vital role in the very existence of digital economy.

Therefore, the very functioning of technologically-enhanced workplaces revolve around a notion of reputation; that entails not only digital labour platforms but really any working arrangement channelled through or managed by AI (like in the Amazon warehouses).

However, it is also self-evident that importance of reputation goes well beyond the market dynamics as it serves as universal currency for endless human social interactions – it can be used strategically as a signal of certain social status or personal quality or conversely, to communicate negative attributes in order to vilify them. It is a concept used (and abused) in politics and personal relationships, in professional and private life, both offline and online. Especially worrying under this profile is a digital reputation built by users of social networks like Facebook or Instagram, as it has been argued here before in relation to possible discriminatory or otherwise unlawful connotations in the pre-contractual phase of the employment. However, albeit this compulsive need to over-share the information in the digital sphere has been marked as feature of modern times, human need of reputation is arguably as old as the humanity itself. Anxiety about how we see ourselves exists in all cultures and manifests itself already at a very early stage of human development; ultimately, the one feature that distinguishes people from other species is *'the internalised gaze of others that haunts us permanently'*.²⁰⁸

While in the light of previous analysis the role of digital reputation seems incontrovertible, its configuration with regards to the content gives rise to some critical legal issues.

First of all, it could be stated – rather accurately – that reputation equals information. As already argued reputation helps to correct market asymmetry by providing information about the other party of the economic transaction, hence the equal sign between two terms. Yet, information is a generic concept and does not have the ability to convey a message about its truthfulness.

²⁰⁸ ROCHAT, P.: *Others in Mind: Social Origins of Self-consciousness*. Cambridge University Press, 2009.

ness, objectivity, reliability or completeness. In fact, dictionary definition of reputation as ‘overall quality or character as seen or judged by people in general’ or ‘recognition by other people of some characteristic or ability’²⁰⁹ indicates its precarious personal attribute generated entirely by the perception of others.

Ergo, information to become a reputation must go through the filter of the opinion, criticism and personal value judgment. Overall reputation of a person is a cultural product that ‘exceeds the control of those individuals who generate it or the individual who must carry it’.²¹⁰

In this sense reputation represents more than a pure information, but rather it is evaluated information – a shortcut of the accumulated judgments and interpretations about the individual.²¹¹ For Adam Smith ‘the success of most people almost always depends upon the favour and the good opinion of their neighbours and equals; and without a tolerably regular conduct these can very seldom be obtained’.²¹² That is a reason why economic theories see generally reputation in favourable light: the concept puts in the nutshell the expectations about future behaviour of the subject based on his past behaviour, and therefore it reduces the informational asymmetry and increases market predictability.

However, vision of reputation as an expectation of future behaviour is rather reductionist and serves only to fuel economic theories about the market. Firstly, such standpoint seems to omit to incorporate possible biases into the theory, as if all the past evaluations of the subject were transparent and legitimate. Conversely, it has been argued elsewhere that reputation is a broad social construct that includes also its ‘decodification function’²¹³ in order to understand customers’ demand; and more importantly, it is used to compensate for the absence of employer’s direct surveillance of work performance.²¹⁴

²⁰⁹ Merriam-Webster dictionary, available online: <https://www.merriam-webster.com/dictionary/reputation>.

²¹⁰ HEARN, A.: Structuring Feeling: Web 2.0, Online Ranking and Rating, and the Digital ‘Reputation’ Economy. In: *Ephemera Journal*, 2010, Vol. 10, No. 3-4, p. 424.

²¹¹ ORIGGI, G.: A Social Epistemology of Reputation. In: *Social epistemology*, 2012, Vol. 26, No. 3, p. 402.

²¹² SMITH, A. *The Theory of Moral Sentiments*, 1790, available online: https://www.ibiblio.org/ml/libri/s/SmithA_MoralSentiments_p.pdf.

²¹³ See NUZZO, V.: Customer satisfaction e contratto di lavoro subordinato. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2020, Vol. 165, p. 28.

²¹⁴ Ibidem.

Another issue of great relevance concerns precisely the specific understanding of reputation with regards to digitalised working arrangements. Scholarly literature dedicated particular focus on feedback systems based on customer reviews and ratings applied by digital labour platforms. Although every platform's reputational system is different, their functioning can be roughly summarised as follows: in a first phase, data disclosing the judgment and evaluation of the customers using the service are collected; subsequently, all these data referable to individual platform worker are inserted in a calculation infrastructure that aggregates them, analyzes them and re-elaborates them in order to produce a new information content. Upon the outcome of the algorithmic sequence described, the platform is in possession of inferential information which reveals the degree of professionalism, ability and performance referable to each individual worker, or, at least, its subjective perception by the end user.²¹⁵ The final information is thus a product of two-fold evaluation – the customer's highly subjective assessment represents the first filter for objectively observed reality, whereas the algorithm embedded in the platform re-evaluates the information on the basis of pre-set criteria. It means that customer feedback mechanisms used by digital labour platforms operate with information perfectly aligned to the definition of reputation.

On the other hand, other systems enabling evaluation of work performance are being used across the labour market and there are not strictly tied to the digital labour platforms, nor they are a result of external users' evaluation. For instance, Amazon warehouses are famous for the use of invasive technology in coordinating and controlling the execution of task by workers.²¹⁶ The information collected by the technological devices then enter

²¹⁵ INGRAO, A.: I sistemi di feedback basati su rating e reviews tra controllo della prestazione lavorativa e divieto di decisioni automatizzate. In: *Impresa, lavoro e non lavoro nell'economia digitale*. Cacucci Editore, 2019, p. 194.

²¹⁶ At the start of every shift, an average employee John Doe of a random U.S.A. Amazon warehouse passes through the full body scanner, then picks up a handheld barcode scanner, logs into the system that matches him with the device and proceeds to handle the task that appears on its screen. For example, John runs down to pre-ordered aisle to pick the selected item and place it on a conveyor belt. Completion of every task is timed with a countdown and the system monitors the workers productivity. Thanks to built-in GPS system, John's whereabouts are always known, even during the bathroom break. Speaking of small breaks intended for drinking water or using facilities, they are counted as so called ToT – Time Off Task. John needs to be careful and not exceed ToT, otherwise a termination message could appear on the screen of hand scanner. Sometimes a different message appears on the screen, asking for the feedback through daily employee survey programme called Connections, with questions like: 'Would you recommend Amazon to a friend or

the internal classification ranking and end up being displayed at the working stations, showing the current individual score of every employer.²¹⁷ Arguably, Amazon's office employees are being treated even more harshly, using the controversial stack rating systems to assure a turnover of the lowest performing employees on the ranking scale.²¹⁸ Since the factual information output about work performance is a result of evaluation procedure (algorithmic, human or both), under closer inspection these rating and ranking tools enabling the internal workers' assessment may also be described as reputation systems.

Further analysis from legal standpoint will be dedicated to the differences between external and internal reputation systems in labour relations. Nonetheless, their conceptual integrity to a notion of reputation in general helps to unify the discourse.

Before proceeding with separate internal and external reputation profiles the one last issue ought to be mentioned. Digital reputation is different from its wider social or economic concept with regards to the possibility to measure it. The algorithms and metrics have the power to make the digital forms of reputation visible, tangible and under certain conditions, also measurable for individuals, brands and companies.²¹⁹ Since reputation is critical to reducing customer's perception of risk (whether in offline or online transactions), its quantifiable nature makes it easier to manage and consequently

relative as a great place of work? Are you proud to work at Amazon? Does your manager treat some associates better than others? Would you win if you played chess with your manager? In the past month have you considered leaving your job at Amazon? Are you honest when answering Connections questions? During the day John repeatedly passes by big television screens where he can see himself surrounded by green or red circle, depending on if he maintains two meters distance from other employees, as a social distancing measure due to Covid-19 pandemic. Finally, at the end of the day, John logs out and hands in his barcode scanner, passes through the full body scanner again and leaves. DELFANTI, A., RADOVAC, L., WALKER, T.: *The Amazon Panopticon, A Guide for Workers, Organizers & Policymakers*, UNI Global Union report, 2021; for other questions that appeared on the Connection, see the website that collects them from employees: <http://amazonemancipatory.com/collected-amazon-sdf8-connections-questions>.

²¹⁷ KANTOR, J., WEISE, K., ASHFORD, G.: The Amazon That Customers Don't See. In: *The New York Times*, 2021, available online: <https://www.nytimes.com/interactive/2021/06/15/us/amazon-workers.html>.

²¹⁸ LONG, K. A.: Internal Amazon Documents Shed Light on How Company Pressures out 6 % of Office Workers. In: *Seattle Times*, 2021, available online: <https://www.seattletimes.com/business/amazon/internal-amazon-documents-shed-light-on-how-company-presures-out-6-of-office-workers/>.

²¹⁹ GANDINI, A.: *Leconomia della reputazione. Il lavoro della conoscenza nella società digitale*. Ledizioni Ledi Publishing, 2019, p. 30.

lead to a vast utilization across the market. However, its use in the particular area of the market – the labour market – must be accompanied with a prudent regulation, given the peculiarities of the actors on the market. The growing importance of reputational systems in the workplace affects various aspects of work relationship, depending on the specific settings of each company; direct consequences of worker's reputational score range from assignment and allocation of work, determination of wages/compensation, possibility of promotion, or activating of disciplinary measures.

7.1. External reputation systems

The foregoing conceptual analysis of generic profile of reputation is instrumental to its legal evaluation. Given its widespread use in technologically-enhanced working relationships, such notion must be subjected to thorough scrutiny in order to show the legal regulation applicable.

First of all, the distinction must be made between external and internal reputation: the former is based on information arriving from sources external to the work relationship, whereas the latter relies on company's internal evaluation systems, nowadays frequently run by algorithms. While both constitute reputation systems – i.e. totality of evaluated information that facilitate functioning of the relationships between protagonists on the (labour) market, their intrinsic characteristics influence applicability of different legal regulation.

External feedback from customers plays important role in some conventional employment settings such as tourism industry. In some hotels, reviews posted on Tripadvisor have been systematically incorporated into management practices to *'keep the staff on their toes all the time, because they are terrified of a bad review'*.²²⁰ Employees, especially when targeted in the customers' comments online by mention of the name or close description, can face a real threat of repercussions in their employment relationships. So was the case in the judgment before the Irish Workplace relations Commission regarding the unfair dismissal of a waitress from the restaurant, based on the negative review on Tripadvisor.²²¹ The employee was dismissed with an immediate effect after the comment online appeared claiming the abrupt

²²⁰ WOOD, A. J.: *Algorithmic Management. Consequences for Work Organisation and Working Conditions*. European Commission, 2021, p. 6.

²²¹ *Judgment Waitress v Restaurant owner*, Workplace Relations Commission, Ireland, Ref. No. ADJ-00011405.

behaviour from ‘the red-haired’ waitress. The employer failed to verify the truthfulness of such statement as he has given the waitress no opportunity to respond. There was no disciplinary procedure entailing the examination of alleged complaints. Even if the case did not address the validity of the complaint source, the judge seemed to confirm that the standard rules of the employment relationship – if applied – should represent a valid protection even against the online complaints from the relatively anonymous crowd of alleged customers.

Tripadvisor – a digital platform that manages the websites where tourist information is disseminated, offers a comparison service of the touristic facilities and for this reason collects the reviews of registered users – is becoming a place where fake user profiles thrive and there is no shortage of paid and/or made up comments.²²² The fact that said company is not capable of ensuring the authenticity of the reviews has been confirmed at first also by Italian Competition and Market Authority that claimed Tripadvisor conducting unfair commercial practice,²²³ the decision later inverted by regional administrative court of Lazio region, Italy.²²⁴ While the former Authority has underlined the paradox of the company disseminating information of deceptive nature of being in stark contrast with what the core business is – precisely the dissemination of useful tourist information; the latter Court has freed Tripadvisor of responsibility for such reviews, recalling ‘*the duty of the average user of the internet to diligently know the mechanisms (...) and the inherent pitfalls (...) with regards to the reliability of individual contributions relating to personal opinions expressed by users of all kinds*’. Such standpoint offered a validation of external reputation systems as a useful tool for the digital markets by shifting the responsibility for truthful information from the companies that are in charge, to the consumers with no real means of discernment between authentic or false reviews. The Tripadvisor case helps to enlarge the vision of digital reputation: the encompassing risks thus shall in-

²²² Although the vast majority (93 percent) of fake reviews aim to convey a positive message in order to boost the reputation of the commented business, the malicious comments – above all when fake and unfounded – can go a long way and have also some negative consequences for the employees of the reviewed business. For detailed information about the extent of fake reviews, with focus on the one year period in 2020, see the latest Tripadvisor’ transparency report, available online: <https://www.tripadvisor.co.uk/TransparencyReport2021>.

²²³ AGCM 19-12-2014 No. 25237 (PS9345), Boll., 50/2014, See: <https://www.agcm.it/media/comunicati-stampa/2014/12/alias-7365>.

²²⁴ Judgment No. 9355 of 13 July 2015, TAR di Lazio.

clude not only the subjectivity of the external judgments but also their possible deceitful nature.

Indeed, so far as Tripadvisor and similar platforms are concerned, the risk of vindictive and phony comments goes hand in hand with their growing importance for the businesses and therefore with all probability more and more unfair dismissal cases will appear in the Courts all over the world.

Although of undeniable importance for standard employment relationships, the external reputation gained an important momentum among labour law scholars in relation to widely discussed on-demand platform work. It has been efficiently observed how feedback and ranking systems enable processing of the data produced by the consumers and workers during their encounter; if the platforms were to be seen as decentralised production sites and digital technology as the tool enabling remote organization of work and execution of managerial prerogatives, then the reputation systems ensure the functioning of the platform dynamic as such.²²⁵ At the same time, more 'labouristic'²²⁶ angle reveals that collection of external work and/or service evaluation from the users is repurposed by the platforms to control, organise or discipline workers – prerogatives typical of subordinated labour relationship.

Some clarity shall be brought into to subject-matter by responding to question whether the holder of the controlling power is an actual platform or the crowd of customers leaving the reviews. First, it could be argued that customer feedback and similar mechanisms constitute indirect control tools for work performance; it is indirect precisely because the control based on the customer reviews is carried out by the platform-employer but it is mediated and filtered through customers' judgments.²²⁷ Conversely, Italian legal scholarship has put forward also the interpretation that control of work per-

²²⁵ GANDINI, A.: Labour Process Theory and the Gig Economy. In: *Human Relations*, 2018, Vol. 1, No. 18, p. 8.

²²⁶ The made up expression 'labouristic' is not supposed to be referencing the affinity to British Labour party, but rather the typical point of view labour law experts.

²²⁷ In this vein NUZZO, V.: Customer satisfaction e contratto di lavoro subordinato. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2020, Vol. 165, that explores this hypothesis with a negative outcome, not because the platform is not in charge of the control, but because there is no control in the sense established by Article 4 Workers' Statute; contrary to this PACELLA, G.: Il lavoro nella gig economy e le recensioni online: come si ripercuote sui e sulle dipendenti il gradimento dell'utenza? In: *Labour and Law Issues*, 2017, Vol. 3, No. 1, that forces the application of the Article 4 protections in the light of de facto same effect it produces – i.e. the acquisition of information relating to the performance through tools intended for another purpose.

formance is actually executed directly by the customer, while the platform is limited merely to adopt disciplinary measures upon the negative results of such control.²²⁸

Similarly, customer of any given digital labour platform is called to express his satisfaction through very simplistic star or point system which final value is determined as the average of all votes; when the minimum critical threshold is reached, worker may be subject to disciplinary sanctions. Apparently, the quality control seems to be ‘crowdsourced by the platform to its customers (...), tapping the ‘wisdom of the crowd’ in order to determine the performance levels of the each worker.’²²⁹ Splitting of prerogatives between two different subjects closely resembles the staff leasing contract.

Both Uber and Lyft – competing firms on to U.S. market – allow customers to rate drivers by using a five-star scale feedback system, “with one star being ‘awful’ and five being ‘awesome’”.²³⁰ Uber’s policy even require further specification of the feedback reasoning whenever the driver is rated below four stars; the detailed feedback is required with regards to different skills and features of the service like the general cleanliness of the vehicle or whether the driver was helpful and considerate, but also issues like car quality or intensity

²²⁸ PACELLA, G.: Il lavoro nella gig economy e le recensioni online: come si ripercuote sui e sulle dipendenti il gradimento dell’utenza? In: *Labour and Law Issues*, 2017, Vol. 3, No. 1, p. 15 ff. As for the latter, the hypothesis of customers having the prerogative of controlling work performance would seem to be based on the possibility – foreseen by the law for the staff leasing contract pursuant to Articles 30-40 of the Legislative Decree No. 81/2015 – to split employer’s prerogatives among different subjects. The particularity of this contract stems also from the *expressis verbis* legal delegation of the control prerogative from the employer (the staff leasing agency) to the third subject of the contract – the company that actually benefits from work performance (pursuant to Article 30 of the Legislative Decree No. 81/2015, ‘an authorized staff leasing agency puts one or more of its employees at disposal of a user; [the employees] for the entire duration of the mission, carry out their activities in the interest and under the direction and control of the user’). The ‘user company’ exercises a portion of the management and control prerogatives not as an employer, but due to the legal effect that the law derives from the connection between the employment contract with the staff leasing agency and the contract of leasing between two companies. Here the concept of employer in the classical sense faces legal and factual anomaly: traditional prerequisite of the employer’s status – i.e. being the holder of all three employer’s prerogatives simultaneously – is being challenged by the normative provision; all the more considering how control power is functional to executing disciplinary prerogative.

²²⁹ PRASSL, J., RISAK, M.: Uber, TaskRabbit, & Co: Platforms as Employers? Rethinking the Legal Analysis of Crowdswork. In: *Comparative Labour Law & Policy Journal*, 2016, Vol. 37, No. 3, p. 7.

²³⁰ *Cotter v. Lyft, Inc.*, United States District Court, N.D. California, March 2015, Case No. 13-cv-0465-VC.

of conversation.²³¹ This way the platform companies control many aspects of worker's conduct as a '*tool to enforcing specific work rules*'.²³² Individual customers therefore either express their vote on the predetermined scale or they can go into a more detailed description; however, these individual evaluations are further processed algorithmically into a final vote.

In fact, another attribute of digital external reputation is its collective nature. Although every single work performance is evaluated by an individual customer, only the final reputation consisting of multiple assessments and determined by algorithmic metrics can be used by the platform to enact sanction mechanism. For instance, when Uber driver's average star rating falls below a certain level established by the platform, the company deactivates worker's profile.²³³ The original question about the real holder of control prerogative becomes more complicated considering that the worker is being evaluated by a collective body composed from independent judges and based on different work performances. Activation of sanction mechanisms is subordinated to the overall worker's rating as a result of averaging of multiple different ratings for different work performances.

The foregoing is linked to another important aspect – reliability of individual judgments. Understandably, each individual assessment applies subjective parameters that may be different from those of other users. In theory, multitude of judgments from the crowd should lead to a more complex, more precise and, ultimately, more objective result.²³⁴ However, as an illuminated doctrine has observed while '*the evaluation of the courtesy of the driver or cashier constitutes clearly a personal appreciation, hardly traceable back in order*

²³¹ Information available on the Uber website: <https://www.uber.com/blog/rider-feedback/>; or also <https://www.uber.com/it/en/drive/basics/how-ratings-work/>.

²³² INGRAO, A.: Assessment by Feedback in On-demand Era. In: *Working in Digital and Smart Organizations. Legal, Economic and Organizational Perspectives of the Digitalization of Labour Relations*. Palgrave Macmillan, 2018, p. 97.

²³³ Official Uber website information states as follows: '*A driver or delivery person can lose access to part or all of the Uber platform for ratings that are below the minimum average rating in their city. If their rating is approaching the minimum limit, we will let them know and may share information that may help them improve their rating from users, customers, and restaurants.*' Accordingly, the minimum threshold rating is unknown to drivers at any given moment, because it is linked to individual cities due to *alleged 'cultural differences in the way people in different cities rate each other'*. Interestingly, information regarding the profile deactivation due to low rating is not listed among the most common reasons for it. See <https://www.uber.com/us/en/drive/safety/deactivations/>.

²³⁴ ORIGGI, G.: Informazione e reputazione: l'intelligenza collettiva del web. In *Iride*, 2017, Vol. 1, p. 48.

to ascertain the facts, (...) a high number of users who report the rude behaviour of a certain driver may perhaps somehow 'objectify' the facts, but in any case the description of the incident would be more relevant than this perception, albeit generalised.' In other words – homogeneous plurality of an opinion does not constitute a fact. Especially, considering the wide-spread nature of prejudice and historical stereotypes across the society²³⁵ one cannot legitimately expect the customer feedback systems to be immune from it.

Furthermore, in addition to being their judgment highly subjective and in no way regulated, the customers may not be evaluating the work performance but rather many aspects that have nothing to do with the fulfilment of the main obligation.

With regards to the scope of the control, the users of the platform are not interested in evaluation of the correct fulfilment of the work obligation, but rather if the service offered was to their satisfaction. Indeed, the information about the work performance can very well be contained in the user's review although not of his/hers primary interest. As a result the information about worker's performance may be reported to the platform anyway, as a collateral effect.²³⁶

Slightly different perspective is offered when the issue of customer feedback is looked at through provisions of GDPR. External reputation of workers entails the characteristics of non automated processing of personal data – i.e. human profiling by technological means; yet, only under one condition that represents entry-gate to the GDPR protection: if highly subjective judgment about broad worker's behaviour is to be considered personal data. Pursuant to Article 6 GDPR personal data is '*any information relating to an identified or identifiable natural person*'. According to an official interpretation, the concept entails both objective and subjective information about a person, the latter including also opinions and assessments.²³⁷ To that effect worker's reputation – which is an evaluated information composed of opinions and

²³⁵ NUZZO, V.: Customer satisfaction e contratto di lavoro subordinato. In: *Giornale di diritto del lavoro e di relazioni industriali*, 2020, Vol. 165, pp. 36–37; the author mentions how prejudice against female drivers or drivers of different ethnic origin or race (especially in less multicultural countries such as Italy) can possibly influence the less favourable evaluation; but even more importantly she does not fail to point out how any kind of cultural difference could be responsible for negative feedback, even being a supporter of the rival football team.

²³⁶ Ibidem, p. 33.

²³⁷ Article 29 Data Protection Working Party, 06/2007, Opinion 04/2007 on the concept of personal data, p. 6.

assessments of customers – should be considered personal data; interpretation further confirmed by ECJ case law in the matter. In the case *Nowak v The Data Protection Commissioner*, the ECJ was required to consider whether an exam candidate's written answers and the examiner's comments on them are the personal data of the candidate; in other words: the Court faced the question if written opinions and assessments made by an individual and written opinions and assessments made about that individual should be considered personal data. The ruling confirmed this thesis with a motivation that personal data definition has a wide scope 'which is not restricted to information that is sensitive or private, but potentially encompasses all kinds of information, not only objective but also subjective, in form of opinions and assessments, provided that they relate to the data subject'.²³⁸ It seems that, pursuant to the ECJ interpretation, there is little room for any information that relates in any way to an individual to not be considered as personal data about that individual, even if such information is a purely subjective judgment about said individual.

Digital labour platforms process customers' reviews and ratings in order to extract a total reputation score. Obtaining information through customer feedback and their further processing must be transparent for data subjects to enable them to exercise their rights under GDPR and thus to protect their dignity and identity.²³⁹ Therefore, to ensure a lawful data processing, the platforms must meet one of the following requirements *ex* Article 6 GDPR: there is a valid consent of the worker or such processing is necessary for the execution of the contract. With regards to the former, the general logic behind GDPR prevents its application in cases where the freedom of consent could be at risk.²⁴⁰ The power imbalance between the parties of a work relationship jeopardises the free execution of worker's will and for this rea-

²³⁸ CJEU, Case C-434/16, *Peter Nowak v Data Protection Commissioner*, paragraph 34.

²³⁹ See DONINI, A.: *Profilazione reputazionale e tutela del lavoratore: la parola al Garante della Privacy*. In: *Labour & Law Issues*, 2017, Vol. 3, No. 1, pp. 40–41; unlike the notion of dignity, the concept of worker's identity did not interested the labour lawyers and scholars until recent technological evolution. The application of big data analytics systems involves significant risks of compression of the personal identity of the worker, due to the very limited possibility of contextualizing, and thus subtracts truthfulness to the digital representation of the person.

²⁴⁰ The Recital No. 43 states 'in order to ensure that consent is freely given, consent should not provide a valid legal ground for the processing of personal data in a specific case where there is a clear imbalance between the data subject and the controller'. Although this specific point is made with reference to power imbalance between public administrations and natural persons, the gist of it is perfectly transposable to the employment relationships.

son should not be accepted as valid given the nature of the relationship.²⁴¹ Then, if the consent as a valid legal ground for processing of employees' data should be ruled out, the only remaining possibility is to consider it the necessity for the performance of the contract. Such necessity might be justified by the need to build a worker's profile or to publish employee's evaluations for the benefit of future customers;²⁴² in any case it must not be used to facts that are unrelated to the objective of the employment contract.²⁴³

7.2. Internal reputation systems

Both internal and external reputation systems represent only the tip of an iceberg within the efforts to quantify workers.²⁴⁴ However, internal reputation systems are not so strictly tied to gig economy since their use is common principally in the standard employment relationships. Here reputation maintains its sense of evaluated information but with a significant difference in relation to subjects responsible for the assessment and to the extensive automated data processing.

With regards to the first feature of internal reputation, in technologically-enhanced workplace the subjects in charge of quantifying worker's performance is the other party of the contract – the employer. That facilitates the legal assessment to some extent because of the clearer legal framework, but it is not free of complication of different legal nature.

When it comes to its second particularity, the internal reputation does not struggle with the fast evolution of technology – on the contrary, it makes a great use of it. Rating of the employees against their co-workers was one of the managerial trademarks of Jack Welch, former CEO of General Electric who pioneered the idea that the bottom ten percent of the workforce should

²⁴¹ 29 Working Party Guidelines on consent under Regulation 2016/679, 2018, WP259, European Commission, rev.01. Available online: https://ec.europa.eu/newsroom/article29/document.cfm?action=display&doc_id=51030

²⁴² For more detailed assessment see TODOLÍ SIGNÉS, A.: The Evaluation of Workers by Customers as a Method of Control and Monitoring in Firms: Digital Reputation and the European Union's Regulation on Data Protection. In: *Transfer: European Review of Labour and Research*, 2019, Vol. 25, No. 4, p. 7 ff.

²⁴³ Article 29 Working Party Opinion 06/2014 on the notion of legitimate interests of the data controller under Article 7 of Directive 95/46/EC (WP217), pp. 17-18.

²⁴⁴ See CHAPTER I, 4.2 where the subject matter of quantification is seen from perspective of dehumanization effects it produces on the workers.

be removed every year.²⁴⁵ What was at its origins an objectionable management practice has had a rebirth with the algorithmic management.

Call centres evaluating the worker's performance represent the classic example of the rating through algorithms; a new generation of performance management software are able to give the workers very specific, almost human-like feedback.²⁴⁶ Another archetype of internal rating systems could be found in Amazon warehouses. The electronic tools used for work – such as barcode scanners – register all the work activities and communicate them directly to the central information hub where they are visible only to managers. Data obtained then serve to create a ranking system and eventually it could be used for disciplinary reasons.²⁴⁷ During the first year of global pandemic when remote work was at its maximum all over the world, tech giant Microsoft decided to launch a remote worker control tool called The Microsoft Productivity Score. The particularity of this internal reputation system lies in its concealed nature – the tool does not measure individual worker's productivity; instead the overall score is linked to '*organization's people and technology experience*'.²⁴⁸ However, although they are not assigned individual productivity scores, employees' data regarding their activity (number of sent emails on Outlook, meetings on Microsoft Teams, information about time spent on content reading or creating etc.) can be viewed by employer. This way, internal reputational system, even if not properly linked to worker's performance quantification, act as an entryway for excessive monitoring practices.

As for the gig economy representatives, digital platforms do not rely solely on the external feedback but they incorporated algorithmic rating systems based on quantified work performance parameters. Worker's evaluation through algorithm constitutes reputational baggage within the platform's internal market – the workers are competing for the better slots and more hours. Previously described case of Deliveroo's algorithm Frank has shed the

²⁴⁵ It was a system of forced employee ranking which Welch called a vitality curve, nowadays more often known under the name 'rank and yank' or 'stack ranking'. The big American companies like General Electric, Microsoft or Amazon still use this system, notwithstanding its negative connotations for the company. See HILL, A.: Forced Ranking Is a Relic of an HR Tool. In: *Financial Times*, 2012, available online: <https://www.ft.com/content/0243818e-cd09-11e1-92c1-00144feabdc0>.

²⁴⁶ WOOD, A. J.: *Algorithmic Management. Consequences for Work Organisation and Working Conditions*. European Commission, 2021, p. 6.

²⁴⁷ DELFANTI, A.: Machinic Dispossession and Augmented Despotism: Digital Work in an Amazon Warehouse. In: *New Media & Society*, 2019, Vol. 17, No. 1, pp. 10–12.

²⁴⁸ Microsoft Productivity Score overview, available online: <https://docs.microsoft.com/en-us/microsoft-365/admin/productivity/productivity-score?view=o365-worldwide>.

light on its functioning when generating overall internal reputation of riders (see *infra* Chapter 6).²⁴⁹ According to the ruling, the riders booked their work shifts – called slots – via self-service booking software; the booking system was based on a score (*rectius* internal reputation) attributed by the algorithm to each rider and elaborated on two parameters: reliability and participation; each rider was periodically subjected to automated profiling based on statistics processed by the company; said statistics assessed the compliance rate of the last fourteen days of work which was not cancelled within the twenty-four hours term provided for by the Deliveroo regulation. Negative effects of such system go well beyond the possible discriminatory nature of said algorithm – they have to do with competitive pressure that develops within the platforms and generates social tensions about the safeguarding of employment and income levels.²⁵⁰

GDPR is an extremely useful legal tool also when dealing with internal reputation systems, especially because the employers rely with increasing intensity on automated data processing. From regulatory standpoint GDPR addresses the issue in the Article 22, according to which individuals are attributed a right not to be subject to a decision based merely on automated processing,²⁵¹ including profiling, which produces legal effects or similarly significantly affects them – thus representing a guarantee against algorithmic employer. This provision is sometimes referred to as ‘Kafkaesque provision’,²⁵² because of the way it is supposed to combat the suffocating powerlessness and vulnerability deriving from the inscrutability of personal data usage. The metaphor is inspired by Kafka’s masterpiece *The Trial*, where the State’s bureaucracy with inscrutable purposes used people’s information to make important decisions about them, while at the same time denying the people the ability to participate in how their information was used. Automated decision-making enables employers to make decisions by purely technological means based on any type of data. It is irrelevant whether the automated de-

²⁴⁹ Tribunale di Bologna, 7 December 2018, order in the case No. 2949/2020.

²⁵⁰ SIGNORINI, E.: *Il diritto del lavoro nell'economia digitale*. Torino: Giappichelli Editore, 2018, pp. 46–47.

²⁵¹ The term right should not be interpreted as requiring prior opposition of the interested party, but rather as general prohibition for decision-making applicable whether or not the interested data subject takes an action regarding the processing of their personal data. Article 29 Data Protection Working Party, 02/2017, p. 19.

²⁵² ZUIDERVEEN BORGESIU, F.: *Discrimination, Artificial intelligence and Algorithmic Decision-making*. Strasbourg: Directorate General of Democracy, Council of Europe, 2018, p. 40.

cision-making is the result of an assessment of the data provided by the candidates themselves, or data deriving from observation or deduction. The important thing is that it is a decision without human intervention. Automated decision-making can be done with or without profiling, and vice versa, profiling can be executed without automated decision making; nevertheless, in the latter case GDPR provisions would not apply due to their relevance only for automated profiling.

Automated decision-making is involved in a vast number of situations ranging from low to high impact, the latter including the employment area and access to it. In order to avoid its negative consequences, Article 22 paragraph 3 allows for such process only if certain legal safeguards are met.

In primis, the right to obtain human intervention²⁵³ acts like a guarantee against the decisions of not-really-intelligent artificial intelligence (AI) and it presumably stems from (fully justified) diffidence with regards to automated decision-making. Certain level of apprehension has been expressed also by European Commission when stating that humans could tend to rely too much on the apparently objective and incontrovertible decisions generated by AI, thus abdicating their own responsibilities to investigate and determine the matters involved.²⁵⁴ By voicing such concerns, European institutions made claims that go deeper than a simple fear of biased algorithms – claims that see at stake *‘upholding of very human dignity, by ensuring humans (and not their ‘data shadows’) to maintain the primary role in constituting themselves’*.²⁵⁵ Relevant observations are strictly linked to data/information distinction in

²⁵³ Human intervention should be qualified as such when the review is carried out by someone who has the appropriate authority and capability to change the decision. Furthermore, the reviewer should undertake a thorough assessment of all the relevant data, including any additional information provided by the data subject. Article 29 Data Protection Working Party, 02/2017, p. 27. However, it is not clear who this human should be and whether he or she will be able to review a process that may have been based on third party algorithms, pre-learned models or data sets including other individuals’ personal data or on opaque machine learning models. Nor is it clear whether the human tasked with reviewing the decision could be the same person who made the decision in the first place, still potentially subject to the same conscious or subconscious biases and prejudices in respect of the data subject as before. MAYER-SCHOENBERGER, V., PADOVA, Y.: Regime Change? Enabling Big Data Through Europe’s New Data Protection Regulation. In: *Science and Technology Law Review*, 2016, Vol. 17, No. 2.

²⁵⁴ Amended proposal for a Council Directive on the protection of individuals with regard to the processing of personal data and on the free movement of such data. COM (92) 422 final, 18 October 1992, p. 26.

²⁵⁵ MENDOZA, I., BYGRAVE, L.: The Right Not to Be Subject to Automated Decisions Based on Profiling. In: *EU Internet Law: Regulation and Enforcement*. Springer, 2017, p. 77.

relation to the use of sophisticated algorithms. As previously stated with regards to algorithmic discrimination, when data convey the abstractions of real-world entities – as opposed to a linear representations of such entities in human profiling – they fail to disclose complete image of what they represent. Hence, automated decision-making can be potentially executed against the backdrop of an incomplete portrait of natural persons.²⁵⁶

Secondly, the existence of the right to explanation, yet explicitly missing from the legal provision of Article 22, has been repeatedly defended by scholarly interpretation.²⁵⁷ Even the recital 71 GDPR mentions among other things that the use of automated decision-making should entail ‘*the right of data subject to obtain an explanation of the decision reached after such assessment*’. However, recitals generally lack an actual prescriptive content and therefore are not enforceable,²⁵⁸ although they do have an impact on the interpretative outcomes of the operative part of the regulation.²⁵⁹ In any case, if the concept present in the recital is not given concrete expression in the actual body of the act, it is the terms of the latter that must predominate.²⁶⁰ Legal scholarship has tried to deduce the right to explanation from Articles 13 and 14 GDPR dealing with the right to be informed.²⁶¹ As already discussed with regards to non-automated profiling, these provisions establish the duty

²⁵⁶ Even broader explanation has been offered in support of this theory, when arguing that algorithms are incapable of reflecting some aspects for human personality not merely because of inadequate modelling issue, but rather as a necessary consequence of the human condition. See HILDEBRANDT, M.: Privacy as Protection of the Incomputable Self: from Agnostic to Agonistic Machine Learning. In: *Theoretical Inquiries of Law*, 2019, Vol. 20, No. 1.

²⁵⁷ The first ever mention of the alleged existence of right to explanation could be found here: GOODMAN, B., FLAXMAN, S.: EU Regulations on Algorithmic Decision Making and a ‘Right to Explanation’. In: *International Data Privacy Law*, 2017, Vol. 7, No. 4; the discourse drew from the experience of already previously existing right to explanation in the EU data protection directive which preceded GDPR, Directive No. 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and the free movement of such data.

²⁵⁸ See CJEU, Case C-162/97, *Nilsson*, 1998, para. 54, according to which the preamble to a Community act has no binding legal force and cannot be relied on as a ground for derogating from the actual provisions of the act in question.

²⁵⁹ CJEU, Case C-215/88, *Casa Fleischhandels*, 1989, para. 31: ‘*recital in the preamble to a regulation may cast light on the interpretation to be given to a legal rule*’.

²⁶⁰ BARATTA, R.: *Complexity of EU Law in the Domestic Implementing Process*, 19th Quality of Legislation Seminar ‘EU Legislative Drafting: Views from those Applying EU law in the Member States’. Brussels, 2014.

²⁶¹ DROZDZ, A.: *Protection of Natural Persons with Regards to Automated Individual Decision-making in the GDPR*. Kluwer Law International, 2020, pp. 74–82.

to inform individuals – clearly and with simplicity – about processing their data as well as to provide clarification about the logic involved and its possible consequences. Yet, this theory has been proven insufficient in its reasoning.²⁶² Given that the duty to inform *ex ante* Articles 13 and 14 have to be fulfilled when the data is collected or within a reasonable period of time after obtaining the personal data, such notification duty would conceivably precede the decision-making process. On the contrary, right to explanation would require *ex post* inquiry about the decision taken by automatic means, to allow the interested party to understand the reasons for the specific decision.²⁶³ Similarly failed the doctrinal theory founding the right to explanation in right to access under the provision of Article 15 GDPR. Article 15, paragraph 1 letter h), in the same manner as the Articles 13 and 14, grants the right to be informed about the existence of automated decision-making and to obtain meaningful information about the significance, logic involved and envisaged consequences, but – lacking said provision any time limits – it allegedly allows to invoke such right also *ex post*, after the decision has been made. Nonetheless, this interpretation has found its weak spot in the literal analysis of the provision's wording, suggesting the collocation of the right to explanation before actual decision-making process occurs.²⁶⁴

The last but not least, rights to express the point of view and to contest the decision pursuant to Article 22, paragraph 3 seem to be strictly linked to the alleged right to explanation. Since they are both related to substance of the decision, impossibility to decipher the logic behind the specific automated decision make the rights to contest and to express the point of view merely ‘an empty shells.’²⁶⁵

²⁶² Ibidem.

²⁶³ *Ex post* explanation represents the only feasible kind for the purposes addressing the *rationale* of a specific decision, without precluding the importance of *ex ante* explanation. The latter takes place before the specific decision has been made and thus falls under the scope of Articles 13 and 14 – the duty to inform which addresses the system functionality, the general logic, purpose, significance and envisaged consequences. WACHTER, S., MITTELSTADT, B., FLORIDI, L.: Why a Right to Explanation of Automated Decision-making Does Not Exist in the General Data Protection Regulation. In: *International Data Privacy Law*, 2017, Vol. 7, No. 2, p. 78.

²⁶⁴ For the exhaustive explanation see WACHTER, S., MITTELSTADT, B., FLORIDI, L.: Why a Right to Explanation of Automated Decision-making Does Not Exist in the General Data Protection Regulation. In: *International Data Privacy Law*, 2017, Vol. 7, No. 2, pp. 83–84.

²⁶⁵ BRKAN, M.: Do Algorithms Rule the World? Algorithmic Decision-making in the Framework of the GDPR and Beyond. In: *International Journal of Law and Information Technology*, 2019, Vol. 27, No. 2, p. 107.

In the light of previous considerations the actual enforcement of the right to explanation seems like a bleak prospect. And yet, one could argue that without the power to invoke opening of the black box behind the automated decision, the other safeguards listed in Article 22 lose their feasibility. The only hope could come from the future ECJ case-law ensuring the broader interpretation of Article 22, inclusive of the right to explanation.

Consequently, the said GDPR provision does not constrain the use of algorithmic decision-making systems, but obliges the subject who processes the data to provide for certain technical mechanisms that ensure the humanization of the final decision, thus rebalancing the disproportion of contractual power on site of job candidates/employees exposed to automated algorithmic decisions.

Scholarship addressed another harsh critique towards the provision of Article 22, stating its inefficiency in the context of machine learning algorithms and the fact that it can be easily sidestepped.²⁶⁶ The reference to '*decisions based solely on automated processing*' indicates the total absence of human involvement in the decision process.²⁶⁷ Any form of routine human intervention involved would mean that Article 22 is not applicable, even if such routine decisions may have the same result as entirely automated decision making.

As a solution, one could consider inverting the logic behind Article 22 application. Especially considering that algorithmic reasoning through correlations may not seem always acceptable from human perspective since it is not able to detect the causal relationships between real world phenomena. For instance, if company with majority of male staff searches for new recruitment, algorithm could attribute higher ranking to men candidates based on their affinity to previously hired candidates that listed interest in football in their CV. Algorithms would not question human decisions implied in dataset, it could be probably even set to ignore the gender of applicants, but eventually it would result in discriminatory ranking. For this reason, the safeguards enshrined in Article 22 should apply whenever the algorithmic automated reasoning is involved at any stage of decision making. Rather than human intervention in the process excluding the protection of Article 22, *mutatis mutandis*, its safeguards should activate with every partial algorithmic intervention.

²⁶⁶ See, for instance, ZARSKY, T. Z.: Incompatible: The GDPR in the Age of Big-data. In: *Seton Hall Law Review*, 2017, p. 995.

²⁶⁷ Article 29 Data Protection Working Party, 02/2017, pp. 20–21.

Both the potential as well as the limits of said provision seem to be important; in any case – where automated rating systems are used to generate an internal reputation of the worker, the safety net of Article 22 should activate: the right to obtain human intervention, right to explanation and to contestation.

In conclusion, digital reputation plays an important role in the modern working arrangements, both conventional and atypical. Arguably, external sources represent a risk of being biased because of the human evaluation involved; on the other hand internal reputation can be biased because of the opaque algorithmic assessment.

Particularly relevant is the non-transparent nature of information flow – the performance data are accessible only to those with the managerial prerogatives. Whereas reputation systems are justified by the need to reduce an information asymmetry between the parties of the transaction, both external and internal reputation systems seem to be operating in reversed mode: while the employer do get the detailed account about the worker's behaviour, the weaker party of the employment contract see only the partial information about the individual work performance but not the aggregated data – hence the bug in the theory of the information asymmetry.

Standard labour law framework has some outreach in the reputational systems, especially where the classic employment relationships are in place and the evaluation is carried out by one party of the contract; however it struggles to incorporate new dynamics in the platform economy.

On the other hand, European regulation about data protection has demonstrated once again its prominent place among the modern legal instruments addressing technological changes. All in all, the GDPR covers some crucial aspects of workers' evaluation. Thanks to recognition of reputation as a personal data under the regulation, evaluation systems must comply with a wide range of GDPR provisions, depending on whether the profiling has more human or more automated nature.

8. NEW FORMS OF EMPLOYMENT – OVERSTEPPING THE QUALIFICATION THRESHOLD, IN AND OUT OF GIG ECONOMY

'It is a truth universally acknowledged...', exclaims famously Jane Austen when introducing the storyline of *Pride and Prejudice*, followed by accurate yet amusing observation about societal dynamics of the time – namely the desirable necessity for a wealthy bachelor to get married.²⁶⁸ One of the most famous opening lines in the English literature is loaded with certain amount of normativity,²⁶⁹ easily applicable to most affirmations justifying this or that societal conduct. However, Austen's statement was supposed to serve a double objective – on the surface it conveys a message about unbreakable social norm, yet on the inside it is permeated with author's mockery.²⁷⁰

Similarly, in current labour law discourse it is indeed a truth universally acknowledged that digital labour platforms create tension in the traditional labour law dichotomy between subordinate work and self-employment. If, on the one hand, the observation is accurate when it states an obvious *status quo*, on the other hand it should be looked at with inevitable irony. This chapter will take inspiration in Austen's ironic perception in order to achieve some insights within already very rich academic discourse on the topic.²⁷¹

²⁶⁸ AUSTEN, J.: *Pride and Prejudice*. Penguin Classics, 2015; *'It is a truth universally acknowledged, that a single man in possession of a good fortune must be in want of a wife. However little known the feelings or views of such a man may be on his first entering a neighbourhood, this truth is so well fixed in the minds of the surrounding families, that he is considered the rightful property of some one or other of their daughters.'*

²⁶⁹ DELACROIX, S.: Understanding Normativity. In: *Revus*, 2019, Vol. 37, pp. 17–28, available online: <https://journals.openedition.org/revus/4773>.

²⁷⁰ Austen offers a witty look at the marriage customs through the misfortunes of five Bennett sisters.

²⁷¹ Only considering the Italian scholarship, the literature on the issue is endless, but to mention just a few: DE STEFANO, V.: The Rise of the 'Just-in-time Workforce': On-demand Work, Crowdsourcing, and Labour Protection in the 'Gig Economy'. In: *Comparative Labour Law and Policy Journal*, 2016, Vol. 37; ALOISI, A.: Commoditized Workers: Case Study Research on Labour Law Issues Arising from a Set of 'On-demand/Gig economy' Platforms. In: *Comparative Labour Law and Policy Journal*, Vol. 36, 2016; DONINI, A.: *Il lavoro attraverso le piattaforme digitali*. Bologna: Bononia University Press, 2019.

Once the recruitment process is successfully over, some kind of work relationship is bound to depart, depending if the executed work checks the imaginary boxes of employment contract or self-employment. Technological progress has rendered the ancient classification issues even more tortuous. Work is being organised and executed via digital platforms in a broader context of platform capitalism ‘with its characteristic conditions of monopolization, concentrated economic and political power and cultures of systematic regulatory evasion’.²⁷² The war of rival narratives is in progress. Conventional narrative about platforms promoting fairer labour markets, economic growth and flexibility is being contrasted by a counter-narrative trying to deflate the techno-deterministic bubble.²⁷³

Arguably, the ideological standpoint is equally important here as the regulatory one. When Vardaro stated that ‘*ideology of technology (...) might appear today in the simple proposal of technological innovation as a new subject super partes*’,²⁷⁴ he stepped right into the core of the clash of the abovementioned narratives. Techno-deterministic narrative seems to be based on a simple fallacy that technology is the engine of social change when incorporated in the process of economic production – as such it is able to both shape and be shaped by social forces, it is both determined and determining.²⁷⁵

Technological determinism further exploits the etymological meaning of *techne* strictly linked to its usefulness and instrumentality, but it typically lacks the heideggerian broader perspective; gradually, advancements of modern technologies culminated in new forms of work making use of the ‘perverse expression of *techne*’ that denies its existential connotations.²⁷⁶ In other words, modern technology has an ability to dominate subjectivity with objectivity. In the context of existing labour relations it means a risk of further quantification of work performance as well as of the workers, but also

²⁷² PECK, J., PHILLIPS, R.: The platform conjuncture. In *Sociologica*, 2020, Vol. 14, No. 3, p. 73.

²⁷³ PASQUALE, F.: Two Narratives of Platform Capitalism. In: *Yale Law & Policy Review*, Vol. 35, No. 1, pp. 309–320.

²⁷⁴ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 127.

²⁷⁵ PETERS, J. D.: ‘You Mean My Whole Fallacy Is Wrong’: On Technological Determinism. In: *Representations*, 2017, No. 140, p. 14.

²⁷⁶ ŽIŽEK, S.: *In Defence of Lost Causes*. Verso, 2008, pp. 447–452.

the deepening of existential subordination (*rectius* alienation). Hence the need for the ‘enhancement of the labour law’s subjective profile.’²⁷⁷

Digital labour platforms found themselves in the centre of this ideological and dogmatic turmoil. They are IT-driven web providers that match demand and supply of work and services at an extremely high speed; when work provided takes place online then it is called crowdwork; if, on the contrary, work is executed offline but only managed by the platform app it is referred to as on-demand work.²⁷⁸ The fact that platforms rely entirely on AI and algorithms to ‘move the work and workers around’ had them labelled as a new business model,²⁷⁹ and even more importantly as a new labour model. However, although certainly new and innovative in many ways, their revolutionary character has been questioned. Some commentators pointed out, for instance, their likeness with the proto-industrial *Verlagssystem* – a system that represented a transitional phase in the economic history before the definitive migration of the home-based artisanal production to the urban factories.²⁸⁰ It consisted essentially from countryside domestic workers producing goods for non-local markets, in particular the emerging industrialised urban factories.²⁸¹ The similarities between two economic models go as far as the issue of workers’ misclassification,²⁸² definitely salient in the platform economy, but include also the exploitation of cheap labour force (from the countryside as opposed to city-based platform workers), time flexibility (home-based work

²⁷⁷ VARDARO, G.: *Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro*. In: *Politica del Diritto*, 1986, No. 1, pp. 123–128.

²⁷⁸ Famous dual classification of digital labour platforms is the merit of Prof. De Stefano in a groundbreaking DE STEFANO, V.: *The Rise of the Just-in-Time Workforce: On-Demand Work, Crowdwork, and Labor Protection in the Gig-Economy*. In: *Conditions of Work and Employment Series*, No. 71, ILO, Geneva; he provides for a practical distinction between crowdwork and work-on-demand via apps, where the former represents a work executed through online platforms that put in contact an indefinite number of organisations, business and individuals through the internet, while the latter stands for traditional offline working activities (transport, cleaning running errands and also clerical work) that are mediated through mobile apps.

²⁷⁹ SRNICEK, N.: *Platform Capitalism*. Polity Press, 2016.

²⁸⁰ FINKIN, M. W.: *Beclouded Work in the Historical Perspective*. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 37, No. 3.

²⁸¹ OGILVIE, S., CERMÁN, M.: *European Proto-industrialization*. Cambridge: Cambridge University Press, 1996, pp. 1–5; the authors advocate that the era of proto-industrialization occurred between 1500 and 1800 in all Europe. For the American perspective claiming the existence of proto-industrial economic model up until the mid-twentieth century see FINKIN, M. W.: *Beclouded Work in the Historical Perspective*. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 37, No. 3, pp. 6–7.

²⁸² *Ibidem*, pp. 14–15.

allowed for an effective work-life balance, while in the platform economy it remains more of an idealistic narrative), and lastly, splitting production into tiny orders/gigs as a form of reducing business risk resulting in ability to adjust to oscillating demand.²⁸³

Such affinity should not be surprising at all if put in the broader historical-economic context – both *Verlagssystem* and platform economy belong to interregnum eras; the former developed in the primordial stages of capitalism that saw the decline of traditional guild regulation and manufacturing moved to unregulated rural areas,²⁸⁴ whereas the latter takes place at the very beginning of the ‘second machine age’²⁸⁵ where the labour is moved to unregulated digital space.

Given the foregoing, the focal point of the discourse shall not be the uniqueness of digital platforms’ employment model, but rather how they involuntarily and unwillingly contributed to a diffusion of knowledge about perils of digital era. One can affirm that they represent a battlefield – only the backdrop against which the main battle is fought; the battle that involves issues well beyond the classification problem of platform workers, but rather affects the very tenets of the labour law.

That said, due considerations must be made with regards to the factual and legal background of the phenomenon, in order to move with the analysis to a less explored territory of algorithmic management in employment (see *infra*, chapter 7).

European Union has been less hospitable environment for the platform economy compared to USA or UK, nonetheless its presence in European labour market has been slowly increasing over the last years.²⁸⁶ At the very be-

²⁸³ VOZA, R.: Il lavoro e le piattaforme digitali: The Same Old Story? In: *WP C.S.D.L.E. ‘Massimo D’Antona’.IT*, 2017, No. 336, p. 5; with regards to the last feature, Voza specifies that the affinity between two models concerns only the common economic-productive matrix, and not also the legal categories. According to BODIE, M. T.: Workplace FREAKONOMICS. In: *Journal of Law and Policy for Information Society*, 2017, Vol. 14, No. 1, p. 41, excessive fissuring of work is only a continuation of the struggle to optimize the production by breaking the labour in smaller parts, first by simple division of labour proposed by Adam Smith, then by Taylor’s breaking down larger jobs into their specific component parts, and finally, by internet-driven ‘opportunities’ of work on micro-tasks.

²⁸⁴ OGILVIE, S., CERMÁN, M.: *European Proto-industrialization*. Cambridge: Cambridge University Press, 1996, pp. 1–5

²⁸⁵ BRYNJOLFSSON, E., MCAFEE, A.: *La nuova rivoluzione delle macchine. Lavoro e prosperità nell’era della tecnologia trionfante*. Feltrinelli Editore Milano, 2019, p. 13 ff.

²⁸⁶ Vast majority of platform enterprises is headquartered in USA or UK. With regards to EU, since 2016 the number of digital labour platforms active here has increased from 463 only

ginning the outburst of digital labour platforms has brought the issue of their legal nature, especially with regards to work provided on demand via apps such as food delivery or ride hailing. In *Elite Taxi v. Uber* case,²⁸⁷ European Court of Justice ('ECJ') has stated that the service provided by the company is not that of an IT company, but it is inextricably linked to the transport and is therefore covered by the transport service classification. This judgment, while largely irrelevant from the labour law perspective,²⁸⁸ addressed the civil litigation issue (widespread in the Member States²⁸⁹) concerning the need for an administrative concession depended on Uber's business nature and consequently its engaging in unfair competition practices.

From labour law guarantees' standpoint, more important issue has been tackled all over the world by courts when deciding on the classification of digital platform work arrangements. However, very different outcomes have been reached while remaining within the boundaries of national laws.²⁹⁰

to 516, but their revenues went up more steeply - from 3.4 billion to 14 billion in the same time period. DE GROEN, W. P., KILHOFFER, Z., WESTHOFF, L., POSTICA, D., SHAMS-FAKHR, F.: *Digital Labour Platforms in the EU. Mapping and Business Models. Final Report*. Luxembourg: Publications Office of the European Union, 2021, p. 8.

²⁸⁷ In the present case, the reference for a preliminary ruling under Article 267 of the Treaty on the Functioning of the European Union initiated (TFEU) by the Commercial Court no. 3 in Barcelona, Spain (Juzgado de lo Mercantil No. 3 de Barcelona), which related to a dispute between the Asociación Profesional Elite Taxi against Uber Systems Spain, SL. The essence of the national dispute in question was the fact that Uber System Spain SL offered transport with non-professional drivers who have their own motor vehicle.

²⁸⁸ For full judgment analysis, focusing rather on typical labour issue of worker classification, see DELFINO, M.: Work in the Age of Collaborative Platforms between Innovation and Tradition. In: *European Labour Law Journal*, 2018, Vol. 9, No. 4, pp. 346–353.

²⁸⁹ By way of example Court of Milan (Tribunale di Milano) in the injunction from 25 May 2015 affirmed that there is a competitive relationship between the transport service by taxi and that provided by Uber drivers, due to the fact that both are capable of satisfying the same transport needs of customers. Consequently, the Milanese judge did not accept the reconstruction of the defendant, according to which UberPop is 'a computer application that serves to promote forms of shared transport created directly by users', Tribunale di Milano, injunction from 25 May 2015, in *Rivista di Diritto Industriale*, 2015, p. 245 ff, nota a sentenza di Giove and Comelli; Court of Appeal in Bratislava (Krajský súd Bratislava) in its judgment No. 4CoPv/5/2018 from 15 November 2018 deemed 'absolutely necessary that the defendant, who obviously operates a taxi service in the territory of the Slovak Republic, in the performance of this business activity, as well as other taxi operators operating on the market, comply with all legal conditions and preconditions for proper and lawful operation in accordance with the provisions of Act No. 56/2012 on road transport and related regulation in accordance with other relevant legislation of the Slovak Republic'.

²⁹⁰ For a thorough account on global case-law concerning platform work classification see DE STEFANO, V., DURRI, I., STYLOGIANNIS, CH., WOUTERS, M.: *Platforms Work and the*

Some national court rulings have classified platform workers as self-employed persons and barred them from most labour protections.²⁹¹ Others opted for *tertium genus* category; a hybrid category that – depending on its national legal definition – would seldom extend the labour protection to platform workers,²⁹² but instead it would usually represent a ‘discounted alternative to a standard employment contract’.²⁹³

In the remaining cases courts held that platform workers are employees, generally basing their evaluation on the indicia such as control through technology and flexibility of working time. Through courts’ activity labour law seems to be redesigning its boundaries in a universalistic perspective, in which subordination acquires the characteristics of a ‘cumulative concept’ capable of attracting concrete cases at risk of exclusion.²⁹⁴ Judicial decisions have generally paved the way to some legislative interventions, like in Italian case, where labour protection has been extended to all workers (regardless of their employment status) whose work is organised by another party (‘hetero-organised’) pursuant to Article 2 of the Legislative Decree No. 81/2015.

Employment Relationship. ILO Working Paper No. 27, Geneva: ILO, 2021; for European case-law analysis see HEISSL, CH.: Case Law on the Classification of Platform Workers: Cross-European Comparative Analysis and Tentative Conclusions. In: *Comparative Labour Law & Policy Journal* (Forthcoming), 2021, report prepared for the European Commission, Directorate DG Employment, Social Affairs and Inclusion, Unit B.2 – Working Conditions, within the framework of the European Centre of Expertise in the Field of Labour Law, Employment and Labour Market Policies (ECE).

²⁹¹ Some courts’ arguments were based on workers’ autonomy in terms of choosing when to work: Superior Tribunal de Justiça, 28 August 2019, No. 164.544 – MG (2019/0079952-0); Tribunale di Torino, 7 May 2018, No. 778/2018; in a case of one Belgian judgment exerting control over Uber drivers was not seen as sufficient element of subordinate work due to same control allegedly being exercised on passengers: Tribunal de l’entreprise francophone de Bruxelles, 16 January 2019, No. A/18/02920.

²⁹² This is a case of Canadian notion of dependent contractor, applicable to subjects weak from the socio-economic point of view in a balancing function of the market, that by granting them collective rights is capable of making them more visible and heard. Canadian *tertium genus* was born in 1960s for this very reason and was only waiting for the first confrontation of the gig economy in front of the judge, namely in judgment CanLII 16750 of 25 February 2020, Canadian Union of Postal Workers v Foodora Inc., see LACKOVA, E.: I riders e il tertium genus canadese nell’epoca digitale. In: *Rivista Italiana di Diritto del Lavoro*, 2020, No. 3, pp. 582–589.

²⁹³ CHERRY, M. A., ALOISI, A.: Dependent Contractors in the Gig Economy: A Comparative Approach. In: *American University Law Review*, Vol. 66, No. 3, p. 666.

²⁹⁴ PERULLI, A.: Il diritto del lavoro ‘oltre la subordinazione’: le collaborazioni etero-organizzate e le tutele minime per i riders autonomi. In: *WP C.S.D.L.E. ‘Massimo D’Antona’*.IT, 2020, No. 410, p. 7.

The Italian Supreme Court in its ruling No. 1663 of 24 January 2020 elegantly postponed the difficult classification question to future times,²⁹⁵ choosing instead a remedial approach to extend the discipline of subordinate work to subjects in ‘a weaker working position due to the obvious asymmetry between provider and worker’. The Court *de qua* has confirmed the anti-elusive function of the provision *ex* Article 2, paragraph 1 of Legislative Decree No. 81/2015, when partially reforming the purposive approach of the Court of Appeal of Turin²⁹⁶ and extending the entire discipline of subordinate work to riders. Supreme Court ruling – without any doubt a leading case – represents a hermeneutic stratagem for expanding the labour law protections since its motivation is based (also) on the grounds of legislative changes of said provision that intervened in the meantime.²⁹⁷

Like in the Italian case at hand, comparable expanding tendency of labour law protections is evident at supranational level as well.

In its resolution of 16 September 2021 European Parliament called for a rebuttable employment status presumption in litigation to empower platform workers,²⁹⁸ a tool repropounded in the draft of platform work directive published later the same year.²⁹⁹ Proposal of platform work directive appears

²⁹⁵ In this sense see MAZZOTTA, O.: L'ineffabile etero-direzione: a proposito di ciclo fattorini e modelli contrattuali. In: *Labor*, 2020, No. 1, p. 20, who claims maximum of pragmatism, critically also CARINCI, F. *Lart*. 2 d.lgs. No. 81/2015 ad un primo vaglio della Suprema Corte: Cass. 24 gennaio 2020, No. 1663. In: *LDE*, 2020, No. 1, p. 7.

²⁹⁶ Corte d'Appello di Torino, 04 February 2019, No. 26.

²⁹⁷ The reform of Article 2 and introduction of the title *V-bis* to the Legislative Decree No. 81/2015 has been introduced by the Law No. 128/2019 which converted with modifications the Law Decree No. 101/2019. Along with said changes also the Title *V-bis* has been introduced with an *ad hoc* protective discipline for self-employed riders, that surprisingly achieves the expansion of labour protection in even stronger and unprecedented way. While the protection of riders *ex* Article 2 applies to those whose work is inserted continuously in the organization of the platform that also determines the modality of its execution, the discipline contained in Title *V-bis* shall be applied to occasional, non continuous collaborations with the platform, albeit also hetero-organised. The main difference is thus represented not by autonomy of the worker in determining the modality of work performance, but rather by its continuity in time. For the thorough analysis of the reform see NUZZO, V.: Il confine delle tutele lavoristiche, oggi. In: *Costituzionalismo.it – A cinquant'anni dallo Statuto dei lavoratori, nuove tecnologie e società della sorveglianza*, 2020, Vol. 1.

²⁹⁸ European Parliament resolution of 16 September 2021 on fair working conditions, rights and social protection for platform workers – new forms of employment linked to digital development.

²⁹⁹ Proposal for a Directive of the European Parliament and of the Council on improving working conditions in platform work, published 08 December 2021.

to create a regulatory umbrella for both employees and the ones who can be solely deemed to be employees based on an assessment of facts.³⁰⁰

Similar instrument came into force in one U.S. state on 1 January 2020 with California Assembly Bill 5 (AB5), but it has been steamrolled almost immediately thanks to strong lobby of digital platforms companies.³⁰¹ Transportation and delivery platform companies have obtained an explicit exemption from AB5 through a ballot initiative called Proposition 22, considering once again app-based drivers to be self-employed ‘independent contractors’. However, in the aftermath of the vote, the Proposition 22 has been declared unconstitutional and whole measure unenforceable,³⁰² making the future of AB5 employment presumption still unclear.

Meanwhile in Europe, the first and foremost objective that the proposal of platform work directive seeks to realise is ensuring the correct employment status for platform workers (although the list of objectives include also fairness, transparency and accountability in algorithmic management and enhancing transparency in platform work and improving enforcement of applicable rules). Tackling the wide-spread misclassification of workers as self-employed ‘micro-entrepreneurs’ begins with a strong reassertion of the principle of primacy of facts. The European primacy of facts principle, as established by ILO Recommendation No. 198³⁰³ and recognised by the CJEU in *FNV Kunsten*,³⁰⁴ finds its counterpart in Italian *indisponibilità del tipo* principle, both focusing on actual nature of the legal relationship rather than on its contractual description.

³⁰⁰ Article 1, par. 2 of the Proposal of platform work directive.

³⁰¹ The ballot in initiative Proposal 22 was strongly advocated by Republican Party and received a substantial funding from digital platform companies – the same companies that had an economic interest in avoiding employment regulation. Detailed and transparent account of the ballot is available online: [https://ballotpedia.org/California_Proposition_22,_App-Based_Drivers_as_Contractors_and_Labor_Policies_Initiative_\(2020\)](https://ballotpedia.org/California_Proposition_22,_App-Based_Drivers_as_Contractors_and_Labor_Policies_Initiative_(2020)).

³⁰² *Castellanos v. California*, Case No. RG21088725, Superior Court of the state of California, County of Alameda.

³⁰³ Employment relationship Recommendation No.198, 2006, states that in order to determine the existence of employment relationship, the facts relating to work performance and remuneration should be taken into account, notwithstanding any contrary contractual arrangement between the parties.

³⁰⁴ CJEU, Case C-413/13, *FNV Kunsten v Staat de Nederlanden*, 4 December 2014. The decision in the field of boundaries of labour exception to antitrust law has directly challenged the concept of worker developed in the CJEU case law. On the basis of primacy of facts principle the Court provided for empirical rather than formal reading of employment status of Orchestra workers in order to grant them right to collective bargaining. Par. 37.

In the light of existing drafts, proposals and resolutions at European level it seems safe to assume that rebuttable legal presumption of subordination will make it through the legislative process. However, if it is true that platform economy workers need to be provided with the correct employment status, it is also true that the rule cannot be based on *ex post* case-by-case evaluation.³⁰⁵ A sustainable business model cannot be built in the grey area, waiting for another court ruling to determine the status of platform workers – there is a need for clarity and objective criteria.

The concerns expressed at the beginning of this chapter regarded the risk of exclusive academic and jurisprudential attention towards the issue of misclassification. However, as the proposal of platform work directive suggests and as it will be further analysed here, while of a key importance, the classification of platform workers represents only the threshold issue. Algorithmic management of workers must also be of primary interest of doctrine and law-makers and it is not limited to platform work arrangements. Consequently the monograph will proceed with the ‘vertical examination’ of the phenomena typically present in the technologically-enhanced workplace.³⁰⁶

³⁰⁵ In this sense for example DE STEFANO, V., ALOISI, A.: Who Will be Covered by an EU Instrument on Platform Work? In: *socialeurope.eu*, 2021, available online: <https://socialeurope.eu/who-will-be-covered-by-an-eu-instrument-on-platform-work>.

³⁰⁶ Reference is to the vertical approach in examining salient profiles of working arrangements typical for gig economy, adopted in particular in INGRAO, A.: I sistemi di feedback basati su rating e reviews tra controllo della prestazione lavorativa e divieto di decisioni automatizzate. In: *Impresa, lavoro e non lavoro nell'economia digitale*. Cacucci Editore, 2019; the author has chosen such methodology as opposed to more common horizontal approach that enables to select authentic needs for protection.

9. ALGORITHMIC MANAGEMENT THROUGH EMPLOYER'S PREROGATIVES

Algorithms are extensively used to regulate a day-to-day employment relationship by taking employer's place in execution of his prerogatives.³⁰⁷ Use of algorithmic management enables to make work assignments, track workers' hours, assess their performance – in other words to manage the workforce more efficiently through automation and routinization. In doing so they are not necessarily inconsistent with existing laws but they rather use the obsolete regulations in their favour or they find smart ways to lawfully avoid employment norms. This way employers perpetuate a 'regulatory hack' – a concept coined to describe '*unlawful noncompliance, lawful avoidance strategies and conduct that falls somewhere in between*' linked to the use of new technologies in work relationships.³⁰⁸

As a matter of fact, introducing algorithms in the productive process in most cases looks like perfectly legal entrepreneurial strategy. In reality the employers use various legal or technological loopholes that can *de facto* compromise workers' rights or the overall work quality. It has been argued, for instance, that Directive 2019/1152 on transparent and predictable working conditions includes an obligation for employers to inform worker about the number of guaranteed paid hours and the timeframe within which the worker may be required to work; however, the said directive does not address the effects of the algorithmic optimization of work opportunities. The algorithm behind scheduling software may be set to avoid the cost-triggering threshold like the overtime entitlement without representing an illegal practice.³⁰⁹ While algorithm allocating work shifts to workers with less hours may seem generally as a fair measure, the cold automated decision-making and the lack of human empathy and understanding can harm employees in ways that are

³⁰⁷ As correctly underlines De Stefano '*the use of AI, management by algorithm and People Analytics are, per se, a form of automation of middle-managerial and managerial roles*'. See DE STEFANO, V.: 'Negotiating the algorithm': Automation, Artificial Intelligence, and Labor Protection. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1, p. 30.

³⁰⁸ ALEXANDER, C. S., TIPPETT, E.: The Hacking of Employment Law. In: *Missouri Law Review*, 2017, Vol. 82, No. 4, p. 976.

³⁰⁹ *Ibidem*, pp. 999–1001.

not anticipated by labour law, and on top of that it can jeopardise the predictability and stability of worker's schedules.³¹⁰

Management by algorithm should not be understood as a substitution of human managers with technology, but rather as *'a sociotechnical process emerging from the continuous interaction of organizational members and the algorithms that mediate their work'*.³¹¹ It means that instead of a clear divisive line between two executors of employer's prerogatives – algorithms and humans, these tend to function in a collaborative mode with progressive blending of boundaries between their responsibilities. Indeed, the extent of technological involvement varies from workplace to workplace – in some work settings, such as on-demand platforms, work organization is strongly dependent on algorithms running and controlling tasks' execution; in more conventional employment relationships, however, algorithmic systems emerge within pre-existing power dynamics between employers and workers.

Some time ago, when solely human employers could manage the labour process, labour law responded with the protective regulation – labour law was regulating the employer's management of work. Today, questions arise spontaneously: is the integration of human managers with algorithms enough to eradicate this paradigm? Should it be the algorithms that regulate the labour, or is it still labour law's primary concern? Does current legal framework leave the algorithms to a wild self-regulation and employers to perpetuate regulatory hacking?

9.1. Employer's directive prerogative in the light of new hetero-direction

In traditional relationships marked with subordination, employers use algorithmic management to direct employees as an enactment of their typical directive prerogative. Employer's directive power traditionally consists of two aspects: power of conformation of work performance and power of spatial and temporal coordination of said performance within the overall organization. This prerogative represents an instrument of 'functional flexibility'³¹² that allows to adapt the work to the changing organizational needs of

³¹⁰ Ibidem.

³¹¹ JARRAHI M. H. et al.: Algorithmic Management in a Work Context. In: *Big Data & Society*, 2021, Vol. 14, No. 1, p. 2.

³¹² PERULLI, A.: Il potere direttivo dell'imprenditore. Funzioni e limiti. In: *Lavoro e diritto*, 2002, Vol. 3, p. 398.

the company. Furthermore, directive power does not simply stand for a management tool for employers, but rather – according to old-time legal doctrine³¹³ – its presence reveals the existence of subordination, of which it represents a quintessential distinctive element. Essentially, since ‘*in its qualifying traits, subordination wears a disguise of the power of direction of the others’ work*’,³¹⁴ the latter represents an entrepreneurial technique through which the employer expresses his organizational rationality – so called hetero-direction. Yet, the allusion to a titanic nature of the entrepreneur expressed in his mission of rationalisation may give us a hint of how this model is substantially collocated in the context of twentieth century factory.

Changes in organization of production and work caused ‘fading’ of hetero-direction from the need to resort to a stringent and continuous power of conformation of the work to the form of a coordination functional to the business organization, in which methods, time and place are decided by the entrepreneur.³¹⁵ In the most extreme cases, the evanescence of the conformation activity of the work performance has made the very configurability of the relationship in terms of subordination more complex and uncertain.³¹⁶

Paradoxically, the same technological changes have brought about not only the weakening of hetero-direction but at the same time the intensification of employer's directive power: the use of innovative technologies characterised by almost constant tracking of the worker's activity and position allows the adoption of specific directives that constitute an excessively pervasive directive power in the hands of employer.³¹⁷

Both cases of algorithmic management deployment – the one causing fading of hetero-direction and the one leading to its intensification – are directly linked to the aforementioned ‘hacking’ of the labour law regulation. The former has its repercussions in the area of classification of working relationships with effects of potentially excluding wide categories of workers from labour

³¹³ The reference is to a doctrine of Lodovico Barassi which influenced generations of labour law scientists, see BARASSI, L.: *Il contratto di lavoro nel diritto positivo italiano*. Milano: Vita e Pensiero, 2003.

³¹⁴ VOZA, R.: Statuto, poteri dell'imprenditore e tutele della persona del lavoratore. In: *Rivista Giuridica del Lavoro e della Previdenza Sociale*, 2020, Vol. 71, No. 1, p. 66.

³¹⁵ NUZZO, V.: Il confine delle tutele lavoristiche, oggi. In: *Costituzionalismo.it – A cinquant'anni dallo Statuto dei lavoratori, nuove tecnologie e società della sorveglianza*, 2020, Vol. 1.

³¹⁶ GARGIULO, U.: La determinazione della prestazione di lavoro tra libertà e dignità. In: *Mezzo secolo dallo Statuto dei lavoratori. Politiche del diritto e cultura giuridica*. Editoriale Scientifica, 2020, p. 398.

³¹⁷ Ibidem, p. 399.

law's protective umbrella; while the latter leads to deepening of existential alienation for the worker with effects on the work quality and possible dehumanization of legal relationships in employment.

The first issue has to do with the dogma of hetero-direction being at the centre of the concept of subordination. A preliminary clarification ought to be made by noting that every working activity – being it subordinate work or self-employment – has aspects of hetero-direction, but only in subordinate work there is an '*objectification of the workforce which attributes to the creditor a full and constant faculty to intervene on the internal organizational methods of the due behaviour*'.³¹⁸ In order to exploit the legal distinction between employees and self-employed persons, digital labour platforms can potentially operate an 'avoidance hack'³¹⁹ whenever the traditional legal assessment fails to fit the work relationships into a rigid model of hetero-direction.

Yet, in digital working arrangements hetero-direction also can be found, although it seldom takes up a traditional form of employer's domination within the conventional employment relationship. Instead, employer's directive prerogative may present itself indirectly '*in a way that is just as – if not more – effective than management based on formal orders given by an employer to his employees and direct control over the carrying out of such orders*'.³²⁰ Therefore, when algorithmic management is involved, hetero-direction often represents power comparable to the one we define as directive towards the workers, and that must be ascertained *ad hoc* in individual cases.

Conversely, some digital working arrangements genuinely miss the element of hetero-direction – because, for instance, a digital platform may have ceded the whole management and control of the work performance to customers.³²¹ However, here the avoiding of the subordination employment sta-

³¹⁸ PERULLI, A.: Il potere direttivo dell'imprenditore. Funzioni e limiti. In: *Lavoro e diritto*, 2002, Vol. 3, p. 399.

³¹⁹ ALEXANDER, C. S., TIPPETT, E.: The Hacking of Employment Law. In: *Missouri Law Review*, 2017, Vol. 82, No. 4, p. 1008 ff.; the authors distinguish between false and true avoidance strategies, the former being the case of companies that exercise very comparable employer's prerogatives through algorithmic management and so they should fall inside the labour law's regulation; the latter, on the other hand, involves more genuine forms of self-employment through digital labour platforms and goes beyond the misclassification issue.

³²⁰ Opinion of Advocate General Szpunar in CJEU, Case C-434/15, *Asociacion Profesional Elite Taxi v Uber Systemas Spain SL*, Para. 52

³²¹ This is the case of Amazon Mechanical Turks working model – AMT has almost no control over the task execution, recruitment, task termination or even the payment. See <https://www.mturk.com/>.

tus, while seemingly legitimate according to the valid normative indicators, may still *de facto* constitute harmful working conditions for workers.³²²

What Italian Supreme Court has done in Foodora case (as well as the legislator in redrafted Article 2 of Legislative Decree No. 81/2015) is that it deliberately overlooked the existence of hetero-direction – a technique that has been called in legal doctrine an ‘extension without qualification’³²³ – and extended the legal protection also to hetero-organised workers. According to the Court, the guarantees of subordination also apply to work that is legally self-employed but in which ‘*the hetero-organization, accompanied by personality and continuity of performance, is marked to the point of making the collaborator comparable to an employee*’, so as to justify ‘*equivalent protection and, therefore, the remedy of the full application of the discipline of subordinate work*’. Both the ruling and the redrafted Article 2 reflect the elaborations of the Italian Courts in the matter regarding the progressive loss of significance of the typological element represented by the exercise of employer’s directive power.³²⁴

In order to further prove the omnipresent tendency of Courts’ rethinking the rigid element of hetero-direction and rather focusing on different indicators of employment relationship, the unique case of crowdworker’s classification should be mentioned. While the majority of case-law regarding digital labour platforms involves on-demand platforms, often in food deliv-

³²² Said harmful conditions may involve the non transparency of algorithm and thus violation of various GDPR provisions; or they may implicate unfair treatment when it comes to wages that, even in absence of minimum wage requirements for self-employed, may encourage social dumping practices across the labour market. Last but not least, bypassing of employment status through seemingly legitimate avoidance hacks can hypothetically undermine labour law by removing workers from its scope, leaving the set of laws ineffective without subjects upon which to operate. See ALEXANDER, C. S., TIPPETT, E.: The Hacking of Employment Law. In: *Missouri Law Review*, 2017, Vol. 82, No. 4, p. 1010 ff.

³²³ The technique elaborated by French doctrine that ignores the hetero-direction in the sense of the nexus of subordination but it rather focuses on the status of subordination. See PERULLI, A.: Il potere direttivo dell’imprenditore. Funzioni e limiti. In: *Lavoro e diritto*, 2002, Vol. 3, p. 400.

³²⁴ Courts have been repeatedly referring to the ‘*directives imprinted in the organization*’ or to the activity ‘*modelled on the organizational structure given to the company by the employer according to the changing needs of time and place of the business organization*’ or to an attenuated subordination that takes the form of ‘*general directives given by the employer according to the programs for which the service is intended, for the pursuit of the purposes of the employer company*’. See NUZZO, V.: Il confine delle tutele lavoristiche, oggi. In: *Costituzionalismo.it – A cinquant’anni dallo Statuto dei lavoratori, nuove tecnologie e società della sorveglianza*, 2020, Vol. 1.

ery or logistics sector, working conditions of online crowdworkers remain invisible also for the judges and labour law academics. The reason for this is surely overall glaring absence of typical subordination indicators, but one should not underestimate how the scarce visibility on the streets and impossibility to meet the co-workers contribute to the lack of collective discontent and mobility.

In the trailblazing case before the German Federal Court a crowdworker has been recognised the legal status of an employee even if he was not '*subject to instructions given by the employer*' according to the definition of employment relationship.³²⁵ Whereas the worker was able to freely accept or cancel the assignments at any time, the crowdworking platform in question would credit the worker with 'the experience points' for every completed task (beyond the remuneration paid by the customer) in order to accumulate points and reach higher levels in the platform's system that come with certain benefits (like having access to more assignments or possibility to work on more tasks simultaneously). The German Court recognised the existence of subordinate employment relationship based on worker's integration into platform's elaborated 'psychologically incentivised system' that pressured the worker into accepting more and more tasks, notwithstanding his theoretical liberty to refuse or abandon said tasks. There was no contractual obligation for the crowdworker to accept or finish the assignments and thus no direct hetero-direction in that effect executed by the platform; moreover, the fact that the platform set requirements for how the tasks were to be performed should not, on itself, be sufficient to qualify an employment relationship due to the aforementioned presence of elements of hetero-direction also in the typically self-employed work. Indeed, what judge considered in the ruling was primarily the intensive integration of the worker into the platform's organisation, which, only in combination with other indicators such as detailed specifications on the performance of the task and the gamification systems, cumulatively give rise to an existence of personal dependence and

³²⁵ Ruling of German Federal Labour Court, Bundesarbeitsgericht, 1 December 2020, No. 9 AZR 102/20. For the exhaustive analysis of the ruling see for example GRAMANO, E., STOLZENBERG, H.: Platform Work and the Notion of Employee Under the German Legal System: Possible Consequences at a Systematic Level. In: *lavorodirittieuropa.it*, 2021, available online: <https://www.lavorodirittieuropa.it/dottrina/lavori-atipici/830-platform-work-and-the-notion-of-employee-under-the-german-legal-system-possible-consequences-at-a-systematic-level>; the authors underline how the organisational structure of the platform was able to induce the worker to behave in the desired manner without concrete instructions having to be issued for this purpose.

thus an employment relationship classification in the said case. Arguably the ruling re-defined the hetero-direction as stemming from the organisational design of the company (i.e. through algorithmic incentives system) without the need of actual concrete and direct instructions, thus detecting the weak spot of algorithmic management when hacking the employment-status classification.

In the light of the foregoing, the subordination cannot be identified with the sole hetero-direction as a continuous and specific exercise of directive power. Subordinated work has become polymorphous phenomenon that encompasses the elements of uneven labour market context where both big multinational companies coexist with small family-conducted businesses; where hyper-technological and elementary productive processes live side by side; and where employer's presence could be tangible – based on strong human ties and interactions, as well as a merely vague idea behind the digital coding. More or less qualified workers on different levels of hierarchical dependence are to be qualified as subordinate employees not because of the exercise of directive power towards them, but rather the power to organise their work performance. This would mean that the minimum of subordination lies precisely in the control over the organization of work in a condition of power imbalance between the parties.³²⁶

With regards to new productive context where the technology (and not only) liberated employer from his constant 'directive duty' over working process, both legal constructs³²⁷ of hetero-direction and hetero-organization seem to overlap: they align with a case-law hermeneutics regarding subordinated nature of high managerial professions that allows for hetero-direction to manifest itself also '*with respect to programmatic directives that can be imprinted in the corporate structure*'.³²⁸ It means that, conceptually, both constructs follow the fracture between *Beruf* and *operari dipendente* in relation to technology: neither highly autonomous work (marked with *beru-*

³²⁶ In this vein see MAZZOTTA, O.: L'inafferabile etero-direzione: a proposito di ciclo fattorini e modelli contrattuali. In: *Rivista Labor*, 2020, No. 1, pp. 11–13; also RAZZOLINI, O.: La subordinazione ritrovata e la lunga marcia del lavoro autonomo. In: *Labour & Law Issues*, 2020, Vol. 6, No. 2, pp. 139 ff.

³²⁷ Underscoring the open nature of legal constructs as opposed to the facts of life that are there to be described allows for liberating approach when overcoming legal dogmatism. For similar approach see for instance DAVIDOV, G.: *The Reports of My Death Are Greatly Exaggerated: Employee as a Viable (Though Over-used) Legal Concept*, 2005, available online: <https://ssrn.com/abstract=783484>.

³²⁸ Cass. 23 April 2014, No. 9196.

flich attitude) cannot be considered exclusively an entrepreneurial feature, nor technologically dependent work is equivalent to status of subordinate employee.³²⁹

For instance, in the crowdwork context, the main characteristics of the task that is to be performed are described already in the assignment offer, unlike what happens for the directives on the concrete task execution, which are generally considered superfluous and therefore may not be defined at all.³³⁰ Similarly, it is the case of digital interface used by numerous food delivery platforms, where the directive power is embedded in the organizational setup so that it influences the concrete manner of work execution. On top of that, the presumed freedom to accept the work assignments does not stand for actual worker's autonomy when it carries traits of technological domination over real work-related choices, as confirmed, for instance, by the judge of Palermo.³³¹ In fact, when the choice of the slots appears to be strongly conditioned by worker's algorithmic profiling, the ability of technology to dominate the quantified worker reflects the disproportionate power dynamics typical of subordination.

When it comes to second issue linked to the augmented managerial prerogatives, directing workers through '*imperatives programmed into the algorithms*'³³² exacerbates the condition of existential alienation advanced by Vardaro. For the reasons better illustrated in the fifth chapter of this monograph – such as, for example, increased task routinisation leading to the sense of meaninglessness – the alienation has lost its sole correlation to the product of the labour and organisation of the productive process and rather gained a new dimension of '*estrangement from the very existence of the worker*'.³³³ And yet, closely supervised work with limited job discretion manifests not only the role of workplace technologies in constraining opportunities for

³²⁹ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 120.

³³⁰ DÄUBLER, W., KLEBE, T.: Crowdwork: datore di lavoro in fuga? In: *Giornale di diritto del lavoro e di relazioni industriali*, 2016, Vol. 151, No. 3, p. 478.

³³¹ NUZZO, V.: Sulla subordinazione dei rider: un'innovativa pronuncia del Tribunale di Palermo. In: *Rivista Italiana di Diritto del Lavoro*, 2020, No. 4; CAVALLINI, G.: Poteri datoriali della piattaforma: il Tribunale di Palermo riapre l'opzione subordinazione. In: *GiustiziaCivile.com*, 2020, No. 12, p. 838.

³³² CHERRY, M. A.: Beyond Misclassification: The Digital Transformation of Work. In: *Comparative Labour Law and Policy Journal*, 2016, Vol. 37, No. 3, p. 597.

³³³ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 122.

meaningful work but also worker solidarity,³³⁴ with perceived social isolation having further negative effects on the possible collective counteraction.

9.2. Workers' monitoring – from informational to physical privacy

The exercise of the employer's control prerogative represents an inherent characteristic of the employment relationship; normally it is considered a by-product of the directive power because of its role in guaranteeing the satisfaction of the creditor's interest, in addition to its instrumental role with respect to disciplinary power.³³⁵ Notoriously the labour law attempts to balance, on the one hand, the power to monitor the performance of working tasks and the compliance with employer's orders and directives, with the respect for the human dignity of workers on the other hand, and to that end to rationalise and limit employer's prerogatives.³³⁶

Increased use of technological tools in managing the workforce has boosted managerial prerogatives to levels unheard of in the past, especially considering the threat for workers' privacy.³³⁷ Workers' monitoring by now resemble more the work of a workplace freakonomist³³⁸ – i.e. a rather kinky scientist-like employer trying to penetrate every aspect of the worker's life

³³⁴ Alienation expressed in terms of powerlessness and loneliness – especially in the setting of digital labour platforms – can undermine worker autonomy and social connection. See GLAVIN P. et al.: *Über-alienated: Powerless and Alone in the Gig Economy*. In: *Work and Occupations*, 2021, p. 6.

³³⁵ TULLINI, P.: La digitalizzazione del lavoro, la produzione intelligente e il controllo tecnologico nell'impresa. In: *Web e lavoro, Profili evolutivi di tutela*. Giappichelli, 2017, p. 9 ff.

³³⁶ Italian Workers' Statute, for example, safeguards the employees against the impersonal, indirect control via technological devices, setting substantial and procedural limits for the employer when exercising his control prerogative. For compelling research analysing the Article 4 of Italian Workers' Statute see, for example: ALVINO, I.: I nuovi limiti al controllo a distanza dell'attività dei lavoratori nell'intersezione fra le regole dello statuto dei lavoratori e quelle del codice della 'privacy'. In: *Labour & Law Issues*, 2016, Vol. 2, No. 1; NUZZO, V.: *La protezione del lavoratore dai controlli impersonali*. Editoriale Scientifica, 2018; TULLINI, P. (a cura di): *Controlli a distanza e tutela dei dati personali del lavoratore*. Giappichelli Editore, 2017.

³³⁷ For more detailed account on the practices in technologically-enhanced workplace and their legal risks see DE STEFANO, V.: 'Negotiating the Algorithm': Automation, Artificial Intelligence, and Labor Protection. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1.

³³⁸ BODIE, M. T.: Workplace Freakonomics. In: *Journal of Law and Policy for Information Society*, 2017, Vol. 14 No. 1.

in order to determine factors contributing to his productivity. Simple facts about worker's sporting activities, sleep quality or out-of-work socialization with colleagues can become a valuable data to be used as an company asset.

When examining more traditional devices deployed in work – from the 'old-school' audiovisual systems for monitoring to smart phones and personal computers – existing legal frameworks are still able to offer quite solid regulatory structure; on the contrary, more radical legal instruments are necessary whenever involved in the process of workers' surveillance are the algorithms. In fact, entrepreneurship of twenty-first century is inevitably associated with the use of technologies that are capable of the most efficient and innovative solutions in the management of the company. As a consequence, decisions regarding the best management of activities and human resources are delegated to artificial intelligence systems which, through complex machine learning algorithms are able to collect an infinite amount of data, to elaborate them and to identify the most effective management and organizational solution.

In fact, with regards to the data-gathering technologies and predictive intelligence tools, the legal frameworks worldwide begin to tremble. Legislators often embrace a rather limited perspective that stops at the problem of legitimacy of monitoring;³³⁹ instead, the complex issue of algorithmic control goes beyond such issue, since the use of machine learning algorithms poses the risk of automated decision-making in the exercise of other managerial prerogatives. The real challenge for the protection of personal data against the AI is to establish that the humans are not foreign to the dynamics of algorithms, but are able to decode the solutions produced automatically by the learning systems³⁴⁰ – solution yet to be contemplated by the national legislators in the context of employment relationships.

Information, data, evaluated information in form of reputation – all that constitutes a valuable asset for the employers in order to organise employees in a more efficient way (*Rationalisierung* 2.0). However, unregulated use of such resources can compromise worker's rights, starting with the right to privacy, right not to be discriminated, right not to be subject to automated decision making, access to work and so on. However, with regards to excessive algorithmic monitoring another critical issue exists, left beyond safeguarding informational privacy of employees.

³³⁹ Such as in the case of Italian Article 4 Workers' Statute.

³⁴⁰ LORE, F.: Una intelligenza artificiale più umana, tra etica e privacy. In: *Cyberspazio e diritto*, 2021, Vol. 22, No. 67, p. 178.

If one is to consider that invasive surveillance mechanisms can create an environment of constant Big Brother-type monitoring capable of actively influencing worker's behaviour, then workers, regardless of their status, are therefore at risk of being constantly on employer's 'digital leash'.³⁴¹ The traditional focus is on the worker's rights linked to the technologically transmitted information, overlooking the impact that algorithms and AI have on worker's physical freedom. There has been a lonely voice among labour law scholars calling for expanding the concern about worker's informational privacy on so called 'physical privacy', or better yet 'unwanted access to the physical self';³⁴² according to this hypothesis, advanced employee monitoring can cause the levels of worker's isolation and confinement that represent a form of imprisonment.³⁴³ This supposition may seem extremely bold, but its authors were able to present some convincing arguments based on British case-law. First of all, term imprisonment has been used with reference to the English tort of false imprisonment, i.e. the restraint of a person's liberty that does not require incarceration in a prison facility: *'The essence of imprisonment is being made to stay in a particular place by another person. The methods which might be used to keep a person there are many and various. They could be physical barriers, such as locks and bars. They could be physical people, such as guards who would physically prevent the person leaving if he tried to do so. They could also be threats, whether of force or of legal process.'*³⁴⁴

Indeed, Italian Penal Code – the Royal Decree No. 1398/1930 – does not include the mention of tort of false imprisonment, but rather similar concept of *sequestro di persona*, according to which *'anyone who deprives someone of personal freedom is punished with imprisonment from six months to eight years'*. The law protects personal freedom from any considerable limitation of physical freedom, intended as the possibility of movement in space. In ad-

³⁴¹ The expression with reference to Italian concept of remote work – so called smart working or *lavoro agile*, can be easily applied to all the forms of technological surveillance of the workers. ALOISI, A., DE STEFANO, V.: Controllo a distanza dei lavoratori: come resistere al capo algoritmico. In: *AgendaDigitale.eu*, 2021, available online: <https://www.agenda-digitale.eu/cultura-digitale/controllo-a-distanza-dei-lavoratori-come-resistere-al-capo-algoritmico/>.

³⁴² HARIHARAN, J., NOORDA, H.: Employee Monitoring as a Form of Imprisonment. In: *uklabourlawblog.com*, 2021, available online: <https://uklabourlawblog.com/2021/05/19/employee-monitoring-as-a-form-of-imprisonment-jeewan-hariharan-and-hadassa-noorda/>.

³⁴³ Ibidem.

³⁴⁴ Ibidem, with reference to the Judgment Regina Jalloh v Home Secretary, 12 February 2020.

dition, the freedom of movement limitation does not have to be objectively impassable – even intimidatory or discouraging behaviour can ultimately determine the deprivation of person's physical liberty.³⁴⁵ Seemingly both the British version of false imprisonment and the Italian *sequestro di persona* have a common matrix in the protected legal asset (personal freedom intended as physical freedom of movement) as well as in the broad range of conduct qualified as its violation.

Now, the premise that technological monitoring of workers could constitute a criminal offence have a few very obvious legal flaws. Confining the workers in a limited space for a certain period of time represents still typical (even if not determinant) part of employment contract. The place of work is determined unilaterally by the employer as an expression of his directive power.³⁴⁶ Moreover, controlling the correct execution of working tasks is a typical employer's prerogative; in fact, prevailing of one-sided authoritarian elements is one of the peculiarities of employment relationships.³⁴⁷ In the traditional employment relationship built on the Fordist factory model the control of performance was long perceived as a compliance with the rules and it was exercised within an organizational paradigm defined simultaneously by both hierarchy and presence.³⁴⁸ Presence – a union of time and space – enabled a direct supervision of the work performance. Consequently, the obligation of place, although unnecessary for determining the subordination, stemmed from the contractual obligation between the parties of the employment contract and represented the 'glue' between the managerial powers and subordination.

Even nowadays, virtual workspace and remote working arrangements are not short of employer's supervision thanks to digital technologies that are able to collect data relating to the work performance, both in terms of results and also of behaviour. However, the idea that workers' monitoring can run

³⁴⁵ See the consolidated case-law in that sense, for instance Cass. sez. III pen. 16 December 2020, No. 6709, affirming that *sequestro di persona* does not necessarily imply that the limiting condition imposed on freedom of movement is objectively insuperable, as it is sufficient that the activity, even if merely intimidating, or the provision of measures aimed at preventing or discouraging removal from the places where it is intended detain the victim, are capable of determining the deprivation of the latter's physical freedom, possibly with regard to his specific capacity to react.

³⁴⁶ PERULLI, A.: *Il potere direttivo dell'imprenditore*. Milano: Giuffrè, 1992, p. 20 ff.

³⁴⁷ DE STEFANO, V., ALOISI, A.: *Il tuo capo è un algoritmo. Contro il lavoro disumano*. La Terza, 2020, p. 139.

³⁴⁸ PONZELLINI, A. M.: Tecnologie, fine della presenza e dilemmi del controllo nei nuovi pattern spazio-temporali del lavoro. In: *Economia & Lavoro*, 2020, Vol. 1, p. 97 ff.

deeper than to information access and data processing can gain some relevance when linked precisely to new technologically enhanced working arrangements: firstly, some crowdwork platforms have famously been using activity-monitoring software to record worker's keystrokes, or the screenshots of worker's desktop taken in regular time segments to determine whether they are actually working;³⁴⁹ moreover, resorting to remote work arrangements during the Covid-19 global pandemic has exacerbated surveillance practices from sceptical employers towards the workers, but also re-opened a debate on both its original and pandemic version.

Remote work and crowdwork unfold partially in a physical place and partially in a virtual space that connects the worker to the employer's organisation. Whereas 'space' is cold and depersonalizing concept, 'place' offers security and the possibility of identification. Places warm up the space, give it a peculiar meaning. Within them one can feel protected and consolidate reference points of his day to day experience.³⁵⁰ Virtual space designated for work famously represents so called *non-place*: a non-place in a delocalised, open space that the individuals use to transit to and from actual places.³⁵¹ Traditional workplace predetermined by the employer via unilateral contractual arrangement is an actual place. However one can argue in relation to a physical component of technology-enhanced work arrangements, that if the place of work is left up to the worker to decide, and thus remain undetermined and undeterminable by the employer, it could be referred to as *non-place* of work as well: so is the case of remote work and crowdworking.

In particular, remote work opened a possibility to displace work from its traditional setting – the employer's company.³⁵² Since such work is con-

³⁴⁹ O'DONOVAN, C.: This 'Creepy' Time-tracking Software Is Like Having Your Boss Watch You Every Second. In: *Buzzfeednews.com*, 2018, available online: <https://www.buzzfeednews.com/article/carolineodonovan/upwork-freelancers-work-diary-keystrokes-screenshot>.

³⁵⁰ FRANCHI, M., SCHIANCHI, A.: Smart Working: il lavoro senza tempo e senza luogo. In: *Quaderni di economia del lavoro*, 2020, Vol. 111, No. 1, p. 216.

³⁵¹ As opposed to places, non-places miss the identity, historical and relational features: for instance highways, airports or malls are typical non-places since they enable many individuals to be simultaneously in the same space without entering into relationships; as opposed to actual places such as school, traditional workplace, home. See AUGÉ M.: *Non luoghi. Introduzione a un'antropologia della surmodernità*. Elèuthera, 2009.

³⁵² Collocation of employment relations in the Title II of Book V of the Civil Code named *Del lavoro nell'impresa* (loosely translated as 'About the work inside the company') proves their geographical perception in the space determined by the employer as the place of his entrepreneurial interests.

tractually liberated of the 'specific workplace constraints' (as well as its time constraints) it obtains a nature of flexible working arrangement. From the contractual arrangement about remote work arises a new set of rights and obligations for the parties, one of which is the right for the worker to choose freely the *locus* where the work performance shall be carried out, and *vice versa*, the employer's reciprocal obligation not to interfere with such choice. Free determination means possibility to change the place, time and time again, even during one specific workday. Flexible space dimension of remote work is closely connected to its malleable time provisions. In fact, its effective functioning would be precluded if the employee could move freely between the chosen workplaces but would not have the liberty of time to do it.

In the light of the foregoing it is clear that employer's behaviour precluding the free choice of place (or space) of work would be in violation of the flexibility embedded in the contractual agreement. Extreme employee monitoring can have that effect when forcing people to stay in a particular place. Unlike traditional employment contract when the place of work is unilaterally imposed by the employer as an inherent characteristic of his directive power over employee – and therefore the worker's movement in space is justifiably restricted on the basis of his consent given when signing the contract³⁵³ – remote work agreement explicitly liberate worker from this particular part of employer's power. Use of software like Google Workspace or Microsoft Teams enabling user-activity tracking entails perils for the perceived surveillance that can lead to fear of moving away from the computer, even for the justified reasons, for short periods of time³⁵⁴ and within the liberty embedded in the agreement. Hence, if the flexibility of space is not effective, remote work could potentially become a form of imprisonment.

Digital technologies enable also (officially) self-employed crowdworkers to carry out their work in any time and any place. For this reason the obli-

³⁵³ Indeed, although putting employees into confined spaces or apply high degrees of supervision do not ordinarily constitute imprisonment, the nature of subordinate work can neither preclude the possibility of imprisonment in some extreme cases. For instance, *sequestro di persona* is committed when employer locks (or orders to lock) his employees inside of the company premises where the work is carried out and thus segregates them for the entire working day. Cass. Pen. Sez V, 30 May 2018, No. 34469.

³⁵⁴ According to the Cass. Pen. Sez V, 30 November 2018, No. 6738, it is sufficient, for the purposes of integrating the crime of *sequestro di persona* pursuant the Article 605 of the Criminal Code, the inability of the victim to restore his or her freedom of movement even relative. It is irrelevant, on the other hand the duration of the state of deprivation of liberty, which can also be short, provided it is legally appreciable.

gations on the basis of crowdwork contracts may present similarities with those previously described with regards to conventional remote work agreements.³⁵⁵ In particular, both institutes appear as *'different degrees of a socio-economic phenomenon that distances workers from the operational, material and human centre constituted by the company and from the regulatory content of the labour law discipline'*.³⁵⁶

Digital platforms such as Upwork provide services of monitoring of so called 'hourly workers', i.e. still self-employed freelancers paid by time spent on the assignment. Time tracker software measure keystrokes and takes screen captures at random intervals to prove that worker is spending time on the task.³⁵⁷ Some of these monitoring practices practically makes it impossible for worker to leave his computer even for very limited time, given that for instance screenshots are being taken at least with one per ten minutes interval. Mouse clicks, scroll actions, and keystrokes are recorded as well, by colouring special boxes on the screen – one for every minute that should have been spent on task – if the app detects abovementioned activity from the worker. As a result, fast pace of monitoring precludes physical movement of the worker that is confined to his computer for the duration of the assignment.

Determining whether worker monitoring is an imprisonment in a specific case will involve considerations regarding the nature of the contractual agreement between the parties. It could be argued that imprisonment is excluded in force of the contractual agreement between two parties where employer dispose unilaterally with prerogative to determine the place of work execution. However, it is questionable if crowdwork contract between formally two equal parties can contain such strong demonstration of managerial prerogatives over work organization and still not be considered an em-

³⁵⁵ See DONINI, A.: Il mercato dei servizi sul web: il rapporto di lavoro su piattaforma digitale. In: *Web e lavoro, profili evolutivi di tutela*, 2017, pp. 100 ff., the author draws the line from institute of remote work to crowdworking through the organizational flexibility and deployment of digital technologies.

³⁵⁶ Ibidem, p. 101.

³⁵⁷ Platform's official website offers detailed description of time tracker functioning. Available online: <https://support.upwork.com/hc/en-us/articles/211064098-Log-Time-with-Time-Tracker>. Taking screenshots of the employee's monitor so that the client can see in real time how work on the task continues has already become a common supervisory tool among platforms, especially for more skill-intensive assignments, One of the providers is Worksnaps; its name comes from the Snapchat application, whose function is to take pictures, in this case screenshots, and send it to a pre-selected recipient. See <http://www.worksnaps.net/www/>.

ployment relationship. Considering especially how *'actual constraints due to an organizational structure created by the employer are also suitable to induce the employee to behave in the desired manner without concrete instructions having to be issued for this purpose'*.³⁵⁸ However, the fact remains that also genuine self-employed crowdworkers could necessitate development of more extensive protective framework against digital tools that can potentially harm their liberty and dignity.

All in all, the hypothesis of imprisonment serves more like a thought experiment than actual concern with penal law violations. Yet, there is no doubt that technological control of workers – especially those out of employer's direct control – has reached some point *'on the same spectrum as imprisonment'*.³⁵⁹

9.3. Dealing with the algorithmic justice in the workplace

Algorithmic management poses an important question of accountability in digitalised working arrangements. Throughout the twentieth century – and equally in capitalist and socialist economies – the accountability within organizational structure of the employment relationship was vertical,³⁶⁰ which

³⁵⁸ GRAMANO, E., STOLZENBERG, H.: Platform Work and the Notion of Employee under the German Legal System: Possible Consequences at a Systematic Level. In: *lavorodiritteuropa.it*, 2021, available online: <https://www.lavorodiritteuropa.it/dottrina/lavoratipici/830-platform-work-and-the-notion-of-employee-under-the-german-legal-system-possible-consequences-at-a-systematic-level>

³⁵⁹ HARIHARAN, J., NOORDA, H.: Employee Monitoring as a Form of Imprisonment. In: *uklabourlawblog.com*, 2021, available online: <https://uklabourlawblog.com/2021/05/19/employee-monitoring-as-a-form-of-imprisonment-jeewan-hariharan-and-hadassa-noorda/>. According to authors *'it seems questionable that a person could ever be considered to have accepted significant reductions in their ability to move freely merely because of a quick click of a button on top of fine print that nobody reads or because of text buried in an employment contract'*.

³⁶⁰ Taylorism has built a strict hierarchical system, as opposed to strongly horizontal algorithmic management today, see STARK, D., PAIS, I.: Algorithmic Management in the Platform Economy. In: *Sociologica*, 2020, Vol. 14, No. 3, p. 61. Also socialist's counterparts of Taylorism shared the vertical organization of disciplinary power in the employment. In the overall system of labour sanctions that come into consideration according to the old Slovak Labour Code Law No. 65/1965 in cases of serious or repeated breaches of work discipline, disciplinary measures were of particular importance: they should have primarily serve to correct undisciplined workers and also to have an educational effect on other workers and on overall improvement of work discipline, as well as to increase the authority of managers. See PROFANT, M.: Problems Concerning Disciplinary Power and Decisions on Disciplinary Action. In: *Právny obzor*, 1978, Vol. 61, No. 5, pp. 484 ff.

meant direct obligation towards the employer to respond for infringement of contractual obligations (as well as for some other negative external conduct). The introduction of algorithms has changed that, especially with regards to labour platforms where subjects are exposed '*in a visible cage to a new and even more ubiquitous managerial gaze*'.³⁶¹ But even conventional employment relationships has suffered more horizontal distribution of accountability creating a new disciplinary panopticon where the disciplinary power is exercised not only by the employer and the managers, but also by the customer base or algorithm itself.

Conventional disciplinary prerogative confers a tool in the hands of the entrepreneur so that he can govern the employment relationship, and therefore it presents itself as a corollary of the directive power aimed at protecting the order in the company.³⁶² As such it is essential for ensuring the continuity of the company and, therefore, allows for the punishment of the non-compliant worker and the re-establishment of the order broken by his breaches. Hence, the employer has a faculty to sanction those contractual (and not only) breaches; as private penalties with their own typical function, disciplinary sanctions go to correct conduct which disturbs the company organization.

But disciplinary leverage as a tool to manage the workforce has also another connotation: disciplinary power can '*mould behavioural automatisms of individuals*' until they incorporate certain normativity; it can even '*extend so widely, and infiltrate so deeply, as to produce new forms of subjectivity, modelling the schemes that constitute its substratum concepts, inference schemes, self-representation, emotional attitudes, attitudes to control, ability to reason*'.³⁶³ It means that by imposing of the concrete sanctions for individual infractions, execution of disciplinary power could translate into general alteration of employees' behaviour. The particular nature of the work obligation creates a legitimate interest for the employer when dealing with an infringement of any contractual violation, to react in preventing the possibility of its future recurrence.³⁶⁴ Even a minor non-fulfilment of the worker's obli-

³⁶¹ Ibidem, p. 60.

³⁶² MAINARDI, S.: *Il potere disciplinare nel lavoro privato e pubblico*. Art. 2106. Giuffrè, 2002, p. 6.

³⁶³ According to BRIGAGLIA, M.: *Potere. Una rilettura di Michel Foucault*. Napoli: Editoriale Scientifica, 2019, p. 47, disciplinary power can even redesign, piece by piece the corporal and spiritual anatomy of individuals.

³⁶⁴ ICHINO, P.: *Il contratto di lavoro*. Vol. III. Giuffrè Editore, 2000, pp. 324 ff.

gation that does not cause any damage for the employer may be addressed by a private sanction in order to produce a deterrent effect for the future.

This is particularly visible in the context of algorithmic management. In fact, unpredictable and non-transparent algorithms hover over each worker who is instead in a state of permanent visibility.³⁶⁵ Technology gives orders and instructions on how the working obligation shall be fulfilled, monitors its execution and finally sanctions the worker when such orders have not been punctually respected. Disciplinary mechanisms facilitated by algorithms provide a wide range of sanctions from losing lucrative slots to cancelling work accounts of underperforming workers. But disciplining workers' behaviour also entails using algorithms to reward complying with predefined desired behaviours or meeting performance goals with more opportunities, higher pay or promotions.³⁶⁶ The reward system represents the other side of the general deterrence system of disciplinary power: rather than by imposing the negative measures for the breaches of contractual obligations, employer can preventively ensure smoother work execution by rewarding worker's good behaviour. Oftentimes employers rely on the gamification of rewards to manufacture consent in a more entertaining way, or to encourage some extra unremunerated work.³⁶⁷ However, such algorithmic rewarding may compromise workers' capacity to deliberately set moral and practical limits for

³⁶⁵ Prassl compares the algorithmic boss to mythological creature Argus Panoptes, called the 'all-seeing'. See ADAMS-PRASSL, J.: What if Your Boss Was an Algorithm? Economic Incentives, Legal Challenges, and the Rise of Artificial Intelligence at Work. In: *Comparative Labor Law & Policy Journal*, 2019, Vol. 41, No. 1, p. 17.

³⁶⁶ Digital labour platforms such as Uber and Amazon Mechanical Turk often use algorithmic rewarding to enhance work-shift flexibility and worker self-determination in scheduling. See KELLOG K. C. et al.: Algorithms at Work: The New Contested Terrain of Control. In: *Academy of Management Annals*, 2020, Vol. 14, p. 15.

³⁶⁷ Ibidem, p. 16. Gamification strategies are present across all the labour market and they are especially typical for big companies such as Google, Amazon, Samsung or Disney. Employers use smartphone-based apps, scoreboards, and videogame elements such as digital points and badges to promote the structure, look, and feel of a designed game with the intent of advancing employer goals. Huge public employer such as US army also rely on gamification in the process of recruitment. Recruiting tool America's Army is available for download for candidates would like to test their skills in a multiplayer strategic shooter environment. See <https://www.americasarmy.com/>. Another use of game-like features were introduced to keep Disneyland manual workers at the pace with their colleagues, by displaying the productivity in traffic light colour-coded announcements linked to each worker – green for optimal pace of work, yellow if they slowed down and red if they were behind. See GABRIELLE, V.: The Dark Side of Gamifying Work. In: *fastcompany.com*, 2018, available online: <https://www.fastcompany.com/90260703/the-dark-side-of-gamifying-work>.

their labour, as well as create greater experiences of frustration and stress for workers.³⁶⁸ The reason for this lies, once again, in the opacity of the algorithm – intentional secrecy of the rewarding system can have the same effects as the opaque and non-transparent systems for punishment – workers experience suspicion and frustration about accessing or functioning the systems, especially considering the consequences for their paid work.

So far the only legal remedy known for unfair employer's provisions is a system of substantial and procedural guarantees that establishes an effective right to object such decision. As it has already been noted with regards to a new hetero-direction, there is a twofold tendency in progress with very different legal consequences. While, on the one hand, the technology has attenuated the need of stringent and continuous conformation of the work performance, on the other hand, the same technological impact has unleashed unprecedented possibilities of worker monitoring, not only in relation to his work performance but also interfering with the worker as a private person.

Underlying the correct execution of disciplinary power are the principles of specificity, timeliness, immutability and proportionality.³⁶⁹

As for the first one, any disciplinary action must be formulated in such a way as to allow the worker to exactly identify the behaviour for which he is hold responsible and to defend himself from such accusation. It means that it must contain all the necessary indications in order to pinpoint the conduct in which the employer has recognised a disciplinary violation.³⁷⁰ Algorithmic management systems rarely tend to be in compliance with the principle of specificity, either because of the use of aggregated data as a basis for disciplinary action, or due to simplistic rating language that does not allow deeper understanding of the violation. In the case when disciplinary power is delegated to the individuals external to the contractual relationship – for

³⁶⁸ KELLOG K. C. et al.: Algorithms at Work: The New Contested Terrain of Control. In: *Academy of Management Annals*, 2020, Vol. 14, p. 16.

³⁶⁹ For the purpose of the exposition these principles are borrowed from the Italian legal doctrine. We reckon that, far from country-specific, such principles aim to safeguard universally recognized values. See NUZZO, V.: Il potere disciplinare del datore di lavoro: dentro e oltre i limiti statutori. In: *Mezzo secolo dallo Statuto dei Lavoratori. Politiche del diritto e cultura giuridica*. Editoriale Scientifica, 2020, p. 467.

³⁷⁰ In this vein Cass. 16 October 2019, No. 26199; in Cass. 18 April 2018, No. 9590 the judge reckoned the compliance with principle of specificity when, despite the elasticity of the disciplinary action's content, it does not concretely prevent the exercise of the right of defence by the worker.

instance when the external reputation systems are used to collect customer feedback data – disciplinary actions are subordinated to surpassing the minimum grade point average composed from a number of individual ratings for different work performances. Furthermore, the symbolic language adopted by digital platforms (i.e. five-star systems, points, colours, thumbs up or down, likes etc.) precludes the possibility to scrutinise the motives behind each negative feedback.

The timeliness principle operates in spite of the absence of any legislative provision establishing terms within which the employer is required to react on a disciplinary level against the employee who he knows is guilty of an infringement. This principle safeguards the utility of worker's defence,³⁷¹ which could be seriously harmed by excessive passage of the time between the presumed violation and employer's action. Against the backdrop of algorithmic management the immediate disciplinary action against the worker could be materially impossible, since, as mentioned above, it relies on the evaluation of a number of work performances in time by a number of different individuals. Worker's right to defence is thus undermined by mechanism that allows to postpone the disciplinary action by default. Moreover, such prejudice to right to defence will presumably not withstand the scrutiny even under the case-law hermeneutics that attributes timeliness principle a benefit of relativity.³⁷² Different algorithm-driven practices can, conversely, provide an immediate notification of any given violation of contractual obligation – the message usually appears on the screen or the red light ignites to signal the unsatisfactory conduct with possible disciplinary consequences. However, for

³⁷¹ ICHINO, P.: *Il contratto di lavoro. Vol. III*. Giuffrè Editore, 2000, p. 347. From the case-law analysis the author extracted the variegated *ratio* of timeliness principle: the possibility for worker to rely on employer's waiver to sanction the infringement; the guarantee against the malicious delays in exercising the disciplinary power, aimed at inducing the worker to repeat the violations and aggravate his position; preventing the employer from delays in order to intimidate the employee; and, finally, the already mentioned guarantee of useful exercise of right of defence, which may be compromised by passage of excessive amount of time between the violation and disciplinary action.

³⁷² Cass. 15 June 2016, No. 12337, according to which timeliness is '*compatible with a more or less long period of time, if the assessment of the facts requires a longer timeframe, or if the complexity of the organizational structure of the company is likely to delay the withdrawal provision. However, the assessment of the factual circumstances which concretely justify the delay remains reserved to scrutiny of the judge*'. It is, therefore, not very plausible that delay be default inherent to external rating systems could justify validation of such practices, given the simplified evaluation offered by customers and linear platform organisation.

it to constitute a valid disciplinary action it cannot do without a suitable follow-up in the form of proceduralised right to defence.

Finally, the infringement which is subject to a disciplinary action and the one underlying the applied sanction must coincide, in compliance with the principle of immutability. The employer thus cannot sanction the worker for reasons other than those contested.³⁷³ It also means that in case of external customer feedback, the impossibility to distinguish among single evaluations preclude the validity of such disciplinary action.

Prior to the analysis of the proportionality principle it should be pointed out that certain conducts relating to the private sphere of the worker have inexorable repercussions on the employment relationship and therefore create a link between the work performance and the private life of the worker which allows the employer to sanction certain non-work behaviours that have repercussions on the contractual relationship. The same reasoning seems applicable also when AI and algorithms are involved in the working process. However, the volume of information collected about the worker produces can easily culminate in a situation of augmented despotism³⁷⁴ since the disciplinary function of human managers is being enhanced by algorithmic management tools. In particular, hand digital tools and wearable devices provide extensive worker's evaluation in form of metrics and ranking systems; Italian Amazon warehouses, for example, use these data for individual feedback sessions with human managers in charge of disciplinary measures.³⁷⁵ It has been already argued how the online review systems in hospitality industry are being improperly used to build a disciplinary actions against workers. Also measuring of workers' body temperature have been used as an information source about possible unionization intents in the workplace and thus a possible weapon of retaliation.³⁷⁶

³⁷³ During the disciplinary procedure it is sometimes indispensable for the disciplinary action to be renewed, clarified, enriched with new elements, or to subsequently add other elements to the first action, based on information that the employer acquires during the disciplinary procedure. Neither the employer is prevented - in any judicial or arbitration proceedings initiated by the worker to protest the sanction - from pleading new circumstances with respect to the original action, not to add new objections but rather to demonstrate the seriousness of the contested violation or to allow its more precise evaluation. See Cass. 19 January 1988, No. 375.

³⁷⁴ DELFANTI, A.: *Machinic Dispossession and Augmented Despotism: Digital Work in an Amazon Warehouse*. In: *New Media & Society*, 2019, Vol. 17, No. 1, pp. 10 ff.

³⁷⁵ *Ibidem*, p. 12.

³⁷⁶ STREITFELD, D.: *How Amazon Crushes Unions*. In: *The New York Times*, 2021, available online: <https://www.nytimes.com/2021/03/16/technology/amazon-unions-virginia>.

Even when the working arrangements are not covered by protective labour law regulation³⁷⁷ – like in the case of many digital labour platforms – innovative ways of executing sanction measures produce effects similar to traditional disciplinary prerogative. Deployment of internal and external reputation systems poses a risk of bias in addition to being a dubitable source for disciplinary actions. Especially, customer ratings are at risk to contain evaluations about personal qualities of worker or information coloured by highly subjective perceptions or emotions. Since the customers of the platform are missing legitimacy to control worker's performance,³⁷⁸ the results of such control cannot be validly used for disciplinary reasons.

Given the foregoing, it is appropriate to balance the use of the disciplinary sanction in the situations described above according to the principle of proportionality. Said principle represents a limitation of employer's discretion when it requires a gradation of the sanctions applied according to a seriousness of the infringement. With regards to the algorithmic justice in the workplace, this principle gains importance when assessing disciplinary actions based on real-time data collection and algorithmic analysis. Any such sanction would have to reflect the suitability of concrete behaviour to constitute a punishable violation. Moreover, termination of the employment relationship based on disciplinary infringement could involve only the conduct that represents a significant breach of worker's contractual obligations; only then the violation is marked with a certain degree of seriousness and culpability to legitimate an extreme disciplinary sanction of dismissal.³⁷⁹ Conversely, any fully automated disciplinary measure – including automated dismissal – shall be subjected to scrutiny of Article 22 GDPR.

html. In Italy, indeed, similar conduct on employer's site would be considered in violation of Article 39 of Constitution and under many profiles covered by provision of Workers' Statute.

³⁷⁷ This is what Novella called a 'para-disciplinary function': in a contractual arrangement where the employer is legally devoid of disciplinary prerogative, the sanctioning purpose is equally achieved through the exercise of *de facto* powers that result in the imposition of contractual conditions with a para-disciplinary function. See NOVELLA, M.: Poteri del datore di lavoro nell'impresa digitale: fenomenologia e limiti. In: *Lavoro e Diritto*, 2021, Vol. 3-4, p. 454.

³⁷⁸ 'The description of the performance is left to a subject who does not have the task of observing it, but the one - different - of evaluating and interpreting it on the basis of subjective elements'. NUZZO, V.: Il potere disciplinare del datore di lavoro: dentro e oltre i limiti statutari. In: *Mezzo secolo dallo Statuto dei Lavoratori. Politiche del diritto e cultura giuridica*. Editoriale Scientifica, 2020, p. 481.

³⁷⁹ Ibidem, p. 482.

In conclusion, due to failure to comply with fundamental principles underlying workers' right to defence against an employer's disciplinary prerogative, horizontal accountability typical for algorithmic justice appears to represent merely a diversion from the otherwise strong hierarchical management.

10. THE RIGHT TO DISCONNECT

The digital age brings a number of benefits that have a positive impact on the work environment and ways of performing work. It allows for the development of flexible working opportunities and ultimately should make it easier to organize time so that the employees have sufficient time for rest and regeneration in addition to working life. Employees no longer only perform work in the standard way at the employer's workplace and under their direct and continuous supervision. Like the company itself, work in many areas is moving to the virtual world, where communication between employer and employee is closely linked to technology equipment and the Internet. This is not something surprisingly new – more than 30 years ago, the US Supreme Court declared that the workplace is no longer just a physical place located in between four walls.³⁸⁰ The workplace is a place where you take your smartphone, pager, laptop or smartwatch and where you can continue working long after the workday is over. Application practice clearly indicates that modern technologies also have negative consequences, including blurring the boundaries between work and private life. This dangerous and growing psychosocial factor should be reduced by granting employees the right to disconnect.

The right to disconnect has been a matter of interest for a long time, but due to the pandemic, which has fundamentally affected the way work is performed, the need for its legal enshrinement is growing. Such tendencies are also present in the institutions of the European Union, and we can clearly identify efforts to legally enshrine the right to disconnect, which would belong to all employees without exception.

Despite the many benefits that information and communication technologies bring to the work performance, they also come with many negative consequences and risks. The constant connectivity provided by ICT-based mobile devices can pose risks to health and well-being, as well as causing work-life balance conflicts associated with longer working hours and blurring of work-life boundaries.³⁸¹ Information and communication technologies are a primary reason for the blurring of spatial and temporal bounda-

³⁸⁰ SECUNDA, M. P.: The Employee Right to Disconnect. In: *Notre Dame Journal of International & Comparative Law*, 2019, Vol. 9, No. 1, p. 8.

³⁸¹ EUROFOUND: *Working Conditions - Right to Disconnect: Exploring Company Practises*. Luxembourg: Publication Office of the European Union, 2021, p. 1.

ries between work and private life, and today's Internet and devices allow for constant accessibility. This makes it difficult to define and measure actual working time, especially when employees read and respond to work emails from home. New communication cultures are also emerging, characterised by a high expectations for prompt responses and replies.³⁸²

In general, it appears that there are two paradigms for addressing the problems associated with enhanced communications technology involving connectivity and immediacy. One approach, known as the 'French legislative model', is characterized by efforts to regulate electronic communication between employers and employees after hours through statutes and standard-setting. This approach has so far achieved the highest popularity. The second method, which can be referred to as the 'German self-regulatory model', involves voluntary individual instruments in which private companies adopt policies that are adopted in the light of their specific and individual needs. This tactic is based on the assumption that any government intervention is a legislative misstep.³⁸³ Some authors stress that the right to disconnect should be implemented mainly through collective agreements that can ensure a work-life balance.³⁸⁴

If we take a closer look at the various sources of EU law, in particular the Directives, we can find connections to the right to disconnect in their provisions. The most significant is Directive 2003/88/EC of the European Parliament and of the Council of 4 September 2003 concerning certain aspects of the organisation of working time, according to which all workers should have adequate rest periods, the concept of 'rest' being expressed in units of time, i.e. days, hours or parts thereof.

The growing need to recognise and regulate the right of employees to disconnect and thus protect their health has also become a major issue in the European Union institutions. On the basis of the case-law of the Court of Justice³⁸⁵ and various studies³⁸⁶ the European Parliament proceeded to

³⁸² AHLERS, E.: Flexible and Remote Work in the Context of Digitalization and Occupational Health. In: *International Journal of Labour Research*, 2016, Vol. 8, No. 1-2, p. 90.

³⁸³ BERGEN, C. W., BRESSLER, M.: Work, Non-Work Boundaries and the Right to Disconnect. In: *Journal of Applied Business and Economics*, 2019, Vol. 21, No. 2, pp. 51-70.

³⁸⁴ AVOGARO, M.: Right to Disconnect: French and Italian Proposals for a Global Issue. In: *Law J. Soc. & Lab*, 2018, Vol. 110.

³⁸⁵ See further Judgment of the Court of Justice C-518/15 and C-55/2018.

³⁸⁶ See further EUROPEAN PARLIAMENT: *European Added Value in Action: The Right to Disconnect*, 2020, available online: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/642847/EPRS_BRI\(2020\)642847_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/642847/EPRS_BRI(2020)642847_EN.pdf)

adopt the Resolution of the European Parliament of 21 January 2021 with recommendations to the Commission regarding the right to disconnect (2019/2181(INL)). In the Resolution, the European Parliament highlights the negative consequences of the use of information and communication technologies and the need to be constantly connected, including the blurring of the boundaries between work and private life, the impact on employees' mental health (reduced concentration, cognitive and emotional overload, isolation, dependence on technology, lack of sleep, anxiety and burnout syndrome) and their physical health (the impact of static body postures over long periods of time causing muscle strain and musculoskeletal disorders). The objective of Directive should be to protect health and safety and improve working conditions for all workers by setting minimum requirements for the implementation and enforcement of the right to disconnect.³⁸⁷ The European Parliament Resolution also called on the Commission to include the right to disconnect in its new strategy on occupational health and safety and to explicitly develop new psychosocial and occupational health and safety measures.

In the Resolution, the European Parliament defines the right to disconnect as the right not to perform directly or indirectly work activities and not to engage in work-related communication via digital tools outside working hours, while defining working time in accordance with Article 2(1) of Directive 2003/88/EC.³⁸⁸ The right to disconnect should belong to all workers who use ICT equipment for work purposes, and employers should be obliged to respect this right, and the European Parliament stresses that this should be granted to all workers, regardless of their status and working conditions, and should apply to all sectors, both private and public.

The European Parliament, in the wording of the proposed draft directive, not only takes the approach of prescribing an obligation for Member States to legally enshrine the right to disconnect for all employees indiscriminately, but obliges Member States to ensure that employers take the necessary measures to implement the right of employees to disconnect. To this end, Member States should ensure that employers set up an objective, reliable and ac-

³⁸⁷ EUROPEAN TRADE UNION CONFEDERATION: *Position on the Right to disconnect*, 2021, available online: https://www.etuc.org/sites/default/files/document/file/2021-04/Adopted-%20EN%20ETUC%20Position%20Right%20to%20Disconnect_0.pdf

³⁸⁸ The 'working time' means any time during which a worker works under the instructions of an employer and performs his activity or duties in accordance with national law and/or practice.

cessible system to measure the amount of time each worker works each day, in accordance with the right to the protection of the privacy and personal data of employees. The proposed draft directive also requires Member States in consultation with the social partners, to establish the following minimum working conditions:

- a) practical arrangements for switching off digital tools for work purposes, including all work-related monitoring tools;
- b) a system for measuring working time;
- c) a health and safety assessment, including psychosocial risks, regarding the right to disconnect;
- d) the criteria for any exemption from the requirement that employers exercise the right of workers to disconnect;
- e) in the case of an exemption under point (d), the criteria for determining how compensation for work performed outside work is calculated in accordance with Directives 89/391/EEC, 2003/88/EC, (EU) 2019/1152 and (EU) 2019/1158 and with national laws and procedures;
- f) awareness-raising measures, including on-the-job training, to be taken by employers regarding the working conditions referred to in this paragraph.³⁸⁹

The Slovak Republic has also responded to these demands and, effective March 1, 2021, has granted teleworkers the right to disconnect. Before the adoption of the right to disconnect in the Labour Code, theory and practice in Slovakia recommended the employee to enshrine in the employment contract the so-called right to disconnect from the network, i.e. not to be disturbed by the employer on non-working days.³⁹⁰ However, while such a recommendation is appropriate, it is essential to point out that few employees will be given a real opportunity to influence the content of their employment contract.

With effect from 1 March 2021, the right to disconnect is conceived in the Labour Code as follows: *'An employee performing homework or telework shall have the right not to use the work equipment used for the performance of homework or telework during his or her continuous daily rest and continuous weekly rest, unless he or she is ordered or agreed to be on work standby or*

³⁸⁹ Article 4(1) of the Annex to the EUROPEAN PARLIAMENT: *Resolution of 21 January 2021 with recommendations to the Commission on the right to disconnect*, 2021, available online: https://www.europarl.europa.eu/doceo/document/TA-9-2021-0021_EN.html

³⁹⁰ BARANCOVÁ, H.: *Nové technológie v pracovnom práve a ochrana zamestnanca (možnosti a riziká)*. Prague: Leges, 2016, p. 116.

*to work overtime during that time, during the period of leave, on a holiday for which the work has been cancelled and during an obstacles to work. An employer shall not treat as a failure to perform an obligation if an employee refuses to perform work or comply with an instruction during the time referred to in the first sentence.*³⁹¹ The quoted provision grants the right to disconnect exclusively to employees performing homeworking and teleworking. We view this as a major drawback, since, as numerous studies have shown, the rest time of employees who carry out their work using information and communication technologies is very often interfered with by requests from the employer or the employees' supervisors. These requests can range from simple and short e-mail replies to tasks that require a significant portion of the employee's rest time. At the same time, trends in the European Union institutions suggest that the right to disconnect should be granted to all employees without distinction, as long as they meet the condition that they use information and communication technologies in their work.

³⁹¹ Provision of Sec. 52 par. 10 of Law No. 311/2001, the Labour Code.

11. POTENTIAL OF EMPLOYABILITY 2.0 FOR EMANCIPATING WORKERS FROM TECHNOLOGICAL DOMINION

What has been said so far about the perils of technology in employment must inevitably be concluded with the notion of employability. Assuming that technological unemployment describes probable (even if uncertain) threat for labour market sustainability, and adequate dismissal regulation is capable to make the introduction of labour-disrupting technology – if not balanced – at least ‘proceduralised’, hence the final step towards safeguarding of the labour market should be to provide for painless transitioning for the victims of automation-induced displacement. Employability – defined as a set of skills and competencies indispensable in order to meet the changing needs of employers (or customers) and thereby to help individuals to realize aspirations and potential at work³⁹² – unlike previous two phenomena, seems to be lacking legal relevance.

Today everything comes down to the individual. It is left up to the individual to find out what he is capable of doing, take this ability to the extreme and choose the ends to which this ability can best be applied.³⁹³ We are told to learn ‘*how to race with the machines*’,³⁹⁴ understand our limitations and use our strengths to remain valid players on labour market.

Set of human competitive qualities is getting slimmer and slimmer with acceleration of technological progress. Thanks to the first industrial revolution the machines were able to outdo the strength of human muscles, whereas today’s technology is competing with our mental power. In 1997 world chess champion Garry Kasparov lost a match against an IBM computer called Deep Blue, showing that one of the most intellectually advanced hu-

³⁹² Employability is a concept frequently elaborated by work psychologist: BHARGAVA, A., BESTER, M., BOLTON, L.: Employees’ Perceptions of the Implementation of Robotics, Artificial Intelligence, and Automation (RAIA) on Job Satisfaction, Job Security and Employability. In: *Journal of Technology in Behavioral Science*, 2021, Vol. 6, p. 108.

³⁹³ BAUMAN, Z.: *Modernità liquida*. Bari: Editori Laterza, 2011, p. 61.

³⁹⁴ Brynjolfsson and McAfee dedicate whole chapter to help individual workers (or better yet, the parents who would like to raise ‘employable’ children) to understand their advantages and suggest ‘*tools to help you stand out*’. BRYNJOLFSSON, E., MCAFEE, A.: *La nuova rivoluzione delle macchine. Lavoro e prosperità nell’era della tecnologia trionfante*. Feltrinelli Editore Milano, pp. 200–217.

man capacities like playing chess is suitable for computerization. Already in 2009 any ordinary personal computer was able to beat the human chess geniuses.³⁹⁵ Today, computers can even write prose and poetry, or at least something resembling them. And here we stumble upon Achilles heel of computers – while they can perfectly use information in their database to create content or foresee opponent chess strategies, they are incapable of creating brand new ideas. Therefore the assumption is that ideation, creativity and innovation are the only remaining skills that could save us from technological unemployment and render us employable. Those are the same abilities behind greatest achievements of humanity, as a result of perseverance through trial-error phase, and often build on simple mistakes thanks to human ability to turn failure into success.³⁹⁶ But those are also the attributes that, according to Vardaro, used to distinguish entrepreneur (who was able to organise and innovate production process through his dominion over technology) from worker (whose work was dominated entirely by technology and like technology he was only entrepreneur's tool of production). Similar abilities have represented in past 'the element of professionalism' that entailed different quantitative measurements of working positions in terms of retribution as well as superiority,³⁹⁷ nevertheless voluntarily overlooking ability to dominate technology. By moving the dividing line between entrepreneur/worker and likewise between subordinated employee/self-employed person – and placing it in the relation to technology, Vardaro redesigns definition of subordination also in the light of mastery of new digital technologies and ability to innovate.³⁹⁸ It has been argued that requested employment skills of the future will be the qualities capable to emancipate humans from technological dominion – innovation, ideation and creativity. Formally subordinated workers 'reclaiming knowledge and technology'³⁹⁹ are already widespread in the labour market, so we could assume that new category is being created –

³⁹⁵ Ibidem, p. 154.

³⁹⁶ 'What characterizes humanity is a specific ability to turn failure into success. All French cheeses can be explained by something going wrong. The French tried to produce normal cheese, like Swiss or Basque, and then it got rotten. Then, oh my god, you have French cheese. For me, this is what makes the specifics of human intelligence.' ŽIŽEK, S.: *Pandemic! Chronicles of a Time Lost*. Polity Press, 2021, p. 83.

³⁹⁷ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, pp. 98–99.

³⁹⁸ Another distinguishing aspect is 'coloration of existential type', in other words attitude of existential alienation assumed by worker towards technology. Ibidem, p. 120.

³⁹⁹ RAZZOLINI, O.: La nozione di subordinazione alla prova delle nuove tecnologie. In: *Diritto delle Relazioni Industriali*, 2014, Vol. XXIV, No. 4, p. 2.

not subordinated to technology – that must be properly re-evaluated. However, too much focus on those workers means also a risk of creating the ‘economics of superstars’⁴⁰⁰ and aggravate disparities.

Undeniably, synchronizing skills and competencies with labour market constitutes a valid issue, but it can hardly be considered a ‘problem’ resolvable individually. Governments should be obliged to alleviate burden of employability from individual worker’s shoulders. It seems inevitable to conclude that nowadays individual employability – determined by ability to think outside the ‘black’ box of algorithm – represents central issue for governments’ social policy and thus is complementary to evolution of labour law regulation. There is a need for policies that are able to reconcile the workforce with economic dynamism and create a more qualified, more educated workers, and that would ultimately lead to skill-oriented technological change.⁴⁰¹ Because, as it happens, *‘the rejection of the freedom to participate in the labour market is one of the ways of keeping people in bondage and captivity’*.⁴⁰²

Hence, once a digital contractual work relationship is over, question arises whether worker’s professional history finishes with it. Even among academics it is still a fairly new issue.⁴⁰³ Prior the second machine age outbreak, workers’ skills and experiences gained throughout the duration of employment relationship were attested by his position on a job classification scale; the more complex the position with more encompassing responsibilities and duties, the higher level and category the worker occupied. This system – still valid today for overwhelming majority of subordinate employees – contributed to more transparent job market with comprehensible professionalism criteria. All the actors entering and leaving the job market were thus immediately assessable with respect to their previously obtained experiences. Besides, universally recognised classification systems allowed the workers to move be-

⁴⁰⁰ ROSEN, S.: The Economics of Superstars. In: *The American Economic Review*, 1981, Vol. 71, No. 5, pp. 845–858.

⁴⁰¹ See SIGNORINI, E.: *Il diritto del lavoro nell'economia digitale*. Torino: Giappichelli Editore, 2018, pp. 33–42; which sees in education and research the best answer to automation.

⁴⁰² SEN, A.: *Development as Freedom*. Anchor Books, p. 7.

⁴⁰³ For the one exception to the rule see TEUBNER, T. et al.: Unlocking Online Reputation. On the Effectiveness of Cross-platform Signalling in the Sharing Economy. In: *Business and Information Systems Engineering*, 2020, Vol. 62, No. 6. Said author focuses all his research to the issue of trust in digital services, including the reputation portability between digital platforms. See also TEUBNER, T. et al.: In Stars We Trust – A Note on Reputation Portability between Digital Platforms. In: *Business and Information Systems Engineering*, 2021.

tween employment contracts without losing what they earned in terms of professionalism – their ‘professional score’, or in other words, reputation.

Workers on digital labour platforms can see their professional score grow and diminish in even clearer manner. Platforms’ evaluative infrastructure offer systems of digital ratings and rankings⁴⁰⁴ that aggressively quantify not only worker’s professionalism but also characteristics deemed important by single platform or subjective and possibly biased evaluations from the clients.

Another characteristic of platform workers is their increased mobility. In fact, the very advertising strategy of big digital platforms dwells precisely on the contingent, take it or leave it nature of the job.⁴⁰⁵ However, rather than only supplementing their income with low paid platform work, many such workers either work full-time for one platform or juggle between two or more simultaneous jobs on different labour platforms.⁴⁰⁶

Therefore the portability and interoperability of platform workers’ professional reputation becomes of utmost importance.⁴⁰⁷ External and internal reputational system not only put platform workers in a ‘state of permanent

⁴⁰⁴ Whereas a rating is understood as judging something as better or worse than a standard, a ranking is immediately grasped as assessing something as better or worse than some other — even when the ranking was produced neither with reference to any standard nor with any head to head comparison between the actors/objects ever having been made. See STARK, D., PAIS, I.: Algorithmic Management in the Platform Economy. In: *Sociologica*, 2020, Vol. 14, No. 3, p. 57.

⁴⁰⁵ Uber has infamously built its propaganda against employment status classification on the alleged benefits of flexibility in favour of drivers’ needs, be it other jobs, health problems or family duties. See <https://www.uber.com/us/en/u/flexibility/>.

⁴⁰⁶ So called multi-home workers struggle to avoid being trapped by one predominant platform. See SIGNORINI, E.: *Il diritto del lavoro nell’economia digitale*. Torino: Giappichelli Editore, 2018, p. 41. Similar to the phenomenon of multi-home workers are so called slash workers, defined as holders of two or more jobs normally in different sectors. Slash workers may typically move between online to offline assignments, or between qualified project assignments and repetitive microtasks. See Slash workers and industrial relations project, *Detection and analysis of relevant practices in industrial relations: case studies’ report*, University of Cadiz, 2021, available online: https://www.swirlproject.eu/wp-content/uploads/2021/06/Case-study-REPORT-DRAFT-19.05.21-2.pdf?fbclid=IwAR3UKk7xu8xQ3RO_2pwVW8_AIO2G6EfwClpX65OtQgo86BbU0t4ZeMkvGRw.

⁴⁰⁷ See EUROPEAN COMMISSION: *Exploratory Study of Consumer Issues in Online Peer-to-peer Platform Markets*, 2017, available online: <https://op.europa.eu/en/publication-detail/-/publication/477f147f-b72e-11e9-9d01-01aa75ed71a1/language-en>. The EU addressed the issue also as a part of the broader policy package regarding the working conditions of platform workers. See EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Better Working Conditions for a Stronger Social Europe*:

probation,⁴⁰⁸ but it also infringe their mobility as it ties them to particular platforms. Impossibility for platform workers to import their professional score from one platform to another forces them to stay with current employer in order not to lose their hardly earned good rating. Currently digital workers are unable to take any proof of skills or good reputation acquired using one platform to any other platform or to wider job market.

Not even platforms always benefit from this closed, non-transparent system: merely big, rooted platforms may feel safe from the new competitors as workers are dissuaded from building a new reputation from scratch.⁴⁰⁹ Yet every platform employer could potentially recognise advantages that transferable reputation would bring. Besides gaining a competitive lever to win over workers from other platforms, reputation portability could also eliminate (or at least reduce) the problem of information asymmetry; and since digital labour platforms have been coping with information asymmetry by increasing surveillance of the workers, any major transparency shift could lead to less excessive Big Brother strategies.

However, to mitigate the ‘lock-in effect’, legislators would have to tackle few complex technical and legal issues. The problem with privacy is the first one that comes to mind. Transferring worker’s personal data from one platform to another – especially after his contractual working arrangement has terminated – might infringe his right to privacy. Processing of worker’s personal data is generally justified by the necessity for the performance of the contract pursuant to Article 6, paragraph 1, letter b) GDPR; that means that such processing shall be considered lawful only when it is necessary for the execution of the contract to which worker is currently a party or, at some conditions, prior to entering into a contract.⁴¹⁰ It follows that the processing of the data, and therefore also migration of reputation data from one plat-

Harnessing the Full Benefits of Digitalisation for the Future Work, 2021, available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2021%3A761%3AFIN>.

⁴⁰⁸ PRASSL, J., RISAK, M.: Uber, TaskRabbit, & Co: Platforms as employers? Rethinking the Legal Analysis of Crowdwork. In: *Comparative Labour Law & Policy Journal*, 2016, Vol. 37, No. 3, p. 9.

⁴⁰⁹ TEUBNER, T. et al.: Unlocking Online Reputation. On the Effectiveness of Cross-platform Signalling in the Sharing Economy. In: *Business and Information Systems Engineering*, 2020, Vol. 62, No. 6, p. 510.

⁴¹⁰ TODOLI’ SIGNES, A.: The Evaluation of Workers by Customers as a Method of Control and Monitoring in Firms: Digital Reputation and the European Union’s Regulation on Data Protection. In: *Transfer: European Review of Labour and Research*, 2019, Vol. 25, No. 4, 2019, p. 8.

form to another, will not be lawful when the working relationship is terminated.

Moreover, there has been a number of failed private initiatives to facilitate online reputation portability, namely by enabling users to create so called ‘reputation passports’.⁴¹¹ One of the projects that could be possibly having some decent success is the one aiming to integrate public employment service with wide range of job experience information, including the work for labour platforms. Swedish JobTech project is developing data interoperability infrastructures and standards to allow not a mere workers’ mobility between digital platforms but their further organic integration within all-encompassing market space.⁴¹² One could argue that when the evidence of individual skills and professional experience will be transferable across all the labour market – i.e. between different labour platforms but also towards conventional employment arrangements – only then the portability will reach its primary goal to provide for equal opportunities for all the workers independently from their status.

Connected to the issue of the reputation portability is a concept of professionalism. The fact that overall worker’s professional baggage cannot be fully subsumed under the object of work performance brought some commenta-

⁴¹¹ In recent past there have been a few private attempts, albeit unsuccessful, to solve the portability problem. Specific platforms – such as Traity, Deemly or Trust Cloud - were created with aim to collect data and calculate the score by ‘translating it’ from ratings and reviews on different platforms. During registration, the platform asked users to log into the platforms where they were registered to access their ratings, as well as at least one social media platform to verify their identity. Final score could have been then used across platforms as proof of reliability. With regards to privacy protection, generally platform’s Privacy policy stated that user’s information was encrypted and will not be sold to third parties. However, these attempts did not turn out to be successful due to the failure to involve other platforms, trade unions and policy makers in their plans. See *Portability of Reputation Data for Gig Workers – A Workshop Report: First Steps Are Taken, Platform Entrepreneurs Show Willingness to Move Forward*, 2020, available online: <https://kluspaspoort.nl/2020/10/19/portability-of-reputation-data-for-gig-workers-a-workshop-report-first-steps-are-taken-platform-entrepreneurs-show-willingness-to-move-forward/?lang=en>.

⁴¹² See <https://jobtechdev.se/en>. However, even Job Tech’s goals are hindered by the lack of inter-operability standards across the digital economy. For inter-operability to be realised, the technical challenge of harmonising these into a standard model will need to be addressed. This will require platforms to release such data for the purposes of harmonisation, which introduces concerns over whether GDPR will facilitate or constrain such data sharing. See CEDEFOP: *Developing and Matching Skills in the Online Platform Economy*. Luxembourg: European Centre for the Development of Vocational Training, 2020, p. 58.

tors the idea to replace such concept with the notion of professionalism.⁴¹³ Consequently, work performance would not entail merely traditional *facere* of the worker but also areas connected to his behaviour and his ‘professional baggage’, meaning range of skills and experience.⁴¹⁴ Workers on digital labour platforms already encounter similar type of open classification under the label of reputation; whereas regular classification in collective contracts is connected directly to distinct retribution grades, reputational baggage of platform workers have indirect effect on the compensation possibilities – for instance riders through getting better time slots or freelancers on Fiverr rising the internal ranking ladder linked with higher compensation possibilities. In this sense labour platforms model show perfectly its wide influence on necessary re-interpretation of all labour law categories. If on the side of new employers – be it the platforms or any conventional entrepreneur – there is a tangible interest for quantification of work, then the policy makers and regulatory authorities must recognise the existence of counterposed interest: workers’ need for ‘qualification’, intended as finding intrinsic quality of labour, perhaps even in its most subjective manifestation – the worker.

*‘The fracture between professionalised and technologically dependent work’*⁴¹⁵ passes therefore through all the categories of workers but it reveal itself in a relationship between work and knowledge. Only those who have an immediate and authentic ‘*dominion over the network of social and market relations*’ will not become a factor of production for others.⁴¹⁶ The investment in skills and education shall prevent not only the threat of technological displacement and thus increase overall worker’s employability, but rather – *‘because it is this extraordinary intertwining between work and knowledge that*

⁴¹³ In this vein GARGIULO, U.: La determinazione della prestazione di lavoro tra libertà e dignità. In: *Mezzo secolo dallo Statuto dei lavoratori. Politiche del diritto e cultura giuridica*. Editoriale Scientifica, 2020, p. 387.

⁴¹⁴ Ibidem, p. 389. As author correctly underlines, all this notwithstanding the legislator’s contradictory move in replacing equivalence principle from the Article 2103 of Civil Code, when ‘*the use of this criterion – of value, allowed to register not only the qualitative differences but also the qualitative changes in the work performance, guaranteeing the provision a significant mimetic capacity capable of absorbing the concepts of dynamic professionalism, suitable to reconcile the needs to protect the dignity of the worker with the employer initiatives of professional mobility, connected to an ever greater organizational flexibility.*’

⁴¹⁵ VARDARO, G.: Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro. In: *Politica del Diritto*, 1986, No. 1, p. 114.

⁴¹⁶ RAZZOLINI, O.: La nozione di subordinazione alla prova delle nuove tecnologie. In: *Diritto delle Relazioni Industriali*, 2014, Vol. XXIV, No. 4, p. 3.

can lead the 'work' to become more and more 'awareness' and therefore the ability to choose and, hence, creativity and freedom' – to liberate worker once and for all from the 'abstract work without quality'.⁴¹⁷

⁴¹⁷ From the lectio doctoralis of Bruno Trentin, called 'Lavoro e conoscenza', 2002, available online <https://www.fondazionevittorio.it/it/lavoro-e-conoscenza-lectio-doctoralis>.

12. THE FUTURE OF LABOUR LAW IN THE SLOVAK REPUBLIC

12.1. Atypical forms of employment

The trends in the European Union Member States indicate that new forms of employment are becoming increasingly prevalent in the working environment. It is therefore essential that the legislation in this area adapts to accommodate these changes. Research by the European Parliament⁴¹⁸ suggests that in the coming decades, some of the member states of the European Union (including Slovakia) will see more than 60% of the workforce lose their jobs due to the advancements in information and communication technologies. A study by McKinsey shows that up to 53% of work activities in Slovakia – which is equivalent to approximately 1.2 million jobs – can be automated by 2030, significantly impacting the labour market and society.⁴¹⁹

On the other hand, it is important to note that while new technologies will eliminate some jobs, they will also create new opportunities and entirely new forms of (dependent) work, which will be the result of new business models (such as the collaborative economy). This idea is supported by the European Commission's guidelines, which suggest that collaborative platforms have the potential to create new job opportunities, flexible working conditions and new sources of income.⁴²⁰ However, it should be noted that the loss of jobs will likely outnumber the increase, and finally, the new jobs will primarily be for educated, technically and technologically proficient people, while simple auxiliary work will gradually disappear.⁴²¹

⁴¹⁸ See DACHS, B.: *The Impact of New Technologies on the Labour Market and the Social Economy*. Brussels: STOA, 2018, available online: [http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614539/EPRS_STU\(2018\)614539_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/614539/EPRS_STU(2018)614539_EN.pdf)

⁴¹⁹ NOVAK, J. et al.: *The Rise of Digital Challengers. How Digitization Can Become the Next Growth Engine for Central and Eastern Europe. Perspective on Slovakia*. Digital/McKinsey, available online: https://digitalchallengers.mckinsey.com/files/The-rise-of-Digital-Challengers_Perspective-on-SK.pdf

⁴²⁰ EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A European agenda for the collaborative economy*, 2016, available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A356%3AFIN>

⁴²¹ Forecasting estimates confirm such a simplified conclusion. FIFEKOVÁ, E., NEMCOVÁ, E.: Priemysel 4.0 a jeho implikácie pre priemyselnú politiku EÚ. In: *Prognostické práce*,

Unfortunately, the Slovak Republic legislation does not adequately address this matter. The Labour Code fails to regulate the vast majority of these new forms of employment or the legislation turns out to be insufficient or inappropriate. This is evidenced by the way the legislator in Slovakia tends to approach the changes in legal regulation, in particular by amending the provisions on domestic work and teleworking. This modification – after the amendments – represents European standards. As can be seen in explanatory report, the impetus for changing the legislation and modernising the provision on domestic work and teleworking was driven by changing habits and a reassessment of the employee's permanent presence in the workplace. The legislator has responded to the changes of the work environment, where more and more employees are doing teleworking.⁴²² Another driving factor for the revision of the legislation was Directive (EU) 2019/1152 of the European Parliament and of the Council of 20th June 2019 on transparent and predictable working conditions in the European Union. Indeed, the Directive requires from all of the Member states, including the Slovak Republic, to adopt the necessary measures to comply the goals with the Directive. The implementation of this directive, in particular the institute of so-called minimum predictability of work, has fundamentally changed the form of the legislation on agreements on work performed outside an employment relationship. It is the agreements on work performed outside the employment relationship that can be considered as equivalent to the institute of well-known occasional work.

The atypical element of the work performance in Slovak legislation is contained in the institute of job sharing (Sec. 49a of the Labor Code). The job sharing refers to a situation where employees with reduced working hours distribute their working time and job responsibilities amongst themselves. This kind of work performance is meant to facilitate balance between work and family life, or to allow for occasional work alongside the studies or during retirement. Despite its modern nature, the job sharing is not widely used in practice. Several administrative, organizational and perhaps even human barriers hinder the attractiveness of this form of work (such as difficulty in leading a group of employees, communication issues, difficulties in dis-

2016, Vol. 8, No. 1, p. 24. Cf. SEILEROVÁ, M.: *Formy a spôsoby výkonu práce pri používaní informačno-komunikačných technológií a ochrana zdravia pri práci*. In: *Práca 4.0, digitálna spoločnosť a pracovné právo*. Bratislava: Friedrich Ebert Stiftung, 2018, pp. 61–83.

⁴²² See explanatory memorandum – special part to LP/2020/397 – Act amending Law No. 311/2001, Labour Code, as amended, and amending certain acts.

tributing work tasks, working hours and job equipment, or also the ability of individuals to work together in a team). Legal obstacles are also emerging, in particular, the obligation to substitute for one other if one is unable to work. If there is an obstacle to work on the side of an employee in a job sharing, the employees with whom the employee shares the job must substitute for the employee unless there are serious reasons preventing this on their side. The employer is obliged to inform the employee without unnecessary delay should the need arise for them to substitute. However, the legislation does not provide guidance on how to classify the work of an employee who substitutes another co-worker and how to assess his wage claims pertaining to him for that performance of work.⁴²³ The importance of job sharing for the real modernization of the Slovak working environment requires a review of the legislation and the identification of the problems of its application in order to achieve its more extensive usability.

However, the anticipated changes in the legal situation may not be sufficient in compared to the developments across the European Union member states. In order to be ready for new forms of employment, the legislation in Slovakia needs to make other changes, we dare say, of a more forceful nature. As can be seen from the definition of the new forms of employment in question, some forms of work are carried out with the aim of achieving a certain result of a tangible or intangible nature. However, under current laws in Slovakia, labour law only applies to dependent work, and therefore a specific, repetitive activity performed by an employee for the employer. For this reason, many new forms of employment could not be considered as the performance of dependent work by an employee for an employer under the legislation in Slovakia.

The expressed considerations should also be translated into the search for an optimal model of the contractual system in labour law.

⁴²³ LAPINOVÁ, E.: Atypické/flexibilné formy práce ako nástroj podpory zosúladiťovania pracovného a rodinného života. In: *Determinanty využívania flexibilizácie práce v SR z pohľadu rodiny a ich implementácia do sociálneho systému*. Banská Bystrica: Ekonomická fakulta Univerzity Mateja Bela v Banskej Bystrici, 2014, pp. 1–17; also ŠVEC, M., TOMAN, J. et al.: *Zákonník práce. Zákon o kolektívnom vyjednávaní. Komentár. Zväzok I*. Bratislava: Wolters Kluwer SR s.r.o., 2019, p. 474.

12.2. The rigidity of contract labour law

Private law relations are characterised by a large degree of contractual freedom, where subjects can implement their own will in legal relations based on consensus. Of all the private law sectors, this principle is most qualitatively restricted in labour law. The autonomy of the will is overridden by another principle typical of labour law, namely the principle of the protection of the employee in the employment relationship. However, the protective function of labour law and the excessive rigidity of the legislation limit the coverage of atypical employment by labour legislation.

Another obstacle for which some of the new forms of employment could not be understood as employment relationships is *the numerus clausus* of the contractual types regulated by the Labour Code. Thus, the legislation only allows for the possibility of establishing an employment relationship through one of the contracts explicitly regulated by the Labour Code.

This means that the subjects of employment relations may only conclude a contract, which is directly provided for or at least foreseen by the Labour Code or another labour law regulation. The contractual labour law thus changes the basic principle of the law of obligations '*what is not prohibited is permitted*' to '*what is not permitted is prohibited*' and, unlike the civil or commercial law of obligations, it maintains the regulation of contractual types of contracts.

As is apparent from the above characteristics of the various new forms of employment, the possibility of establishing an employment relationship or a similar employment relationship would be significantly limited in relation to them. This problem is compounded by the approach of decision-making practice, which refuses to treat relationships that do not involve the performance of dependent work as employment relationships.⁴²⁴ This practice admits only partial subordination of these relations to the regime of the Labour Code, not to mention that this can only happen by agreement of the participants. Legal science is thus faced with pressing theoretical questions, such as the question of the fate of the principle of *numerus clausus* of contractual types (the extension of contractual types of labour law, or the abandonment of this principle) and the question of a new definition of the concept of dependent work. If these issues are neglected, there is a risk that individuals

⁴²⁴ Judgment of the Supreme Court of the Czech Republic of 11 April 2018, File No. 31 Cdo 4831/2017, decision of the Grand Chamber of the Civil and Commercial Collegium.

wishing to engage in work through any of the defined new forms of employment will be excluded from the protection afforded by labour and social security law standards⁴²⁵ and may be forced to work as self-employed on the basis of a commercial relationship.

If we embark on the path of liberalisation of labour law, one of the options (of those outlined above) is to fully legalise the admissibility of atypical contracts in labour law by amending or deleting Section 18 of the Labour Code and establishing a provision similar to Section 51 of the Civil Code. A legal guarantee against possible abuse of the freedom of contract types in labour law could be, as in civil law, a provision according to which an innominate contract must not contradict the content and purpose of the Labour Code, in particular its fundamental principles. If such an atypical (innominate) contract would be contrary to the content and purpose of the Labour Code, it would, like other acts in labour law, be absolutely null and void under the Labour Code.⁴²⁶ Another possibility to protect the abuse of contractual discretion in labour relations is to designate legal provisions, which must be insisted upon (unqualified mandatory nature), similar to what is anchored in the Commercial Code.

The closed system of contract types in the labour law is not sustainable in the long term. However, in the short term, especially in the light of today's labour market and the high disproportion between labour supply and demand, a complete abandonment of the closed number of contract types would not be advisable. This is not only for the protection of employees from abuse of the law (which de jure they understandably enjoy), but above all from the actual abuse of their economically disadvantaged position and, possibly, their lower legal awareness.⁴²⁷ However, this does not mean that new contractual options cannot be included in the Labour Code as needed in application practice, including those that cover atypical employment relationships.

In this context, we thus return to the issue of the unpreparedness of the Labour Code, which strictly enshrines the *dichotomy of the legal regulation of*

⁴²⁵ COUNTOURIS, N., DE STEFANO, V.: *New Trade Union Strategies for New Forms of Employment*. Brussels: ETUC, 2019, p. 7.

⁴²⁶ See further BARANCOVÁ, H.: K prípustnosti atypických zmlúv v pracovnom práve. In: *Právny obzor*, 1998, Vol. 81, No. 6, p. 537.

⁴²⁷ Cf. also OLŠOVSKÁ, A.: Možnosti zvýšenia flexibility slovenského pracovného práva. In: *Europeizácia a transnacionalizácia pracovných vzťahov*. Pilsen: Aleš Čeněk, s. r. o., 2009, pp. 155–165.

*the performance of work.*⁴²⁸ From the point of view of the current legislation, the performance of work is considered either as dependent work with significant social protection or as work regulated by other private law codes, de facto without any significant social protection. In doing so, the performance of work, which is somewhere between autonomy and dependence, is not specifically regulated. The legislator should consider the possibility of creating a specific category of employees (in a broader context, e.g. possibly including statutory officers) with separate rules that would reflect a greater degree of autonomy while providing basic social protection. However, we are aware that relaxing employment regulation for certain categories of employees or work is an extremely complex task with many obstacles.

12.3. Health and safety at work

The Slovak Republic is currently in a period when it is necessary to reconsider the state of occupational safety and health (hereinafter 'OSH'). A new Strategy for Safety and Health at Work of the Slovak Republic for the years 2021 to 2027, along with the program of its implementation for the years 2021 to 2023, has been adopted.⁴²⁹ The document indicates that the OSH sector is a priority for state research and development. From the document, we can deduce the OSH priorities, with the first being the development of cooperation at the national and international level between supervisory authorities, authorities in the field of research, development, education and social partners, since the Slovak Republic recognises that the solution of such a complex issue is not possible without cooperation with the competent authorities operating in the field. The second priority is particularly relevant for the purposes of this application, as it provides that OSH activities, including research and development, are to address the new risks associated with new technologies and the application of the smart industry concept, the risks associated with new forms of work and demographic developments, including the ageing of the workforce, as well as psychosocial risks.

⁴²⁸ The legal status of precarious employment is not a new issue. On this see OLŠOVSKÁ, A.: *Atypické formy zamestnávania*. In: *Liberalizácia pracovného práva – možnosti a obmedzenia*. Zborník z vedeckého sympózia. Trnava: University of Trnava, 2007, pp. 100–102.

⁴²⁹ Strategy for Safety and Health at Work of the Slovak Republic for the Years 2021 to 2027 and the Program of Its Implementation for the Years 2021 to 2023, available online: <https://www.mpsvr.sk/files/sk/praca-zamestnanost/bezpecnost-ochrana-zdravia-pri-praci/dokumenty-2/strategia-bozp-2021-2027.pdf>

In this context, the system and procedures for occupational safety and health protection that have been in place to date should also be reviewed. New forms of employment present new challenges for labour protection, and protection must focus on both the physical and mental well-being of the worker.

The term technostress, which has taken hold in foreign writings, is not a new concept, but it is gaining new content. The term technostress was coined with its original meaning in the 1980s to refer to the repulsion and stress caused by unfamiliarity with new technologies. Pathological psychology referred to technostress as a modern disease, which consisted in a maladaptation disorder caused by an inability to work with modern technology.⁴³⁰

Today, the content of the concept of technostress is changing and evolving. The fundamental problem is no longer ignorance of computer technology, but its overuse and the extraordinary workload it places on staff. New mobile phone technology, which allows for connectivity anytime and anywhere, on the one hand unifies the working environment by allowing access to work emails and documents, on the other hand it requires constant online connectivity. The physiological consequences of technostress are most often considered to be spinal pain, overloading of the hand as a result of prolonged and unilateral straining (so-called RSI – repetitive strain injury) and visual fatigue syndrome. It is repeatedly emphasised that these health problems are linked to psychosocial factors of occupational stress, or technostress is cited as one of the contributing causes. In the psychological field, memory impairment, reduced concentration, impatience, uncomfortable sweating, anger attacks, problems with relaxation and sleep, headaches and other psychosomatic disorders are the most frequently reported consequences of technostress. Nowadays, technostress is affecting more and more people, and there are even proposals to recognise technostress as a separate occupational disease.⁴³¹

Technology overload not only leads to psychosomatic disorders but also to invasion of employee privacy. This phenomenon has been described as a ‘technological paradox’.⁴³² Technological advances, which were supposed to

⁴³⁰ SUH, A., LEE, J.: Understanding Teleworkers’ Technostress and Its Influence on Job Satisfaction. In: *Internet Research*, 2017, Vol. 27, No. 1, pp. 140–159.

⁴³¹ ŽIDKOVÁ, Z.: Technostres. In: *Bezpečnosť a hygiena práce*, 2004, No. 4, p. 11.

⁴³² HAJLI, J., SIMS, J., IBRAGIMOV, V.: Information Technology (IT) Productivity Paradox in the 21st century. In: *International Journal of Productivity and Performance Management*, Vol. 64, No. 4, pp. 457–478.

make employees' jobs easier and simpler, end up leading to greater burdens. Staff questionnaires confirm that some employees feel the need to work faster and under time pressure, even when there are no reasons to do so.⁴³³ In this context, the risk of multi-tasking, which exacerbates stressful situations and the internal experience of stress, is particularly highlighted.⁴³⁴

Against this backdrop, it may seem that the legislation on employee health and safety does not reflect the new forms of employment, but this is only partially true. The protection of the employee's health as a whole, including their mental health, is a priority area of labour law and the subject of several international conventions.

The International Labour Organisation has adopted Convention No. 155 concerning the Safety and Health of Workers and the Working Environment (ratified by 15 EU Member States) and Convention No. 187 concerning a supportive framework for occupational safety and health (ratified by 12 EU Member States). The World Health Organization has focused on mental health more broadly in the Declaration on Mental Health for Europe and in the Action Plan on Mental Health for Europe. The European Union's primary law, namely Article 156 of the Treaty on the Functioning of the European Union guarantees the protection of health at work and the prevention of occupational accidents and diseases as part of a broader social policy. The main EU regulation on the protection of workers' health is anchored in the Council Framework Directive 89/391/EEC of June 12th, 1989, on the introduction of measures to encourage improvements in the safety and health of workers at work. Although the directive is of an older date, it is still relevant in terms of its content, largely because of its abstractness and the general obligations it sets out, which remain unchanged in name but are taking on new content as a result of new technologies. Particularly noteworthy are employer's obligations to assess all potential occupational safety and health risks, to eliminate risks at the source, to adapt work to the individual, particularly in the design of workplaces, the choice of work equipment and the choice of working and production methods, especially in terms of reducing monotonous work and predetermined task work and their impact on health, and to adapt to technical progress. However, health protection is also covered by

⁴³³ SELLBERG, C., SUSI, T.: Technostress in the Office: A Distributed Cognition Perspective on Human-technology Interaction. In: *Cognition, Technology and Work*, 2014, Vol. 16, No. 2, pp. 187–201.

⁴³⁴ OH, S. T., PARK, S.: A Study of the Connected Smart Worker's Techno-stress. In: *Procedia Computer Science*, 2016, Vol. 91, pp. 725–733.

other directives, particularly those providing social and legal protection for specific categories of workers.

We look at national legislation through a different lens than international and EU legislation. This raises the question of whether we can find sufficient instruments in national legislation to protect the physical and mental health of an employee who is exposed to various stressors over a long period of time. The Labour Code contains the basic framework of legal regulation of employee health protection, the elementary content of labour protection is anchored in a separate Law No. 124/2006 on Health and Safety at Work. This Law lays down the general principles of prevention and the basic conditions for ensuring safety and health at work and for the elimination of risks and factors contributing to the occurrence of occupational accidents, occupational diseases and other occupational health hazards, and in its essence covers all risks associated with the performance of work. This basic regulation is then supplemented in particular by Law No. 355/2007 on the Protection, Promotion and Development of Public Health and Law No. 125/2006 on Labour Inspection, and from the regulations of lower legal force it is the Decree of the Ministry of Health of the Slovak Republic 542/2007 on the details of health protection against physical stress at work, psychological workload and sensory stress at work. The Decree in question imposes on employers, *inter alia*, the obligation to take measures to eliminate or reduce to the lowest possible and achievable level increased psychological workload.

A brief summary of the legislation reveals a relatively wide range of legal obligations for employers, which should provide a sufficient basis for the protection of employees' health, even in the face of the new risks associated with the technological revolution known as Industry 5.0.

However, control is problematic. Information publicly available on the website of the National Labour Inspectorate shows that the Labour Inspectorate has conducted several seminars as part of EU-OSHA's Healthy Workplaces Campaign, aimed at managing stress and psychosocial risks at work, and the campaign has been partly reflected in actual inspections in practice. However, the campaign primarily provided help and advice to employees and employers to help them identify and effectively combat stress in the workplace. Preventive actions certainly have an indispensable place in the activities of the relevant labour inspectorates, but the need for control and possible sanctions, *i.e.* the punitive component of the inspection activity, cannot be overlooked either. And in this respect, the labour inspectorate is inactive.

The European Survey of Enterprises on New and Emerging Risks (ESENER) found that more than 40% of employers find managing psychosocial risks more difficult than managing so-called traditional occupational health and safety risks. The sensitivity of the issue and the lack of expertise are cited as the main obstacles. In addition, a survey of employees at senior management level found that almost half of them believe that none of their employees will ever have a mental health problem during their working life. The reality is that as many as one in six employees will suffer from a mental health disorder. Employees with a mental health disorder are seen as a risk to the organisation, when in fact employees suffering from a mental health disorder unrelated to their work can usually work effectively in a workplace with a good psychosocial environment.⁴³⁵

The most common mental disorders caused by the work environment include burn-out syndrome, FOMO syndrome, procrastination syndrome, open space syndrome, sick building syndrome, digital dementia syndrome and tinnitus. In this context, it is therefore highly undesirable that Annex 1 to Law No. 461/2003 on Social Insurance, which sets out a catalogue of occupational diseases, does not include any mental disorders among the occupational diseases. It is true that Annex 1 to the Social Insurance Act provides under point 47 for a so-called 'free entry', i.e. it allows for the inclusion among occupational diseases of other impairments of health arising from work which are neither an accident at work nor an occupational disease included in this list. The condition for the occurrence of the disease is the fact that the disease arose in the course of work and is demonstrably and to a comparable extent to other occupational diseases listed in the list of occupational diseases in a causal relationship with the detected health impairment, and this relationship is assessed by the National Commission for the Assessment of Occupational Diseases. At the same time, however, it should be added that the National Commission for the Assessment of Occupational Diseases has not in its entire activity over several decades in a single case determined mental illness to be an occupational disease.

In doing so, the ILO Recommendation concerning the listing of occupational diseases and the recording and reporting of occupational accidents and diseases recommends that occupational diseases should also include *'post-traumatic stress disorders (...) and (...) other mental or behavioural disorders (...) where a direct link (...) is established between exposure to risk factors*

⁴³⁵ NÁRODNÝ INŠPEKTORÁT PRÁCE: *Kampaň zdravé pracoviská 2014 – 2015*, available online: <https://www.ip.gov.sk/kampan-zdrave-pracoviska-2014-2015/>

arising from work activities and the mental or behavioural disorder from which the worker suffers.' We express the belief that the legislator should be proactive in this respect and gradually include mental disorders in the catalogue of occupational diseases.

12.4. Working poverty

Another challenge for (not only) the Slovak Republic is to adjust the social protection of employees in order to avoid the phenomenon called working poverty. In simple terms, it is a situation where even workers in permanent full-time employment fall below the poverty line because of low income. The lack of simple manual jobs and, conversely, the surplus of manual labour can lead to even greater pressure on lower wages. It is a certain paradox, but employers have never fought against wage increases for highly qualified workers who earn multiple times the minimum wage, a thorn in the side of which has always been wages for the lowest paid positions.

The phenomenon of working poverty goes back in history, and some authors attribute its origins to the following causes: (a) a change in the orientation of the labour market and employment policies in most European countries as a result of the increase in unemployment; (b) structural changes in the economies of developed countries in favour of the services sector; (c) changes in labour codes; (d) measures to combat poverty and unemployment, introducing workfare or welfare-to-work social programmes; (e) the demand for 'low-paid jobs' by specific groups of people, such as working mothers or migrants, who were forced into seeking low-skilled jobs due to their family situation.⁴³⁶ Poverty today is linked to an insufficient level of human capital, as a result of which low-skilled workers are segregated into low-income and short-term jobs. Initial studies on poverty were based on the assumption that employment is the most effective preventive mechanism against poverty. However, this way out does not take into account the fact that people can suffer from poverty even if they are employed full-time.⁴³⁷

From the above, it can be concluded that the creating new, technologically demanding and skilled jobs will not reduce the consequences of poverty for

⁴³⁶ ANTALOVÁ, M., BUGÁROVÁ, M.: Pracujúca chudoba a jej prejavy. In: *Revue sociálno-ekonomického rozvoja. Vedecký recenzovaný on-line časopis*, 2017, Vol. 3, No. 2, p. 23 and the authors cited there.

⁴³⁷ Ibidem, p. 23.

working people, rather, on the contrary, they will become even more vulnerable.

There are several social or economic policies aimed at eliminating or at least alleviating this undesirable situation, but some of them do not seem to be effective. Mention can be made of the institute of minimum wage, maternity and parenthood benefits or care for dependants, tax bonuses, and specific employee benefits for some employers. The authors of this monograph do not even pretend to know the solution to this complex problem that the European Union (still richer than the rest of the world) is struggling with. Therefore it is necessary to allow room for intuitive thoughts and reflections. Raising the standard of living, and *de facto* also wages, is possible by constantly increasing the minimum wage or minimum wage entitlements, but also by reducing the amount of working time while maintaining the wage.

In this context, the authors find the efforts to abolish minimum wages and minimum wage entitlements incomprehensible. Of course, we can admit a debate about the amount of these entitlements, or compensatory allowances for difficulty in performing work and, in particular, wage supplements for work on public holidays, Saturdays and Sundays. However, the complete abandonment of the lower limit of the guaranteed wage is an unwanted and wrong step. Abolishing the minimum wage (and minimum wage entitlements) would result in a larger portion of the remuneration for work being shifted to the informal economy, while the official income would be only symbolic. At the same time, it would further widen the scissors of income inequality, ultimately leading to social instability. The authors also consider the tendencies towards different minimum wage or salary levels for public and civil service work for individual territorial units or districts of Slovakia to be incorrect. Society should strive to erase regional differences and not to reinforce them. Different incomes for the same job (e.g. teacher, educator) should not be considered as something right and desirable. The disparity in the price of real estate and partly in services (there is no difference in other commodities, the opposite is even true in favour of richer regions) is due to the disparity in purchasing power. The latter is indisputable and is not typical just for Slovakia, although it should be added that in Slovakia the differences are particularly pronounced. Different legal remuneration for equal work is discriminatory in the first place and ultimately not beneficial to society either. This will only unnecessarily increase the disproportionate disparity in the purchasing power of the population in the regions.

12.5. Working time

The basic equality exists: regardless of social data, everyone's day has 24 hours. Technically, time is something that cannot be produced.⁴³⁸ Work activity, like any other activity, takes place in time. Its daily or weekly range is determined according to economic criteria and must be long enough for the employee to receive a salary to satisfy his 'natural needs'.⁴³⁹ On the contrary, the employer needs this activity in order to make a profit, since he must supply goods and services to the market. From the point of view of both counterparts, the working day is extended by the time strictly necessary in order to generate income for one party, cover expenses and create profit for the other through the combination of labour and other resources. Although, from an economic point of view, it seems essential to set a minimum working time to ensure the employer's profit, and from a social and legal point of view, it is necessary to set a maximum to protect the health of employees.⁴⁴⁰

In relation to the possibility of reducing working time, European Union's Directive 2003/88/EC of the European Parliament and of the Council on certain aspects of working time ('the Working Time Directive'), sets a maximum for working time and a minimum for rest periods. The question is whether it would be politically (and only then legally) feasible to reduce the maximum working time while keeping the level of remuneration unchanged. After all, the attempts to reduce working hours are not a new issue.

Already at the beginning of the last century, there were tendencies in the international environment to reduce the length of working time and, at the same time, legally establish the minimum length of rest after work. These workers' rights have gradually taken on a fundamental rights dimension and have become respected by the wider international community. An important role was played by the work of the International Labour Organization. Its first Convention, No. 1/1919, regulated the length of working time in industry, followed by others such as Convention No. 14/1921 on weekly rest periods, Convention No. 30/1930 on working time in trade and in offices, and then Convention No. 47/1935 on the 40-hour working week.

⁴³⁸ ANISI, D.: *Creadores de escases*. Madrid: Alianza Ed., 1995.

⁴³⁹ MARX, K.: *El Capital*. 2nd edition. Book I. Barcelona: Orbis, 1986.

⁴⁴⁰ Opinion of Advocate General Ruiz-Jarabo Colomer delivered on 12 July 2005 in Case C-14/04, *Abdelkader Dellas and Others v Premier ministre and Ministre des Affaires sociales, du Travail et de la Solidarité* was based on these considerations and with reference to the citations cited above (ANISI, D., MARX, K.).

In a historical context, working hours have steadily decreased, while maintaining (ideally) an increase in the standard of living of employees. Looking to the future, with the advent of algorithms, robotization and later artificial intelligence on a wider scale, there is space for a renewed reduction in the maximum (or average) working time of an employee. Attempts to reduce working hours began in Sweden, where working hours were temporarily reduced to six hours. At the same time, the results were encouraging, the efficiency of work increasing within six hours, employees feeling overall healthier and not succumbing to depression or burnout as often. On the other hand, such a model is demanding from the employer's point of view (in this specific case, the costs are borne de facto by the State), which, while maintaining wages and reduced working hours, struggled to maintain competitiveness. Nevertheless, the consideration of reducing working hours will (quite rightly) be repeated in Europe. The Slovak Republic should not lag behind.

It is clear that the legal futurology is closely connected to past legal efforts and historical events. Working time and the maximum length of working time are therefore undoubtedly linked to safety and health at work, but there can be no doubt that material security is also involved. With a reduced number of working hours, individuals would have more time to attend their personal needs, as well as engage in activities that would help them improve their financial situation without having to rely on additional resources.

Within the framework of futurological considerations we could formulate several potential scenarios, two of which stand out as dominant. The first is optimistic. Artificial intelligence will simplify processes, reduce employment, but the overall economic wealth of society will not be reduced and labour will become more expensive. In the optimistic scenario, weekly working hours will decrease, while work will be better remunerated. Jobs that require humans and cannot (at least in terms of today's ideas) be replaced by machines or artificial intelligence (e.g. nursing, care of pre-school children or the elderly) will be highly valued financially and, as a result of reduced working hours, the number of jobs will increase and society will not fall into a spiral of unemployment. The second, let's say borderline scenario, on the other hand, will be pessimistic. Artificial intelligence will eliminate a number of jobs, mostly in manual professions (production operators, truck drivers), and at the same time it will drain jobs that are normally reserved for educated people (translators, experts, brokers), while the newly created jobs will not compensate for the losses. In that case, there will be a huge unemployment rate that the overall society will not be able to cope with. To avoid

major social conflicts, society may provide a minimum guaranteed income to mitigate the effects of unemployment. However, this solution may result in a possible loss of motivation, a decline of work habits for an entire generation, and smaller scale social conflicts. History teaches us that, for the most part, borderline scenarios are unlikely to occur and society will likely follow a moderate course of action. It is not impossible that all these estimates are completely wrong. On the other hand, developments can be foreseen and legislation should not completely turn a blind eye to new trends.

12.6. Amendments, action plans, visions and objectives for employment

It would not be fair to say that Slovak legislator is not participating in the current debate surrounding labour law in any way. Recently, the Labour Code was amended with effect from November 1st, 2022. These changes include modifications to the provisions related to teleworking and working from home, as well as implementation of the Work-Life⁴⁴¹ Balance Directive and the Directive on Transparent and Predictable Working Conditions in the European Union.⁴⁴²

According to the explanatory memorandum, the amendment to the Labour Code, based on the objective of Directive 2019/1152, aims to ensure transparent and predictable working conditions for employees, and in this context

- supplementing selected provisions of the Labour Code concerning the employment contract and the provision of information on working and employment conditions,
- broadening or clarifying the range of information to be received by the employee in order to ensure the requirement of transparency and predictability of the work performed,
- the establishment of the employee's right to request a transition to another form of employment (e.g. from a certain period to an indefinite period),
- provision also for the provision of information in electronic form.

⁴⁴¹ Directive (EU) 2019/1158 of the European Parliament and of the Council of 20 June 2019 on work-life balance for parents and carers and repealing Council Directive 2010/18/EU.

⁴⁴² Directive (EU) 2019/1152 of the European Parliament and of the Council of 20 June 2019 on transparent and predictable working conditions in the European Union.

The amendment to the Labour Code, based on Directive 2019/1158, aims to supplement and clarify the provisions relating to work-life balance for parents and carers. This includes the introduction and clarification of paternity leave and the possibility of requesting flexible forms of work for individuals caring for children.

With several modifications to the Labour Code it has become more practical, responding to the new era of digitalisation (electronic form of communication with employees), while at the same time still protecting employees. In atypical employment this protection has been further increased (information obligations and minimum predictability of work performed on the basis of one of the agreements on work performed outside the employment relationship).

When considering the changes in a wider perspective, it is worth noting that the Slovak Republic adopted the name Smart Industry and has created a plan called the Action Plan of Intelligent Industry,⁴⁴³ which was prepared in cooperation with representatives from various industrial sectors. The action plan provides a set of 35 measures that should be implemented by the end of 2020, and these measures should affect almost 24 thousand enterprises in Slovakia. The action plan aims to support industrial enterprises, service and trade enterprises, regardless of their size, aimed at creating better conditions for the implementation of digitalisation, innovative solutions and increasing competitiveness by reducing bureaucratic burdens, adapting legislation, defining standards, changing education programmes and the labour market, co-financing research, or creating Digital Innovation Hubs, etc.⁴⁴⁴

In addition to the action plan, there is the Digital Transformation Strategy of Slovakia 2030,⁴⁴⁵ which is a framework supra-ministerial government strategy that defines the policy and specific priorities of Slovakia in the context of the already ongoing digital transformation of the economy and society under the influence of innovative technologies and global megatrends of the digital age. In its summary, the strategy emphasizes that it represents a key and crucial material for Slovakia at the beginning of the 21st century, when the transformation of an industrial society into an information society necessarily takes place. It covers the time period from 2019 to 2030 and was

⁴⁴³ *Draft Action Plan of Intelligent Industry*, available online: <https://www.mhsr.sk/uploads/files/8U6RKSS5.pdf>

⁴⁴⁴ *Ibidem*.

⁴⁴⁵ *Digital Transformation Strategy of Slovakia 2030*, available online: <https://www.mirri.gov.sk/wp-content/uploads/2019/06/Strategia-digitalnej-transformacie-Slovenska-2030.pdf>

created within the framework of the ongoing and partially managed processes of digitization, informatization and the single digital market agenda of the European Union, as well as in the context of the global priorities of a broad digital transformation. The strategy thus places primary emphasis on current innovative technologies such as artificial intelligence, the Internet of Things, 5G technology, big data and analytical data processing, blockchain and super-performance computing, which will become a driving force of economic growth and strengthening competitiveness.

From the point of view of labour law, the Digital Transformation Strategy of Slovakia 2030 supports the simplification, acceleration and loosening of regulations in order to be able to innovate and experiment, as well as to assess the impact of the platform economy and changes to work in the digital age on labour law and its institutions in the context of subjects.

The strategy points out that the latest forecast of the economy of the most developed countries in the world created by OECD emphasized the historically low level of unemployment, but it recommends urgently addressing such challenges as the lack of a workforce with advanced digital skills and weak support for innovation in the business sector. It draws attention to the most severe impacts of automation on the Slovak workforce among the OECD countries, considering the industry orientation towards narrowly specialized productions with a low added value and low level of digital skills. Analyses by the European Commission⁴⁴⁶ show that the Slovak economy is still primarily based on traditional industries such as the automotive industry and is only weakly oriented towards the digital economy and innovation industry. The digital economy is growing slowly in Slovakia: between 2012 and 2016, the digital economy in Slovakia grew by only 0.7% per year, which is four times slower than the strong digital economies of the EU. The current growth factors of the country's economy will soon encounter future constraints (e.g. insufficient capitalization, rising labour costs, delayed productivity) unless Slovakia shifts to a digital economy as soon as possible.

However, specific solutions to support employment are dealt with in these documents rather marginally, which is why the science of labour law should be proactive in offering its own solutions rather than waiting for the failures of these programs.

⁴⁴⁶ EUROPEAN COMMISSION: *Country Report Slovakia 2019*, 2019, available online: https://commission.europa.eu/system/files/2019-02/2019-european-semester-country-report-slovakia_en_0.pdf

12.7. New jobs – labour law futurology

The problem can also be accepted as a challenge. The science of labour law and other social sciences (in particular the Slovak legal scientific community) has the opportunity to highlight its position and present ideas and solutions that will guide the legislator and wider society on how to respond to the dynamics of industry and society 5.0.

The first step for scientific insight should be focused on identifying the emerging determinants of the fifth industrial revolution and assessing their negative or positive effects on the protection of the employees and their social rights. Despite the fact that such a work has a general, abstract character, it is important to stimulate scientific debate. Ultimately, general considerations should be directed towards substantially formulated challenges, which will need to be translated into future legislation.

New specific questions are emerging that require broad scientific debate, such as the possibility of introducing a universal basic income or reducing working hours in response to the decline in jobs in the context of digitalisation. The first level of investigation is thus mainly linked to the overall labour market.

The second level focuses on specific individual employment relationships, which are governed by labour laws. In addition to the undeniable impact of digitalisation on the labour market, the technological world integrates many other components directly affecting the individual in the course of his or her work. Digitalisation, which is developing through the rapid growth of information and communication technologies, operates in contradictory directions. New technologies that make it possible to be connected (online) anytime and anywhere, on the one hand, simplify work, unify the work environment and access to documents, on the other hand, require the employee to be ready to respond to the employer's requests at any time. The electric nature of the workplace, employee monitoring and remote work, are all the trends that have already taken root in recent times and to which both the legislator and legal science must respond. Many of the required changes can be adopted directly, without interfering with the overall concept of labour legislation.

Let us also be a little optimistic. There is no doubt that in the future, modern technologies will make it possible to create new jobs on a larger scale and, at the same time, completely new forms of (dependent) work, which will be the result of new business models (for example, the collaborative economy).

As we have already mentioned, such a conclusion is also confirmed by the European Commission's guidance on the collaborative economy.⁴⁴⁷

In the present monograph we have analysed the legal situation, bearing in mind the latent question. How is labour law supposed to deal with new forms of work characterised by a high degree of liberty and freedom? We believe that labour law must ask itself two fundamental questions:

1. Is it a legitimate ambition for labour law to regulate such work performance?
2. If so, by what methods and to what extent is it supposed to regulate the performance of such work, which is significantly different in nature from standard dependent work?

We believe that labour law must answer the first question affirmatively, as it is a desirable and even necessary ambition of labour law to cover, by its own legislation, new forms of work that are emerging, or even arising from, the spread of new technologies and procedures for the recruitment and use of labour. The essential content of labour law, its rules and principles, and also its position in the system of law, is the result of a historical awareness of the necessity of protecting the economically weaker party. At the same time, this imbalance will not disappear with new forms of work, but on the contrary, there is a real risk that it will deepen. Finally, if labour law were to abandon the regulation and protection of new forms of employment, over time, the pressure of reducing social protection would also seep into the typical performance of dependent work.

A more difficult question seems to be in what form to regulate these emerging relationships. H. Barancová makes several proposals in this regard, among other things, raising the issue of potential tripartite agreements in labour law, where, in addition to the direct contractor of the work, the client or the person who ultimately directly benefits from the performance of his work would assume social responsibility for the labour force provider (employee).⁴⁴⁸ One can only appreciate the ideas towards a new approach to employee protection and a new perspective on the regulation of labour law.

⁴⁴⁷ EUROPEAN COMMISSION: *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A European agenda for the collaborative economy*, 2016, available online: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A356%3AFIN>

⁴⁴⁸ BARANCOVÁ, H.: *Európsky pilier sociálnych práv a spoločnosť 5.0*. In: *Európsky pilier sociálnych práv a spoločnosť 5.0*. Prague: Leges, 2018, pp. 7–24.

It is impossible to apply the labour law regulation currently in force to new forms of employment such as strategic employee sharing, temporary management, mobile work based on information technology, voucher-based work, portfolio work, platform work or collaborative self-employment.⁴⁴⁹ Labour law should focus on the minimum standards that it will apply to such performance of work, considering as fundamental:

- a) the responsibility of the contractor and the person benefiting economically from the work for safety and health at work,
- b) the maximum amount of working time, together with minimum breaks from work, including the rules for its scheduling,
- c) a ban on the transfer of the financial risk of the business to the persons carrying out the work.

We are aware that such a scale seems minimal and insufficient, but let us consider it as a basis that should apply to a wide number of people performing work in new forms of employment, even if this work is presented as self-employment. If we were to identify work in new forms of employment as dependent work, there is no reason to abandon the applicable legislation and standard employee protection.

In the present publication we gradually uncover and analyze the starting points, possibilities and risks of the Industrial Revolution 5.0 in correlation with employee labour protection. The topic is extremely broad and can be conceived in a variety of ways, for example by emphasising new forms of work organisation (in particular the collaborative economy and distance employment), which raise the question of the sustainability of the current definition of dependent work or the characteristics of the basic employment relationship, including the definition of employee or by analysing the possibility of social protection of persons in the event of permanent loss of jobs in the labour market (minimum income) or reducing the scope of working time from the same reason. The topic can also be approached philosophically and reflect on the rise or fall of labour law as a separate branch.

We have examined the indicated questions to a lesser or greater extent, and when studying the sources, a (one might say expected) contradiction arises. The institutions of both the EU and the Slovak Republic perceive the advent of information technology in the labour market and in work practices

⁴⁴⁹ Closer KRIŽAN, V.: Nové formy práce a sociálna ochrana. In: *Európsky pilier sociálnych práv a spoločnosť 5.0*. Prague: Leges, 2018, pp. 127–145. ŽULOVÁ, J.: Profilovanie a automatizované rozhodovanie (nielen) v pracovnom práve. In: *Práca 4.0, digitálna spoločnosť a pracovné právo*. Bratislava: Friedrich Ebert Stiftung, 2018, pp. 49–60.

as a positive shift that provides opportunities for further employment, which is supposed to make people's work easier, give them more time for their own privacy, family or hobbies. They also see technological shift as a means for economic growth, but also (in some cases) as a tool for more effective climate protection. In contrast, employees and a significant proportion of employers (one cannot speak of a majority, although statistics vary) view technological change with concern. This is not surprising information; Ford employees destroyed the lines on which passenger cars were later produced *en masse* for the first time, the riots were also associated with the first or, to a lesser extent, the second industrial revolution. The unrest was fuelled by understandable fear and temporary loss of employment and social status. In the end, however, the technological shift meant progress (albeit at a high cost of endangering the environment) and also an extension of workers' rights. Working hours have been reduced, greater protection of occupational safety has been provided, social security for employees and their family members has increased.

Fears and fears still prevail today. The technological revolution, the advent of algorithms and artificial intelligence has an impact on all spheres of life, including the labour market. The electronization of workplaces, the monitoring of the employee, the performance of work from home, all these are trends that have already taken root in recent times and to which the legislator has been forced to react. However, stagnation is not inherent in the information age period. It is characterized by progress, which automatically translates into the sphere of labour relations. The emerging forms of performance and work organisation operating on the basis of online platforms and/or mobile applications are precisely the result of the fourth industrial revolution. The fifth industrial revolution will bring new, no less challenging challenges. Despite the vision that neither the aim of the Industrial Revolution nor its result should be a 'struggle' between man and machine, but should lead to an awareness of human potential,⁴⁵⁰ it is natural to assume that its real impact in the world (and to at least the same extent in Slovakia) will be reflected, among other things, in the number of vacancies and their nature – an increase in highly skilled jobs is assumed almost certainly – a decrease in lower-intensity jobs. The wave of unemployment is not certain, but certainly this fundamental risk cannot be underestimated.

⁴⁵⁰ FIFEKOVÁ, E., NEMCOVÁ, E.: Priemysel 4.0 a jeho implikácie pre priemyselnú politiku EÚ. In: *Prognostické práce*, 2016, Vol. 8, No. 1, p. 24.

Challenges are raised against labour regulation on how to respond to the performance of work through information devices that change the traditional place of work (mobile employees, work from libraries, centres set up by the employer, etc.) in the context of ensuring control over the efficient use of working time, ensuring a standard level of safety and health at work in a session to maintain the protection of the employee's privacy. New forms of work organisation aim to extend the freedom of the working person, focusing on the result of the work (the execution of the task) and placing more confidence in the employer in the employee in the performance of work duties. In particular, in view of the growing trend of so-called intelligent work, it can be assumed that the traditional model of the content of the employment relationship will have to be subjected to a test of applicability to current forms of human labour. Non-standard ways of performing work repeatedly raise the question of the sustainability of the current definition of dependent work or the characteristics of the basic employment relationship, including the definition of employee.

Let us be prepared and hope that we will seize all the opportunities that the Industrial Revolution 5.0 will create for the labour market. A unique opportunity arises and its use will have an impact on the future generations. Ultimately, the economic rise or fall of society will have a profound impact on social protection and the well-being of employees.

SUMMARY

Labour law as an independent legal branch has only existed for about one hundred years. During this time society has evolved beyond recognition – and with it the conventional workplace – but labour law scholars have remained loyal to the dogmatic system ideated in the first years. In particular, relation of labour law to technology has always been marked with a frenemy-like attitude since every technological progress could have potentially meant a leap into the regulatory void with consequences for hardly earned workers' rights. A dialectic between labour law and technology thus consisted in a constant back and forth; whereas scholars – by incorporating it into a very definition of subordination – have recognised the instrumental utility of the technology as 'means to an end', the latter also represented a constant threat for the stability of the working conditions, compliance with health and safety regulation and, last but not least, overall occupation in the labour market.

In order to illustrate the profound relationship between labour law and technology with regards to the most recent developments within both systems, the authors of this publication turned to the illuminated mind of Gaetano Vardaro who confronted the issue in his essay from 1986 called *Tecnica, tecnologia e ideologia della tecnica nel diritto del lavoro*. According to Vardaro, new technologies gradually tend to undermine both the structure and the image of labour law. The ancient and proven dichotomy between professionalised work (typically self-employed and entrepreneurial work) and technologically dependent (subordinate) work seems to be becoming obsolete and forces labour law to rethink its founding categories. If this thesis was true more than thirty years ago in the wake of the computer era, it certainly seems worth exploring today, when deployment of AI and algorithmic management in the workplaces in and out of gig economy is overturning old assets.

Present publication offers a rather macroscopic standpoint with systematic focused attention on topics of particular interests, in a believe that, in order to fully grasp the gist of ongoing technological revolution within the society and, above all, of the changing legal relations that regulate it, one must consider the broader context in which it is set. For this reason we analyze the topic from the historical, sociological and philosophical perspective in addition to the legal standpoint. The fundamental question underlying the whole research concerns the reciprocal influence of technology and labour and the

possibility for labour law to stir it in direction of preserving the workers' liberty and dignity.

The sweeping technological impact on labour law institutes has penetrated deep in their ontological structure and well surpassed the limits of juridical categories. Moreover, the pedantic subtlety of those who like to split a hair in three parts is imprudent in law, that is, contrary to the very character of this discipline since the exactness and precision in delineating an institute require that what must be examined as a whole, in order for the true aspect to emerge, is not be shattered into minute pieces, which can then no longer be reassembled together. In order to achieve such comprehensive overview, one of the initial chapters explores and tests the solidity of labour law's functions when put under pressure of technology, illustrating the two typical functions – protective, organizational and then hypothetical intermediary function that expresses its permeability with social and economic dimension. We argue that, throughout the history, labour law has developed a couple of negative attitudes towards the technology – on the one hand the traditional workers' fear of being replaced by machines, and on the other hand, more recent worry about dehumanization tendencies in the workplace. Indeed, it is rather tempting for labour lawyers to fall into a trap of justifying the sense of labour law by exploring the convenient features of its past evolution. However, as every history book for pupils reads on its first pages: *historia magistra vitae*; only the fools do not try to understand the present and prepare for the future by studying about the past. Therefore, in order to understand the threat of technological unemployment one must study its recurrent alleged plausibility during past technological revolutions; also, dehumanization brought by algorithmic management is not entirely new phenomenon either, since the attempts to quantify workers appeared quite early in the beginning of the twentieth century with Taylorism and Stakhanovism. However, as for the former, plausibility of automation anxiety has proven only partially right; fear that machines will replace men in the working process is recurrent in the modern history but so far it has never reached the colossal scale that was predicted. Although AI and algorithms are changing the workplace with unprecedented speed, they will unlikely represent a real threat for occupation. In the meantime, the concerns about the dehumanization of the workplace seem to reveal that the real risk of technology-enhanced workplace lies in detrimental effects it has on the work quality. It is precisely the rising existential alienation with regards to time elasticity of working arrangements as well as technological impact on perceived mean-

ingfulness of work that should preoccupy the policy makers. Deployment of algorithms in a work process not only enables further automation and routinisation of work performance, thus leaving medium-skilled workforce lagging behind its more cost-efficient substitute; algorithms are also successfully taking over the recruitment practices and typical employer's prerogatives of direction, control and discipline.

The monograph then analyses a delicate equilibrium of pre-contractual employment relationship altered by the deployment of algorithms. In the recruitment field is becoming more and more recurrent use of such technologies, linked with inevitable rise of new, unexplored discriminatory practices towards job candidates. Algorithmic bias poses a different set of risks due to its elusive and/or unintended character due to which it makes it hard to detect. Even though the European case-law regarding algorithmic discrimination in access to work is considerably limited, a couple of Italian rulings in the matter is proving that algorithmic decision-making has found its way into all workplace realities, irrespective of its private/public nature or the workers' employment status.

The following paragraphs then deal with the reputation systems that create trust between otherwise unfamiliar subjects and enable the functioning of labour relations in a digital space. Internal and external ranking tools are prominently featured in platform work but they start to integrate already existing evaluation methods also in the conventional employment relationships. Nowadays, the reputational systems represent a vital element of algorithmic management. All the managerial prerogatives are partially delegated to the customers or algorithmic evaluations systems in order to quantify workers and their performance. The majority of these systems, however, fails to comply with minimum labouristic standards due to their non-transparency or high subjectivity.

The monograph continues with the premise of having to cross the threshold of workers' classification in order to focus on other, equally intriguing problems. Attention that is being (justly) dedicated to the workers for the on-demand platforms and crowdworkers seem to have (unjustly) blurred the broader vision of the technological impact on conventional, as well as atypical, working arrangements. Vardaro's assumption that the ideology of technology has slipped into the instrumental notion of subordination appears to get to the bottom of the matter; however, only recently such notion of subordination has acquired 'perverse' traits with a consequent risk of further quantification of work performance as well as of the workers, but also of

deepening of existential alienation. Follows an excursus of the jurisprudential debate and the analysis of proposal for the new European directive on platform work.

Then the attention of the research turns to single managerial prerogatives being overtaken by an algorithmic boss. Particularly noteworthy effect of algorithmic management can be find in a ‘fading’ of hetero-direction from the need to resort to a stringent and continuous power of conformation of the work to the form of a coordination functional to the business organization, in which methods, time and place are decided by the entrepreneur; new technology thus enables the creation of business models suitable for ‘hacking’ (i.e. lawfully avoiding) the protective regulation of labour law. On the other hand, management by algorithms typically augments the pervasiveness of employer’s prerogatives: either to meticulously direct worker’s performance, to monitor his activity or to punish the contractual infringements.

In terms of consequences of excessive surveillance, so far the legal doctrine have focused on possible violations of worker’s privacy. However, worker’s physical freedom can be seriously hampered by excessive technological control, too; that is why we propose a thought experiment comparing employer’s digital leash to a form of imprisonment.

To conclude the trefoil of managerial powers we call for major accountability of algorithmic bosses when executing disciplinary power over workers. Workers in state of permanent visibility face sanction mechanisms from unpredictable and non-transparent algorithms, moreover without a due legal protection against algorithmic justice.

Another issue linked with algorithmic management involves a conundrum of the reputation portability as a prerequisite for the new employability of workers on the platforms. The impossibility to transfer accumulated reputation from one employer to another remains one of the biggest flaws in the functioning of digital labour market, precluding the career growth and healthy competition.

The present study shows a growing need to update the mapping of managerial prerogatives in a modern workplace. The disintermediation that digital imposes with a conferment of power to the machine must be balanced with a stronger intermediation of the human component both as individuals as in its democratic aggregations – this is what European institutions call a human-centric approach.

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