

ADAPT LABOUR STUDIES BOOK-SERIES



Legal Issues in the Digital Economy

The Impact of
Disruptive Technologies
in the Labour Market

Edited by
Valeria Filì and
Federico Costantini

ADAPT
www.adapt.it
UNIVERSITY PRESS

Legal Issues in the Digital Economy:

*The Impact of Disruptive
Technologies in the Labour
Market*

ADAPT LABOUR STUDIES BOOK-SERIES

International School of Higher Education in Labour and Industrial Relations

Series Editors

Tayo Fashoyin, University of Lagos (*Nigeria*)

Michele Tiraboschi, University of Modena and Reggio Emilia (*Italy*)

Issue Editors

Valeria Fili, University of Udine (*Italy*)

Federico Costantini, University of Udine (*Italy*)

English Language Editor

Pietro Manzella, ADAPT (*Italy*)

ADAPT (www.adapt.it) is a non-profit organisation founded in 2000 by Professor Marco Biagi with the aim of promoting studies and research in the field of labour law and industrial relations from an international and comparative perspective. In collaboration with the Centre for International and Comparative Studies on Law, Economics, Environment and Work (DEAL) at the Marco Biagi Department of Economics of the University of Modena and Reggio Emilia (Italy), ADAPT set up the International School of Higher Education in Labour and Industrial Relations.

ADAPT International Scientific Committee

Bertagna Giuseppe (*University of Bergamo, Italy*), **Bulgarelli Aviana** (*ISFOL, Italy*), **Fashoyin Tayo** (*University of Lagos, Nigeria*), **Frommberger Dietmar** (*Universität Magdeburg, Germany*), **Grisolia Julio Armando** (*Universidad Nacional de Tres de Febrero, Argentina*), **Hajdú József** (*University of Szeged, Hungary*), **Kai Chang** (*Renmin University, China*), **Ouchi Shynia** (*University of Kobe, Japan*), **Quinlan Michael** (*University of New South Wales, Australia*), **Raso Delgue Juan** (*Universidad de la Republica, Uruguay*), **Ryan Paul** (*King's College, University of Cambridge, United Kingdom*), **Sánchez Castañeda Alfredo** (*Universidad Nacional Autónoma de México, México*), **Sargeant Malcolm** (*Middlesex University, United Kingdom*), **Tiraboschi Michele** (*University of Modena and Reggio Emilia, Italy*), **Tucker Erick** (*York University, Canada*).

Legal Issues in the Digital Economy:

The Impact of Disruptive Technologies in the Labour Market

Edited by

Valeria Filì and Federico Costantini

**Cambridge
Scholars
Publishing**



Legal Issues in the Digital Economy:
The Impact of Disruptive Technologies in the Labour Market

Edited by Valeria Fili and Federico Costantini

This book first published 2019

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Copyright © 2019 by Valeria Fili, Federico Costantini and contributors

All rights for this book reserved. No part of this book may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright owner.

ISBN (10): 1-5275-3693-9

ISBN (13): 978-1-5275-3693-7

TABLE OF CONTENTS

Introduction	vii
Legal Issues in the Digital Economy: The Impact of Disruptive Technologies in the Labour Market Valeria Fili and Federico Costantini	
Chapter I.....	1
The Digital Use of Human Beings: Labour in the “Information Age” Federico Costantini	
Chapter II.....	23
Working for an Internet Platform: New Challenges for Courts Giuseppe Antonio Recchia	
Chapter III	51
Working with an Internet Platform: Facing ●old and New Risks Stefano Caffio	
Chapter IV	73
Platform Work as a Chance for a more Inclusive Labour Market Claudia Carchio	
Chapter V	105
Platform Workers’ Needs and Social Security Challenges Valeria Fili	
Chapter VI.....	125
Some Reflections on the Utilization of Artificial Intelligence in Liberal Professions Giorgia Anna Parini	
Chapter VII.....	141
Smart Contracts, Legal-tech Professions and Civil Law Issues Giulia Castellani	
Contributors.....	159

INTRODUCTION

LEGAL ISSUES IN THE DIGITAL ECONOMY: THE IMPACT OF DISRUPTIVE TECHNOLOGIES IN THE LABOUR MARKET

VALERIA FILÌ AND FEDERICO COSTANTINI

1. Society and Technology: between “Disruptive Technologies” and “Regulatory Sandboxes”

●ne of the most relevant human features, which differentiates us from other living species, is artefact production. In human history – and even before that – we have witnessed an unceasing sequence of inventions or discoveries. The use of fire, the wheel, writing, gunpowder, steam, and electricity are nice examples in this connection. Each innovation introduces changes to the existing social system which, even when minor, can be significant. ●f course, progress takes place in a given context and can be related to certain effects. ●utcomes can be observed from several perspectives – short, medium and long-term ones – and from different angles – social, cultural and economic ones – but cannot always be foreseen. Some consequences can be hidden, underestimated or overrated; the history of thought provides numerous examples of these misjudgements.

Technology enables one to manipulate natural elements (Bacon, 162●) and also to influence other people. In the last century, an extraordinary increase has been reported in technological advancements having an enormous social impact – from atomic energy to biochemistry – as well as a proliferation of misleading predictions. Assessment is affected by bias – public opinion is particularly prone to it – particularly when the observer is not directly involved in the facts under scrutiny.

Especially with the most recent innovations, lay people lack a true understanding of technology, progressively widening the gap between expectations and reality, real prospects and false promises. If we use devices of which we cannot appreciate the mechanisms, then maybe we should not

be so confident when evaluating their social impact or when speculating on their development. We should admit that we are surrounded by “black boxes”, and acknowledge that we depend on them, both individually and collectively.

According to a widely accepted economic theory developed eighty years ago, technology is inherently “destructive”. Societal reliance on technology and the economic impact of consequential uncertainty have been theorized in one of the most influential books of the twentieth century, *Capitalism, socialism, and democracy* (Schumpeter, 1942), which reframed concepts developed by Nikolai Kondratieff and Karl Marx. The argument is that the whole economy is based on a succession of cycles of “destruction and creation”, which are made possible by technological innovation. Hence, social changes – which are so deep that every cycle creates radically new balances in society – are driven neither by political governments nor by working masses, but by entrepreneurs. Social innovators are those who own the keys of technology, take responsibility for the risks arising from their use and – consequently – profit from them. Schumpeter’s book marked the emergence of a new social actor – the hi-tech businessman – and of a novel economic approach based on “endogenous growth” – which soon spread worldwide and indirectly nurtured an individualistic and philosophical perspective (Rand, 1961). It can be said that, without it, Silicon Valley tycoons would have not been proliferated.

At the end of the millennium, the idea of “disruptive innovation” acquired a specific meaning in marketing studies. The expression was used to denote an innovation model involving technological advancement in products or services suitable to destroy pre-existent markets and create new ones, addressing the most demanding and profitable customers whose needs remained unfulfilled by incumbent competitors (Christensen & Bower, 1996). Unlike “sustained” technologies, which do not require the creation of new business models, “disruptive” ones entail neither an evolution nor a revolution, but a “game changer” (Yu & Hang, 2010). An example of this is the 2007 debut of Apple’s iPhone, which was disruptive for laptops as primary network access points (Christensen et al., 2015).

Consequently, it should come as no surprise that in economic theory, technology is considered to be both a mean for cyclic “destruction” and a tool for market “disruption”. Critics can oppose this argument claiming that, from a practical perspective, changes are a natural component of our society and thus, ultimately, a certain balance has always been restored and ever will. A counter-argument to this theory is represented by the recent diffusion of “regulatory sandboxes”, especially in financial markets (Ringe & Ruof, 2018). In different countries, legislators are creating special legal frameworks

in order to test new technologies and financial tools, where requirements are reduced, protocols are softened, and fines are suspended (Zetsche et al., 2017). Experimenting on the social impact of these innovations has a twofold purpose. On the one hand, people involved in sandboxes are, harshly said, voluntary guinea pigs; on the other hand, these regulations allow one to minimise possible drawbacks, thus reducing uncertainty.

In conclusion, the relationship between us, as humans, and our artefacts, is still undefined. Technology is driving social transformation, while society has also become “proactive,” being more open to embracing innovation but also more vulnerable to its undesirable consequences.

2. Disruptive Technologies, the Labour Market and Decent Working Conditions

The Fourth Industrial Revolution, smart factories, robotics and Artificial Intelligence, the Internet of Things, mobile devices and their applications – in one word, the “disruptive innovation” referred to before – have been creating new employment opportunities, concurrently dismantling various traditional jobs, deeply altering societies and reshaping human relationships.

It has already been written about the breakup of the bonds between productivity and employment (Rifkin, 2014) led by the second machine age (Brynjolfsson et al., 2014). It caused a short-circuiting of capitalism in which now there are more goods than buyers (Valenduc et al., 2019). This perspective could be regarded as both pessimistic and realistic. At any rate, it should be taken into consideration seriously, because it allows scholars to interpret and monitor the new phenomena and suggests adopting the required actions and solutions that should be undertaken by governments and institutions.

In Western societies, the latest, fast-and-furious processes challenge the legal frameworks of EU Member States, especially the ones that are based on labor and social security law models shaped in the Second Industrial Revolution. Traditional legal categories and instruments begin to waver under the bullets of the disruptive changes, as – it is a matter of fact – “changes generate changes” (Landes, 1969).

On these grounds, legal scholars are facing these phenomena to understand where we are and where we are going, focusing on old and new legal categories to mastermind new labor market policies. Disruptive technologies are challenging both workers and enterprises, altering social protection systems, traditional employment relationships and the balance between rights and duties, which has been achieved painstakingly. The decrease in the needed workforce and the increase in new jobs linked to

non-standard and independent forms of work require serious reflections about the future of work, social security models and social rights in general (Meda, 2016). Both the simplest and most mundane skills and the most complex and intellectual ones could be replaced by the new machines (Frey et al., 2013).

The extreme flexibility and uncertainty in which a great number of digital workers live, are well represented by the expression «tap workers», commonly used to refer to the typical workers of the gig/on-demand economy based on digital platforms (known as “the platform economy”) (Barberis et al., 2017). Furthermore, new forms of discrimination and inequalities must be faced, as an unavoidable side effect of the second machine age (Brynjolfsson et al., 2014; Valencuc et al., 2016).

All these changes put a strain on the old legal frameworks and compel one to rethink legal instruments, measures, and categories to interpret and govern the above-mentioned phenomena. However, their global dimension imposes a supra-national approach, because single national systems are unavoidably powerless when facing the effects of the Fourth Industrial Revolution and the global nature of the platform/collaborative economy.

Digitalization of work is blurring the boundaries between dependent work and self-employment, while new needs are surfacing for the workers of the “middle ground”. Workers’ rights, which were hard-won during the 20th century in Europe, are jeopardized by this unstoppable social and economic process, and coordinated actions by EU institutions and Member States are more important than ever.

EU efforts to define some guidelines for the future of workers and enterprises in the digital era are welcome, but not yet sufficient, as will be demonstrated in the following chapters.

The European Pillar of Social Rights [COM(2017) 251] – jointly proclaimed in November 2017 by the European Parliament, Council, and Commission and commonly regarded as the last chance for social Europe – certainly marks a pivotal step forward in achieving the ‘AAA social rating’ for the EU. It lays down principles and rights to support fair, well-functioning and inclusive labor markets and welfare systems.

European institutions have been taking concrete initiatives to put the European Pillar of Social Rights into practice, including among others the Directive «on work-life balance for parents and carers, repealing Council Directive 2010/18/EU» (procedure 2017/0085/COD), and the Recommendation «on access to social protection for workers and self-employed» (procedure 2018/0059/NLE).

In order to take account of the new forms of employment, on 16 April 2019 the European Parliament adopted a directive «on transparent and

predictable working conditions in the European Union» repealing Directive 91/533/EEC [P8_TA(2019)0379].

The purpose of this document is precisely that of improving working conditions by promoting more secure and predictable employment while ensuring labour market adaptability pursuant to Principles No. 5 (on «Secure and adaptable employment») and No. 7 (on «information about employment conditions and protections in case of dismissals») of the European Pillar of Social Rights.

It is interesting to focus on the “whereas-texts” n. 4 and 7 in which it is stated that «(4) Since the adoption of Council Directive 91/533/EEC, labor markets have undergone far-reaching changes due to demographic developments and digitalization leading to the creation of new forms of employment, which have enhanced innovation, job creation, and labor market growth. Some new forms of employment vary significantly from traditional employment relationships with regard to predictability, creating uncertainty with regard to the applicable rights and the social protection of the workers concerned. In this evolving world of work, there is, therefore, an increased need for workers to be fully informed about their essential working conditions, which should occur in a timely manner and in written form to which workers have easy access. In order adequately to frame the development of new forms of employment, workers in the Union should also be provided with a number of new minimum rights aiming to promote security and predictability in employment relationships while achieving upward convergence across the Member States and preserving labor market adaptability. [...] (7) The Commission has undertaken a two-phase consultation with the social partners, in accordance with Article 154 of the Treaty on the Functioning of the European Union, on the improvement of the scope and effectiveness of Directive 91/533/EEC and the broadening of its objectives in order to establish new rights for workers. This did not result in an agreement among the social partners to enter into negotiations on those matters. However, as confirmed by the outcome of the open public consultations that sought the views of various stakeholders and citizens, it is important to take action at Union level in this area by modernizing and adapting the current legal framework to new developments».

These statements mean that the European Parliament is fully conscious of the inherent limits of the aforementioned directive, but also confident about future initiatives.

As regards the limits, it must be added that the directive does not deal with social protection (i.e. it does not enforce Principle No. 12), and its scope is confined to dependent work, not taking into account self-employment. In this respect, opting for a traditional approach has led

institutions to miss the opportunity to establish a minimum set of common rules for all workers, regardless of their employment relationship, thus excluding many platform workers who are mainly self-employed. Moreover, Member States may decide not to apply the obligations laid down in the directive to several categories of workers, restricting its scope even further (Article No. 1).

This initiative must be regarded as a significant one. The workers' right to be informed of the essential aspects of the employment relationship is fully granted. Information must be very detailed and provided within specific timing (Chapter II). Besides, the big news concerns the setting of minimum requirements relating to working conditions (Chapter III), i.e., the maximum duration of any probationary period, parallel employment, minimum predictability of work, complementary measures for on-demand contracts, a transition to another form of employment, and mandatory training. In this sense, the directive provides that «Member States may allow the social partners to maintain, negotiate, conclude and enforce collective agreements, in conformity with the national law or practice, which, while respecting the overall protection of workers, establish arrangements concerning the working conditions of workers which differ from those above mentioned» (Article No. 14). In other words, Member States can derogate the aforementioned provisions only through trade unions and collective agreements, which are regarded as guarantors of workers' rights.

Yet little consideration has been given to the galaxy of self-employed workers, so the impact of this directive on platform workers will be less decisive than it was supposed to be.

Finally, another remark can be made in relation to vocational education and training. The directive «on transparent and predictable working conditions in the European Union» does little in this respect. Article 13 prescribes that «Member States shall ensure that where an employer is required by Union or national law or by collective agreements to provide training to a worker to carry out the work for which he or she is employed, such training shall be provided to the worker free of cost, shall count as working time and, where possible, shall take place during working hours». The point is that workers' right to receive vocational education and training is not established in advance, not even for the most vulnerable categories.

During the last decades, in a worker's survival kit – made up of social rights and protection against the lack of employment – the role of vocational education and training has become not only relevant but really crucial. Firstly, initiatives against the digital divide should be taken to give the elderly the chance to find another job and the young that of accessing the labor market with the skills required to compete and survive (Negreiro,

2015). Secondly, life-long learning policies are essential to promote long-term employability, especially in the digital labor market (see Council Recommendation 22 May 2018 on key competencies for lifelong learning, 2018/C 189/01). Both public and private education systems, especially those cooperating with trade unions, should play an essential role in the implementation of active labor market policies. Supporting the role of vocational education and training in industrial relations, trade unions could bridge the increasing gap within the working class (Vandaele, 2018). The above-mentioned directive does not take a further step in that direction, but it certainly bolsters the achieved results, also helping collective bargaining in this area.

In conclusion, the challenges posed by new technologies need to be addressed seriously and in depth from a theoretical and practical point of view. EU institutions and Member States, trade unions, scholars, citizens and enterprises, hold an important role, especially considering that this is an ongoing issue.

3. Chapters Overview

The book offers a multidisciplinary and critical analysis of both theoretical and practical legal issues concerning the emerging disruptive technologies and their impact on the European labor market and workers' life. The papers cover different disciplines – legal informatics, labor law, social security law, civil law, and tort law – in order to offer scholars and legal specialists a full picture of the changes, challenges, and opportunities, from a European Union Law perspective.

The utility of the book is strictly connected to its originality: it could be useful for those who need to understand the new phenomena from a multidisciplinary point of view, combining a theoretical with a practical approach.

In the first chapter, «The Digital Use of Human Beings: from Cybernetics to Collaborative Economy», Costantini draws an overview of ethical issues regarding labour conditions in digital environments. She addresses concerns arising from information control, considering three perspectives: cooperation among human beings (new forms of work organization, e.g. the implementation of “Agile” software); the interaction between humans and machines (“decentralized” business models and the “collaborative economy”); the exchange among machines (workers who are replaced by Artificial Intelligence).

In the second chapter, «Working for an Internet Platform: New Challenges for Courts», Recchia points out that the digital era has been

changing employment relationships dramatically, causing a considerable degree of legal uncertainty as to which rules apply in the platform economy. A certain degree of inadequacy is manifesting in the same founding categories of labor law, i.e., the bipartite - and in some legal contexts, tripartite - employment/self-employment taxonomy. For the courts, it is a matter famously described by the metaphor of being faced with “a square peg and asked to choose between two round holes”. The author analyzes available case law in a comparative perspective, considering similarities and obstacles related to the more general need to respond to gig economy workers’ protection. Ultimately, the Uber, Foodora, and Deliveroo cases will help one to question whether the concept of legal subordination and its main elements can govern new forms of employment in the context of the gig economy.

In the third chapter, «Working with an Internet Platform: Facing Old and New Risks», Caffio highlights that the ever-increasing development of platform work is producing new issues and new challenges for existing European and national legal frameworks. Starting from a reconnaissance of the risks related to Occupational Safety and Health (OSH) issues, control powers, the processing of personal data, the occupational illnesses and injuries faced by platform workers, the author analyses the suitability of current legislation to give effective responses in terms of prevention and remedies. The aim is to point out the shortcomings in European and national regulatory contexts as regards the protection of these ways of working, in order to encourage lawmakers’ action.

In the fourth chapter, «Platform Work as a Chance for a More Inclusive Labour Market,» Carchio shows how technological advances will both create new jobs and heavy losses. Therefore, although there are important and noticeable benefits for a range of workers, there are also many risks and costs that affect the livelihoods of digital workers. For this reason, it is crucial to address emerging forms of on-demand work, promoting labor market inclusiveness and high-quality jobs, in their multiple dimensions of earnings quality, labor market security and quality of working environments, especially for the weakest groups of workers. The author focuses on how platform jobs could be quality jobs for some categories of workers that are particularly vulnerable in the labour market – e.g. working mothers and caregivers, people with disabilities and aged workers – ensuring them wide participation in innovation activities. Considering that low employment rates are often linked to social exclusion, insufficient levels of well-being, poor working conditions and scarce career prospects, it is interesting to explore how new jobs could affect labor market inequalities, reducing the persistent difficulties when accessing the job market.

In the fifth chapter, «Platform Workers' Needs and Social Security Challenges», Fili focuses on the fact that new forms of employment need novel social security protection. On the one hand, a significant share of digital workers operating as independent contractors or self-employed workers make up a variegated group; on the other hand, there is a growing number of working people who, due to their employment relationship or self-employment status, are left without sufficient access to social protection. The author underlines that there are EU institutions and Member States initiatives to support self-employed and non-standard workers who are not sufficiently protected by traditional social protection systems – especially in relation to motherhood, healthcare, unemployment, pensions, poverty, and social exclusion – therefore meeting the increasing demand for protection. It is stressed that ensuring decent work for non-standard and self-employed workers depends on the decent level of social security coverage granted to them.

In the sixth chapter, «Some Reflections on the Utilization of Artificial Intelligence in Liberal Professions», Parini highlights that, given the various challenges related to technological innovation and the increasing utilization of Artificial Intelligence (AI), lawyers will be confronted with several problems when evaluating the ability of the legal system to offer new remedies. This quickly and constantly evolving scenario impacts on different branches of the law. Machine learning has a deeply significant and disruptive impact on regulation. The ability of Artificial Intelligence to evolve and learn from past experience – and to adopt autonomous decisions, sometimes in an unpredictable way – raises issues which need to be solved to ensure legal certainty, even in terms of liability. Moreover, the widespread use of AI systems not only supporting professionals in repetitive tasks but even replacing them altogether, requires some consideration, especially in relation to the performance of tasks which have traditionally been reserved to “protected professions”, with further problems related to contractual negotiation and liability.

In the seventh chapter, «Smart Contracts, Legal-tech Professions, and Civil Law Issues», Castellani shows how innovation and technology have entered the legal field, affecting the law of contract. AI represents a challenge for society as well as for the law. Smart contracts are used in this context and in those employing blockchain technology, on which the now-famous Bitcoin software is also based. This decentralized architecture, with intent to simplifying processes and reducing costs, certainly contributes to making smart contracts a particularly attractive instrument also in legal tech. The rapid diffusion of this technology has raised questions on the EU level related to the need for uniform legislation, which guarantees a consistent

approach to the various problems resulting from the application of these instruments. One example of this is how the decentralization provided by these new instruments can produce the risk of overcoming the limits of lawfulness and worthwhileness, concurrently raising doubts and problems of governability and monitoring.

References

- Bacon, F. (1620) *Novum organum*. London: Apud Joannem Billium.
- Barberis P., Chiriatti L. (2017), *Sharing economy – un’occasione da condividere*, *Volta Paper* 05, voltaitalia.org/
- Brynjolfsson E., McAfee A. (2014), *The second Machine Age*, US.
- Christensen, C. M. & Bower, J. L. (1996) *Disruptive technologies: Catching the wave*. *The Journal of Product Innovation Management*, 1(13), 75-76.
- Christensen, C. M., Raynor, M. E. & McDonald, R. (2015) *What is disruptive innovation?* *Harvard Business Review*, 93(12), 44-53.
- Frey C.B., Osborne M.A. (2013), *The future of employment: how susceptible are jobs to computerization?*, Oxford Martin School, Oxford UK, Appendix, in oxfordmartin.ox.ac.uk
- Landes D. S. (1969), *The unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present*, Cambridge University Press, UK.
- Meda D. (2016), *The future of work: the meaning and value of work in Europe*, IL – Research Paper No. 18, Genève (CH).
- Negreiro Mar (2015), *Bridging the digital divide in the EU*, PE 573.884, EPRS – European Parliamentary Research Services, European Parliament, 2015.
- Rand, A. (1961) *The virtue of selfishness. A new concept of egoism*. New York: New American Library.
- Rifkin J. (2014), *The Zero Marginal Cost Society: The Internet of Things, The Collaborative Commons, and the Eclipse of Capitalism*, Palgrave Macmillan, US.
- Ringe, W.-G. & Ruof, C. (2018) *Regulatory Sandbox for Robo Advice*, 26.
- Schumpeter, J. A. (1942) *Capitalism, socialism, and democracy*. New York: Harper & Bros.
- Valenduc G., Vendramin P. (2016), *Work in the digital economy: sorting the old from the new*, in *Working paper 2016.03 - European Trade Union Institute*, in etui.org
- Valenduc G., Vendramin P. (2019), *The mirage of the end of work*, Foresight brief, #06 March 2019, ETUI, Brussels

- Vandaele K. (2018), Will trade unions survive in the platform economy? Emerging patterns of platform workers' collective voice and representation in Europe, Working paper 2018.05, ETUI, Brussels.
- Yu, D. & Hang, C. C. (2010) A Reflective Review of Disruptive Innovation Theory. *International Journal of Management Reviews*, 12(4), 435-452.
- Zetzsche, D. A., Buckley, R. P., Barberis, J. N. & Arner, D. W. (2017) Regulating a revolution: from regulatory sandboxes to smart regulation. *Fordham Journal of Corporate & Financial Law*, XXIII, 31-103.

CHAPTER I

THE DIGITAL USE OF HUMAN BEINGS: LABOUR IN THE “INFORMATION AGE”

FEDERICO COSTANTINI

1. Introduction

1.1. An Overview: the “Human” Use of Human Beings

The meaning of our everyday efforts has been an open question for humankind since its origins. Labour is epitomised in many mythological figures – from Hephaestus to the Demiurge – and in the Bible – the image of Adam’s forehead sweat – as the symbol of the human condition. Such denotation is twofold, as everyone knows from her/his professional experience, since it celebrates the human ability to grasp the understanding of natural elements and to craft malleable matter, but also the fact that the onuses sometimes are heavier to carry than gratifications.

Work is a complex endeavour also because is a structured social activity, organised by customs, laws and institutions. In this regard, Samuel Pufendorf, who is widely credited as the first legal philosopher of the contemporary age, connoted the human condition as *imbecillitas* (Pufendorf, 1759) due to our innate physical and moral weakness demanding us to reach out to other people (Todescan, 2001). This expression enlightens with extraordinary precision the primary source of social conflict. Indeed, as learned from the early reflections of Western culture (Aristotle [1253b]), we are “political animals”, since an individual is naturally bound to her/his community. Yet struggles arise when we are in need of others’ assistance or are required to contribute to other people’s businesses: some are likely to intervene as driven by altruism; others act only by interest; still others are more willing to acknowledge the assistance received, while opportunists simply forget very easily who offered them help. In Pufendorf’s view, a sad universal truth is expressed, still valid in current times.

Moreover, the remuneration of our work hangs on a very difficult balance between our dignity, the untouchable value we hold as human beings, and the price of our time and efforts. As maintained by Immanuel Kant, there is a moral limit under which work should be forbidden, a kind of sacred threshold which nobody should demand us to infringe: an individual should not be regarded as “a mere instrument”, but as “a purpose in itself”. In this sense, the expression “*Zweck an sich selbst*” (Kant, 1911 p. 429) means that we can “use” other people, allowing them to work for us, without “abusing” them, e.g. humiliating and subjugating one to our mere willpower. However, according to Georg Hegel, and in considering the famous dynamic opposition between the master and the servant – “*Herrschaft und Knechtschaft*” – we can argue that every servant can overwhelm and subjugate her/his own master, if only she/he learned the secrets of the job she/he is meant to carry out. Opposing Kant’s perspective, the fact that the servant overcomes her/his limit is precisely what is required to reach better status. In Hegel’s perspective, we can claim that the real goal of a job is not completing the task assigned, nor being paid for it, but becoming something else, changing our nature (Hegel, 1968). Everyone can appreciate that both perspectives are challenged by the real world. The distinction between “use” and “abuse” brought by Kant is quite vague in many cases, while the fact that a servant could become a master, as stated by Hegel, almost always remains a wishful dream.

It is a fact that workplaces have changed radically in last two centuries, due to technological improvements – steam power, coal, oil, electric energy, telephones, ICT – and, in general, through a more rational approach to production processes. If modern thought was rooted on the faith that knowledge and rationality can bring power to rule over nature, in the attempt to imitate God’s act of creation (Ellul, 1954), in the contemporary approach technology has become the topic of a specific field of investigation for many scholars (Kapp, 1877), though its meaning has been disputed. It is worth mentioning the famous debate held in Davos in March 1929 between Ernst Cassirer and Martin Heidegger (Gordon, 2012). While the first provided an optimistic portrayal of human potential – as would be expected from a post-Kantian philosopher – the second, at the time a young and irreverent promising scholar, opposed a nihilistic perspective in which technology was alleged to be the example of the inconsistency of the Being. According to the chronicles, Heidegger emerged from the discussion as the representative of a new philosophical wave, commonly known as “existentialism”, which spread worldwide and still influences our vision of the world. Paradoxically, while engineers

were inventing most of the devices still used nowadays – e.g. the television – philosophers were upholding the futility of human efforts to apprehend reality.

Recently, the social impact of technology has been under specific scrutiny. On that note, the remarks by Michael Foucault on the social and cultural repercussions brought by modernization (Foucault, 1975) are particularly evocative. According to him, in the contemporary age, we can observe the same pattern in human behaviour within different contexts, such as prisons, companies, schools and army barracks: in each of them, we find restricted spaces, uniform clothing, strict discipline, structured hierarchy, severe punishments, timely-cadenced activities. Under the view of Foucault – which was bound to a materialistic philosophical perspective – the condition of alienation suffered by individuals is the direct and unavoidable consequence of the emerging bourgeois class. Technology is envisioned as the sharpened tool used by capitalism to mould the whole society according to the needs of the production system and, as the practical expression of modern rationalism, is claimed to be the *causa causarum* of the frustration of single individuals and the oppression of the working class. We may observe that, of course, social processes and historical developments are far more complicated, but, as we know from the history of political movements, a simple equation is a good story to tell and an easy explanation to believe in. Without technology, there would be no industry; without industry, no proletarians; and without proletarians, one could finally achieve social justice.

Against the demonization of technology stood one of the most brilliant minds of the twentieth century, Norbert Wiener, a pioneer in several fields of scientific research. Together with other scholars, he founded a discipline called “cybernetics” (Wiener, 1948), aimed at shaping a unified theory of interaction among humans, animals and machines. According to this perspective, technology is not just a human invention, but the basic structure of a sophisticated ecosystem in which every slice of reality – be it psychological, social, organic, mechanical, physical – is translated into forms of control and communication. Since each empirical phenomenon, whether natural or artificial, can be represented in the flow of “information”, everything is, in a way, technological. In a nutshell, technology can be found in nature so that everyone can benefit from it, regardless of her/his social status, or of her/his human – or even animal – condition.

In his most famous book, *The Human Use of Human Beings*, Wiener claimed that cybernetics could have allowed a “human” use of technology towards other people (Wiener, 1954), respectful of their dignity and so, we

could add, compliant with Kant's moral imperative. In this sense, technology should have been regarded not as a dumb instrument in the hands of a caste of wealthy oligarchs, but as the tangible opportunity to expand further the connection among the components of the social system and to tighten its lattice, reducing political and social conflict. According to Wiener, such approach should have enabled one to reduce the economic imbalances generated by the early industrial mass-production system, bringing about the emergence of a "flattened", "decentralized" – and thus peaceful – interaction between employers and employees.

1.2 Ethical and Legal Issues in the "Digital" Use of Human Beings

Currently, things are even more uncertain than they were for Wiener, since additional concerns have emerged besides those that were already known at his time. Indeed, in the last decades, automation and ICT have spread worldwide at a very fast pace. Hence technological advancements have created new professional profiles and great career opportunities, but also a considerable number of job losses and displacements. Moreover, information is concentrating in the hands of few people, who have now the power not only to interfere with social processes at an aggregate level, but also to intrude into individual behaviour and personal choices. Surveillance systems are being deployed in public and private spaces, collecting an enormous amount of personal and non-personal data, which are handled by sophisticated artificial agents in order to provide feedback suitable to bring a proactively accurate analysis of business processes and to profile entire populations. These innovations, coupled with those promised by the biotech industry – genetic human empowerment, above all – allow one to question if humankind, in the future, would be different from the way we know it: few individuals could flourish as technological demigods as all the rest might plunge into the abyss of a short, poor and nescient life. While some authors look forward to witnessing the advent of "singularity" (Kurzweil, 2005), others seem to be cautious, underlining its threats (Harari, 2018).

This contribution is focused on the ethical-legal issues raised by the impact of ICT on workers' conditions. Its aim is to address these questions from a theoretical perspective, hence the choice of the title, which recalls Wiener's book. The adjective "human" is substituted by "digital" as consideration is given to the approach known as the "Philosophy of Information" proposed by Luciano Floridi and other scholars in the last twenty years (Durante, 2017; Floridi, 2013b). According to this view, the

impact of technology in our existence is not just an everyday practical matter, but a theoretical challenge. As claimed in the *Onlife Manifesto*, a publication which envisions this perspective with great clarity, “ICTs are not mere tools but rather environmental forces that are increasingly affecting: 1. our self-conception (who we are); 2. our mutual interactions (how we socialise); 3. our conception of reality (our metaphysics); and 4. our interactions with reality (our agency)” (Floridi, 2015b p. 2). These few statements deserve a few clarifications before proceeding further.

● On the first aspect, it is worth emphasizing that ICTs have produced an anthropological transformation since humans have become “Inforgs”, namely “informational organisms living and interacting with other informational agents in the infosphere” (Floridi, 2015a p. 54).

● On the second point, human communities have become part of a wider and complex structure in which relations are symbolised in terms of multi-agent systems, regardless of the fact that an agent is natural or artificial, human or not.

As for the third element, our world has become an “infosphere”, a hybrid between the spiritual and the secular world, tangible matter and impalpable data (Floridi, 2014).

● On the last aspect, it is claimed that there is a need for a radically new ethical framework, since the individual has become *homo poieticus*, namely “a demiurge, who takes care of reality, today conceptualized as the infosphere, to protect it and make it flourish” (Floridi, 2013a p. 175).

It is important to underline that this contribution intends to address the problem of “human use” from the “digital” perspective, yet without fully embracing it. The interesting fact – and the reason for its choice in this contribution – is that the “Philosophy of Information” can be seen as an evolution of “cybernetics”, not only because it includes technology as a key element of our social ecosystem, but also because it investigates the opportunity to establish new criteria and moral values as tools for a new form of metaphysics.

1.3. Research Outline

This contribution proposes a threefold taxonomy under the tenet that labour does not involve only humans anymore. Indeed, “working” is not necessarily a human duty, since machines are not merely cooperating with us, but are also undertaking progressively more assignments without human supervision. Provided that, and depending on the degree of technological involvement, we can find: (1) traditional connections between humans, (2) more sophisticated interactions between humans and

machines and (3) exchanges of information between fully autonomous machines. This tripartite classification finds its rationale in the distinction brought by the “Philosophy of Information”, in which information can be appreciated under three ontological modalities: (1) “information *as* reality” (*technological information*), for example, the electric signal transmitted and received regardless of content, (2) “information *about* reality” (*natural information*), such as data regarding natural phenomena, and (3) “information *for* reality” (*cultural information*) such as algorithms and procedures (Borgmann, 1999; Floridi, 2004). It is interesting to recall that the distinction of three levels of “complexity” was pivotal not only for the foundation of the theory of communication – for which information is “*technical*”, “*semantic*” or “*influential*” (Weaver, 1949) – but also for the speculation on information control – the three layers of which are “*physical*”, “*logical*” and “*content*” (Benkler, 2000) – during the rise of cyberlaw (Lessig, 2002).

Mentioning Wiener’s work again, the “digital” use of human beings has not only many benefits and drawbacks, but also an intrinsic complexity. This contribution aims to provide a comprehensive overview of labour issues in a digital environment embracing every level of such complexity. In order to do so, it is divided into three sections, which correspond to the three models explained above.

In the first part, technology is considered to be an ecosystem of the interactions among human workers. Here, I will investigate how “virtualization” of labour resources influences tools, methods and procedures.

In the second part, technology ultimately defines in what way valuable resources – workload and retribution, above all – are distributed among workers: this issue is particularly relevant in the “collaborative” or “sharing” economy, where the pattern of interactions seems really “flattened” or “decentralized”.

In the third part, technology is embodied in artificial agents, which can properly substitute human labour: I will analyse ethical and legal concerns related to the social impact of artificial intelligence, according to the most recent perspectives emerged in the European Union.

For each section, I will comment on the recent Proposal for a Directive COM(2017) 797 *on transparent and predictable working conditions in the European Union*, adopted by the European Parliament on 16 April 2019. To conclude, I will draw some final comments.

2. Human-human Interaction and the “Virtualization” of Labour Resources

2.1. Introduction: Industrial Production, Information Control and Labour

Control of information is essential in industrial production, yet this necessity is fulfilled in different ways and has evolved along with technological innovation. It can be useful to underline two crucial traits in the organisation of traditional industry: a unidirectional linear production and a highly centralized hierarchy. In this model, the fast-growing needs of the mass market is fulfilled by delivering goods or services through extremely standardized processes, which require accurate management of resources and continuous supervision. It is important that, also due to technological constraints, this surveillance is not incorporated into the workflow, but performed with external branches of the organisation and different professional profiles, hence the hierarchy remarked by Foucault. On the contrary, more recent “on demand” business models are intended to adapt rapidly to market transformations. To do so, productive resources are “virtualized”, in that they are always available for supply, but utilised if and when required. In this configuration, the workflow needs to be “iterative” and organization has to be “flattened” and “decentralized”. Indeed, production is divided into cycles which include phases of monitoring and loops of adjustment. The key point, here, is that control is an essential part of the workflow, often being undertaken directly by the workforce (Wysocki, 2014). This latter approach is adopted, as one might recall, in “lean” production – also known as the “Toyota Production System” – which was developed in Japan after the Second World War.

In this section, we focus on “lean” production not only because it seems to be currently deployed in many “as-a-service” business models (Sharma, 2015), but also due to the fact that it is “flexible”. This method is well expressed by the PDCA acronym (Plan, Do, Check, Act), originally coined by W. Edwards Demming, an officer of the US army, who was inspired by studies on cybernetics.

2.2. Labour Forces from “Flexibility” to “Agility”: The Case of the “Agile Manifesto”

The “lean” process of production started to attract academic interest in the span of a few years. More than thirty years ago, two scholars in a famous contribution noted that it presents interesting features. The most

important one was that the success of the method mostly depended on the joint effort of workers. In the authors' view, the behavioral pattern of workgroup members resembled a "scrum" in a rugby match: "Under the rugby approach, the product development process emerges from the constant interaction of a hand-picked, multidisciplinary team whose members work together from start to finish. Rather than moving in defined, highly structured stages, the process is born out of the team members' interplay" (Takeuchi & Nonaka, 1986 p. 138). In other words, teams were able, under given conditions, to improve productivity spontaneously, as a self-regulating organization, bringing extraordinary "flexibility" to the whole process. We can observe that in a "flexible" workflow, feedback is not only a part of it, but also the joint effort of every worker involved. Control becomes a personal commitment and a value shared by the team.

Recently, there has been a further evolution which has spread worldwide from the field of software development to other economic sectors. In 2001, a group of software engineers issued a document called the "Agile Manifesto" in which their theses were condensed in few words: "Individuals and interactions over processes and tools; working software over comprehensive documentation; customer collaboration over contract negotiation; responding to change over following a plan" (Beck et al, 2001). This seminal declaration sparkled rapidly, morphing into a kind of pragmatic philosophy, whose potentials have been exploited with remarkable results (Sutherland, 2014). Many companies and institutions have implemented this method, not only increasing their productivity, but also developing strategies to take advantage of "uncertainty" (Taleb, 2012).

It may be remarked that "agility" is different from "flexibility". While the latter still relies on the prevalence of the process and regards changes as mere fine-tuning corrections – structure over function, in a nutshell – the former is a proclamation of the primacy of transformation over routine – function over structure – in the attempt to convey individual problem-solving skills to the benefit of the entire team and so, indirectly, increasing overall productivity.

The fact that a working methodology, invented in the context of the digital economy, could be adopted in different fields, should not be surprising. Today ICTs not only are deeply embedded in most workplaces – we may think of telecommuting – but often an entire working environment is shared on online platforms: workflows are monitored remotely, and individual tasks are assigned through digital interfaces.

2.3. Conclusion: “Agility” and Creativity

Digital technologies – or, to be more precise, the mind-set shaped around them – have an impact on the interaction among workers. The cybernetic concept of control has going through three different stages. At first, in the traditional model, it was seen as an external surveillance system of individual behaviour; then, in the “flexible” pattern, as an internal commitment – “a moral one”, I could say – to openness and transparency towards the teammates; eventually, in the “agile” approach, as the *ars inveniendi* of new ways to bring order to chaos. We can argue that this shift is made possible by a major assumption: labour in itself has become a kind of information, namely, a way to organize the world according to a given purpose. That is the reason why, in the digital era, labour can be ideally separated from individuals: the workload is not necessarily a human matter, and its purpose may not be self-determined by the worker.

It is noteworthy that the issues raised in this paragraph fall into the scope of the EU Proposal of Directive (2017)797. Article 9 sets limits to the predictability of work, imposing on employers a preliminary notification of reference hours and days and allowing employees to refuse work if the notice requirement is not complied with. These limits do not apply if the employer assigns a task to be achieved. However, in such a case, the worker is free to determine the time schedule.

We could agree that these provisions could protect workers from the malevolent “virtualization” of labour in “flexible” environments. Indeed, they seem to apply easily to permanent staff. Nevertheless, these safeguards appear inadequate to deal with the excessive use of “agile” methodology, particularly when involving freelance workers. “On demand” production models entail a complicated sequence of choices, which can be problematic to contradict, especially when workers are directly involved in decision-making.

3. Human-machine Interaction: Decentralization and the “Platform” economy

3.1. Decentralization, Social Computing and the “Peer-to-peer Economy”

In general, the flow of information in a given system can fall into three models – “centralized”, “decentralized” and “distributed” – depending on information management. In the first, control is allocated to a single

fulcrum; in the second, it is assigned to certain nodes; in the third, information is pooled among all components (Baran, 1962). In the last fifty years, sociologists and psychologists investigating the pattern of social interaction have discovered that connections among human beings can be represented in terms of “decentralized” networks (Milgram, 1967). In this sense, certain nodes in the network can have more links and share more information, just as some of us are more “popular” than others. This model could be regarded as the standard configuration of human social relationships, even though historically prevailing “centralized” social systems (a State or a Church, for example) and “distributed” ones (communitarian settlements, for example) have been occasionally witnessed. The point is that we, as human beings, are designed to inhabit “distributed” ecosystems, where limited control is coupled with shared resources. Here, social authority and group extension find their dynamics and quite a precarious balance, as history has shown.

In the last twenty years, this “decentralized” design has been ousted by the massive deployment of ICTs, which have facilitated the exponential rise of what has been termed the “Networked Information Economy” (Benkler, 2006). A rising part of human communication has been conveyed through digital media, a phenomenon that has been known as “social computing” (Ala-Mutka et al., 2009), while pre-existing economic models have been empowered – such as “collaborative consumption” (Felson & Spaeth, 1978; Oh & Moon, 2016) – and others have been introduced. This broad category of “decentralized” economy has many names – “peer-to-peer”, “collaborative”, “sharing”, “gig”, “platform” economy – in the attempt to grasp the general concept, or to stress one specific aspect (Belk, 2014). The European Union, in Document COM(2016) 356 final, entitled *A European agenda for the collaborative economy*, provided an analytical definition (p. 3) identifying three categories of actors: (1) “service providers”, which can operate as private individuals or professionals, (2) “users” of the services offered through online platforms, (3) “intermediaries”, namely the owners of the platform where transactions are routed. According to this blueprint, “users” access online platforms to contact “service providers”, who operate as their “peers” within the digital ecosystem managed by the “intermediator”. In the “service provider” group, we can find a new type of worker, who has been named “prosumer”, being a synthesis of two traditional categories: the “producer” and the “consumer”.

3.2. “Platform Workers” and “Decentralization”

The social impact of the fast-growing category of this new type of workers, also named “platform workers”, raises several issues, as explained by the European Group on Ethics in Science and New Technologies in Opinion n. 30 entitled *Future of Work, Future of Society*, released in December 2018, and the report published by the JRC (Pesole et al., 2018). One of the reasons of these concerns is that substantial aspects of the working conditions – e.g. the task assigned to the specific worker and their remuneration – are defined automatically by the online platform. “Intermediaries” not only build an economic ecosystem around the transactions among “service providers” and “users”, but also exploit the latter using data collected by profiling individuals, analysing exchanges, and mining external databases. Hence, this structure allows massive and penetrating surveillance on “service providers”, as well as definitive information asymmetry towards “users”. The bitter irony is the lack of transparency in the “collaborative” economy, which can be exponentially more profitable than in traditional markets. Not for workers or consumers, of course, but for those who speculate on their needs and expectations.

We can observe that, in “decentralized” economy models, control of information is embedded in the process of sharing resources. Yet, the allocation of control does not have to be a detriment for the same parties who should benefit from it by feeding their energies into the system. Indeed, there are different kinds of “decentralization”, as recently pointed out by a brilliant article posted on *Medium* by Vitalik Buterin, the inventor of Ethereum, a widely used distributed-ledger system (Buterin, 2017). He observes that “decentralization” can operate on three very different levels: (1) “architectural”, depending on how many computers are involved and how they process information, (2) “political”, depending on how the ownership of the system is distributed (3) “logical”, depending on the configuration of interfaces and data structures. It is remarkable how Buterin applies this theoretical framework to human phenomena, arguing, for example, that common law is logically “centralized” – since it relies on certain social structures, law-making bodies – but architecturally and politically decentralized, because of the courts’ interpretative discretion. According to this framework, the “collaborative economy” could be classified as architecturally and logically decentralized, but politically centralized. As observed in the EU document, platforms are usually owned by “intermediators”, which are third-party entities. Needless to say, that leaves ultimate control out of the hands of “service providers” and “users”. By default, workers are not fully in charge of the data governing their activities.

In his post, Buterin tries to make a distinction between beneficial and harmful coordination. In tackling what is defined as “a social challenge more than anything else”, the author puts forward several remedies, most of which address the “protocol” formulation. Of course, in a “decentralized economy” this question stands differently than in cryptocurrencies, where the “consensus” of the users is of higher importance, yet the conclusion could be rather similar. In the “decentralized” economy, the difference between the “use” and “abuse” of human beings depends on the design of the ecosystem surrounding “service providers” and “users”. The “protocol” becomes vital since joining a platform, more and more often and for many reasons, is not simply a matter of rational choice, as in cryptocurrencies, but of trust (Balkin, 2017; Pagallo, 2017). Those who own the platform, control transactions; as in gambling, the bench always wins.

3.3. Conclusion: Platform Owners and “Political” Decentralization

It can be agreed that in a specific system, control of information can be shaped according to different models – centralized, decentralized, distributed – and “decentralization” can be applied at different layers – physical, political or logical – multiplying the complexity of a system. Control allocation is independent from the distribution of resources, which can be shared among participants regardless of the model adopted.

In the case of the “collaborative” economy, one of the main issues is that “platform workers” do not own the “political” control of the system. In most cases, “intermediators” manipulate the exchanges among “service providers” and “users” in order to increase their benefit proactively. This advantage does not convert necessarily to an immediate and direct revenue, as the EU document seems to suggest, but at least to an advantage in terms of information.

The kind of activities that can be provided through this platform is almost infinite, from the most draining industrial jobs – as in “cyber-physical systems” (Lee, 2015) – to the most exhausting symbolic reasoning and conceptual organisation – as in “human computational systems” (Law & von Ahn, 2011). Yet it stands on clear criteria: humans are appointed to the tasks that by now machines cannot execute. If technological innovation improves the capabilities of artificial systems further, it is likely that humans will be overcome just to increase efficiency in the ecosystem. Perhaps that would be the end of the “collaborative economy”, or better, the achievement of intermediaries’ complete “political” control over the “decentralized” ecosystem.

We may observe that the issues raised in this paragraph are not fully considered in the EU Proposal for Directive (2017)797. Of course, this legislation enhances the safeguards for workers. Provided that transparency is mandatory in an employment relationship, Article 3 updates the requirements set out by the Written Statement Directive, detailing the minimum information that any employer has to deliver to employees. However, among the details included in the list of these requirements – regarding work schedule and remuneration, for example – neither an explicit mention nor an indirect indication is dedicated to employee personal data. This is rather surprising, provided that the safeguard of “platform workers” is one of the aims of the Directive.

It should be observed that employee personal data are strongly protected in the EU. They fall into the scope of the EU General Data Protection Regulation 2016/679 (GDPR) recently entered into force, which – according to Articles 12 and 13 – requires employers (“data controllers”) to inform workers (“data subjects”) about ongoing data processing. Moreover, Article 21 recognises the right to object to data processing on the part of the “data subject”, “including profiling”, if based on “public interest or in the exercise of official authority” (Article 6(1)(e)) or “legitimate interest” (Article 6(1)(f)). Likewise, Article 22(1) recognises “the right not to be subject to a decision based solely on automated processing, including profiling, which produces legal effects concerning him or her or similarly significantly affects him or her”. Finally, Article 88 allows Member States to “provide for more specific rules to ensure the protection of the rights and freedoms in respect of the processing of employees' personal data in the employment context”.

Notwithstanding that the current EU legal framework on data protection is one of the most advanced in the world, some concerns might be stressed in relation to “platform workers”. As remarked in this paragraph, since they lack “political” control on the platform, they are mostly vulnerable to intermediaries' will. For example, data could be collected by profiling workers and customers and exploited for implementing autonomous decision-making processes through which the platform could increase or reduce automatically the remuneration for some tasks in certain cases or, under given conditions, creating sudden and unexpected fluctuations in the market's ecosystem.

We can claim that abusive practices that deeply influence “users” preferences and re-route “service providers” choices without full transparency could be implemented under GDPR provisions, since the prohibition of profiling does not apply if an automatic decision “is necessary for entering into, or performance of, a contract between the data

subject and a data controller” (Article 22(2)(a)). It may be argued that a basic protection for the “data subject” is offered by the fact the WP29 *Guidelines on Automated individual decision-making and Profiling* (adopted on 3 October 2017 and revised on 6 February 2018) requires that the “data controller” has to “tell the data subject that they are engaging in this type of activity; provide meaningful information about the logic involved; and explain the significance and envisaged consequences of the processing”. On the contrary, it may be contended that this safeguard applies only to personal data – not to “non-personal” data, which are likewise exploited in business analysis. Furthermore, these provisions cannot be directly enforced and address specifically labour law issues. On this aspect, it seems that the EU Proposal of Directive (2017)797 does not meet platform workers’ needs or expectations, since it does not provide clear criteria for “political” control and does not draw a clear line between the “use” and the “abuse” of human beings.

4. Machine-machine Interaction: Towards a Jobless Society?

4.1 Introduction: Current Prospects in AI Ethics

Throughout history, many attempts have been made to imitate natural living creatures by crafting artificial mechanisms. In the modern age, the most inspiring vision has become the creation of an artificial mind embodying the power of human rationality. In this sense, the quote from Goethe’s *Faust* is particularly evocative: “and such a brain, which could think well/in the future a thinker will make” (This is the original in German: *und so ein Hirn, das trefflich denken soll, / wird künftig auch ein Denker Machen*) (Goethe, 1831 Act II, vv. 6869-6870). In the last century, what was previously a dream has become a tangible reality, and “artificial intelligence” (simply “AI”, henceforth) – which has been made possible by the pioneers of computer science – has obtained astonishing triumphs. As everyone can see in her/his ordinary life, today we can interact with many sorts of artificial agents, most of which are so sophisticated that can hardly be discerned by humans. Less manifest, though largely deployed – in the financial market, for example – are those systems in which agents interact autonomously, signing deals on account of their owners or supervisors.

Of course, ethical concerns emerge, as warned by Norbert Wiener in the book mentioned at the beginning of this contribution. Debating this issue, different arguments can be put forward: technical aspects –

concerning the comparison between AI and humans in terms of efficiency or efficacy – sociological effects – relating to the social acceptance of robots in different cultural contexts – or economic repercussions, involving the implications in a specific sector (logistics, health, industry, for example) or the market (especially labour). The practical aspects tend to overwhelm the theoretical ones, thus key questions sometimes remain unasked or disregarded, as the proverbial elephant in the room. Consequently, discussants are prone to avoid questions as to “why” and “if” AI should or should not be deployed, focusing on “how” or “when” that could happen. Thus, the risk is that the advent of AI, as a type of transformative and disruptive technology, would be widely accepted as an inevitable implication of the human fate, becoming a self-fulfilling prophecy.

In the last few years, the public debate on AI has reached the institutional level, being tackled in official meetings by governments and parliaments. Among the many political initiatives, it is noteworthy to mention four important documents that were adopted recently in the European Union: the European Parliament Resolution of 16 February 2017 on Civil Law Rules on Robotics, COM(2018)237 of 25 April 2018, *Artificial Intelligence for Europe*, COM(2018)795 of 7 December 2018, *Coordinated Plan on Artificial Intelligence*, and COM(2019)168, of 8 April 2019, *Building Trust in Human-Centric Artificial Intelligence*. Moreover, the EU set up an independent body, the High-Level Expert Group on Artificial Intelligence (AI HLEG), which, after a four-month public consultation, on 8 April 2019 released the document *Ethics Guidelines for Trustworthy Artificial Intelligence*. In the meantime, other initiatives have been put in place by experts and scholars in order to raise public awareness of these problems (Floridi et al., 2018).

The *AI HLEG Ethical guidelines* mentioned above draw a framework of principles and requirements in order to build “Trustworthy AI”. In brief, artificial agents should be designed to be (1) lawful, abiding applicable laws and regulation, (2) ethical, respecting principle and values, (3) robust, preventing harms from a technical and social perspective. With regard to the second aspect, four ethical principles have been suggested for practitioners and developers: (i) Respect for human autonomy, (ii) Prevention of harm, (iii) Fairness, (iv) Explicability. These principles are complemented by a non-exhaustive list of requirements, which are further explained in the document: (1) Human agency and oversight, (2) Technical robustness and safety, (3) Privacy and data governance, (4) Transparency, (5) Diversity, non-discrimination and fairness, (6) Societal and environmental wellbeing, (7) Accountability. It is significant that the European Union encourages stakeholders and public opinion to provide

feedback on the guidelines in order to distribute a reviewed version in 2020, because it means that the matter is so important that public engagement is considered crucial.

4.2. AI and Labour from a “Human-centric Approach”

We can agree that the problem raised by Alan Turing – if machines can “think”, as humans do (Turing, 1950) – has lost its provocative flavour. It is a fact that artificial agents can replace humans in several kinds of physical and intellectual tasks. Moreover, it is foreseeable that in the future, AI capabilities will increase, and the space left for humans will proportionally decrease. In the EU documents mentioned above, this scenario is taken into specific consideration. In the latest one, the *AI HLEG Ethical guidelines*, under the principle named “respect for human autonomy”, it is clearly stated that “humans interacting with AI systems must be able to keep full and effective self-determination over themselves”. With special regard to the work sphere, AI “should support humans in the working environment, and aim for the creation of meaningful work”.

This important statement is implemented, in the same document, in several assessment profiles. For example, while developing AI tools, human agency should be preserved by deploying measures preventing overconfidence in or overreliance on AI systems, and human oversight should be granted thanks to mechanisms of detection of system failures or malfunctions.

We have to remark that this approach, which is largely known as “human centric”, does not promise to defend current workplaces or to prevent job losses – which will be inevitable – but to preserve the “meaning” of work, which is still something.

4.3. Conclusion: AI and the “Meaning” of Work

It is foreseeable that AI will change the labour market deeply, transforming working conditions, and even replacing human workers. As many disruptive phenomena are difficult to estimate, it is unwise to make predictions. The scenario of a society where only AI and robots are working seems still far from realistic. However, from the last observations in the previous paragraph, a further question emerges concerning the possibility of a “job-less” society. Indeed, a profession, of any kind, should contribute to providing “meaning” to human life not only because it provides the means of surviving, but also because it allows – and sometimes it requires – one to interact with people. In other words, labour

is a crucial factor in social cohesion. Therefore, if we delegate our activities to AI completely, the result would be that we could have more time to spend on our hobbies, yet it is likely that we could be alone. In short: no meaningful work rhymes with meaningless spare time.

The Proposal for Directive (2017)797 does not tackle these issues. Of course, it can be said that the impact of AI on the labour market and the problem of replacing the human workforce by AI-powered devices or systems fall outside the scope of this legislation, while many other provisions, most of which have been cited above, are specifically aimed at that. However, perhaps it should have been at least mentioned in the explanatory memorandum – if not in the preamble – that the advent of AI – not only of “digitalization”, as written – will be one of the main factors for the dramatic transformation of working conditions in the next few years.

5. Conclusion

It is remarkable that Wiener – almost seventy years before the current “Industry 4.0” phenomenon – envisioned a futuristic model of an “automatic factory” in which production processes would be overseen by “computing machines”. He was concerned particularly with the fact that “the intermediate period of the introduction of the new means [...] will lead to an immediate transitional period of disastrous confusion” (Wiener, 1954) and that “the automatic machine, whatever we think of any feelings it may or may not have, is the precise economic equivalent of slave labour. Any labor which competes with slave labor must accept the economic conditions of slave labor” (Wiener, 1954 p. 162). The author, in his final comments, expressed his confidence that the business community would have taken into account the social impact of automation and its related risks, and that, eventually, a balance would have been found thanks to the self-regulatory properties of every social system. Today, we can argue that some of the most debated ethical issues on technology raised in this book were tackled with an approach that is currently adopted. Our trust in the “invisible hand” of the market, unfortunately, is not as considerable as Wiener’s was.

Currently, the approach promoted by the “Philosophy of Information” is maybe the most structured vision we can appreciate. The anthropological image of “*homo poieticus*” suggests that we are free, collectively and individually, to shape our future, but humankind is also left alone in this challenge. Freedom of choice is a good thing, of course, but dealing with “disruptive” technologies without a “Plan B” means that behind every

decision – apparently insignificant – there can be hidden risks and potential catastrophes. These risks have been outlined in the three levels of complexity addressed in this contribution.

Concerning human/human cooperation, I have seen that the “virtualization” of working tasks makes it possible to market labour as a commodity. In this context, workers seem to resemble the mythical character of The Demiurge: like this demigod, who is summoned to shape empyreal ideas into telluric matter, workers are required to be productive, efficient, but also “creative”, bringing order to chaos according to the client’s requirements. If participating in an “Agile team” is a matter of emotional involvement rather than of skills and competences, then there is a risk that the “meaning” of life depends on the outcome of the group and, indirectly, on innumerable external factors. The figure of “*homo poieticus*”, celebrated by philosophers, is not so easy to mimic.

As regards human/machine collaboration, I have observed that “decentralized” business models are based on technological platforms which control the interactions between “services providers” and “users”. These platforms tend to create artificial ecosystems but also to isolate exchanges from other interactions. The internal flexibility of the market within the platform ends, creating “inelasticity” in the whole social system.

Finally, in the machine/machine interaction, a further challenge worth being mentioned is brought by machine-learning technologies. The fact that AI agents can improve their abilities and adapt to different environments makes them real competitors for human workers. The opinion expressed by Wiener sounds like an early warning.

To conclude, the attempt to adopt a “human-centric” approach towards IA is praiseworthy, yet some preliminary clarifications are still required. It is almost trivial to insist that we should first understand what it means to be “human”. The fact that we never did it in a thousand years of history and in the entire lifetimes of people who preceded us perhaps means that we will never be able to do so. However, focusing on labour conditions, the problem can be simply put as follows, recalling the philosophers mentioned in the introduction: shall we agree with Kant, and establish a threshold to defend human dignity or, following Hegel’s view, shall we postulate that there is not any, trusting our intelligence? In the first case, we would conclude that there is a limit also to technological development when it becomes a threat for “humans”, whatever this word encompasses. In the second hypothesis, we should be aware that there is a possibility that we could find ourselves not in the position of the master, but in that of the slave. At that point, it could become irrelevant if control is owned by a

human or by a machine. Moreover, it would be complicated to evade from slavery, having to outsmart a more-than-human master.

References

- Ala-Mutka, K., Broster, D., Cachia, R., Centeno, C., Feijóo, C., Haché, A., Kluzer, S., Lindmark, S., Lusoli, W., Misuraca, G., Pascu, C., Punie, Y. & Valverde, J. A. (2009) *The impact of social computing on the EU information society and economy*.
- Aristotles (1958) *Politics* Barker, E. London: Oxford University Press.
- Balkin, J. M. (2017) The Three Laws of Robotics in the Age of Big Data. *Ohio State Law Journal*, 78(5), 1218-1241.
- Baran, P. (1962) *On Distributed Communications Networks*.
- Beck, K., Beedle, M., van Bennekum, A., Cockburn, A., Cunningham, W., Fowler, M., Grenning, J., Highsmith, J., Hunt, A., Jeffries, R., Kern, J., Marick, B., Martin, R. C., Mellor, S., Schwaber, K., Sutherland, J. & Thomas, D. (2001) Manifesto for Agile Software Development.
- Belk, R. (2014) You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67(8), 1595-1600.
- Benkler, Y. (2000) From Consumers to Users: Shifting the Deeper Structures of Regulation. *Federal Communications Law Journal*, 52, 562-63.
- Benkler, Y. (2006) *The wealth of networks: How social production transforms markets and freedom* Yale University Press.
- Borgmann, A. (1999) *Holding on to reality. The nature of information at the turn of the millennium*. Chicago: University of Chicago Press.
- Buterin, V. (2017) The Meaning of Decentralization, *Medium*. 6/2/2017. Available online: <https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274> [Accessed 20/4/2019].
- Durante, M. (2017) *Ethics, Law and the Politics of Information - A Guide to the Philosophy of Luciano Floridi*. Dordrecht: Springer.
- Ellul, J. (1954) *La technique, ou, L'enjeu du siècle*. Paris: Colin.
- Felson, M. & Spaeth, J. L. (1978) Community structure and collaborative consumption: A routine activity approach. *American Behavioral Scientist*, 21(4), 614-624.
- Floridi, L. (2004) Information, in Floridi, L. (ed.), *The Blackwell guide to the philosophy of computing and information*. Blackwell philosophy guides. Malden, MA: Blackwell Publishing, 40-61.
- Floridi, L. (2013a) *The Ethics of Information*. London: Oxford University Press.

- Floridi, L. (2013b) *The Philosophy of Information*. Oxford: Oxford University Press.
- Floridi, L. (2014) *The 4th Revolution. How the infosphere is reshaping human reality*. Oxford: Oxford University Press.
- Floridi, L. (2015a) Hyperhistory and the Philosophy of Information Policies, in Floridi, L. (ed), *The Onlife Manifesto*. Springer International Publishing, 51-63.
- Floridi, L. (ed), (2015b) *The Onlife Manifesto. Being Human in a Hyperconnected Era*. Cham: Springer International Publishing.
- Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., Luetge, C., Madelin, R., Pagallo, U. & Rossi, F. (2018) AI4People—An Ethical Framework for a Good AI Society: Opportunities, Risks, Principles, and Recommendations. *Minds and Machines*, 28(4), 689–707.
- Foucault, M. (1975) *Surveiller et punir. Naissance de la prison*. Translated from French by. Paris: Gallimard.
- Goethe, J. W. v. (1831) *Faust: eine Tragödie*. Stuttgart-Tübingen: Cotta.
- Gordon, P. E. (2012) *Continental divide: Heidegger, Cassirer, Davos*. Translated from English by. Cambridge (Mass.): Harvard university press.
- Harari, Y. N. (2018) *21 Lessons for the 21st Century*. London: Jonathan Cape.
- Hegel, G. W. F. (1968) *Phänomenologie des Geistes*. 20 vols. Stuttgart: Frommans.
- Kant, I. (1911) Grundlegung zur Metaphysik der Sitten, in Wissenschaften, K. P. A. d. (ed), *Kant's Gesammelte Schriften*. Berlin: Reimer.
- Kapp, E. (1877) *Grundlinien einer Philosophie der Technik: zur Entstehungsgeschichte der Cultur aus neuen Gesichtspunkten*. Braunschweig: Westermann.
- Kiv, S., Heng, S., Kolp, M. & Wautelet, Y. (2018) Agile Manifesto and Practices Selection for Tailoring Software Development: a Systematic Literature Review, in Kuhmann, M., Schneider, K., Pfahl, D., Amasaki, S., Ciolkowski, M., Hebig, R., Tell, P., Klünder, J. & Küpper, S. (eds), *Product-Focused Software Process Improvement. PROFES 2018*. Cham: Springer, 12-30.
- Kurzweil, R. (2005) *The singularity is near: when humans transcend biology*. London: Gerald Duckworth.
- Law, E. & von Ahn, L. (2011) *Human Computation*. San Rafael: Morgan & Claypool Publishers.
- Lee, E. (2015) The Past, Present and Future of Cyber-Physical Systems: A Focus on Models. *Sensors*, 15(3), 4837-4869.

- Lessig, L. (2002) *The future of ideas. The fate of the commons in a connected world*. New York: Vintage Books.
- Milgram, S. (1967) The Small-World Problem. *Psychology Today*, I(1), 61-67.
- Moreira, M. (2017) *The Agile Enterprise. Building and Running Agile Organizations*. Berkeley, CA: Apress.
- Oh, S. & Moon, J. Y. (2016) Calling for a shared understanding of the “sharing economy”, *Proceedings of the 18th Annual International Conference on Electronic Commerce: e-Commerce in Smart connected World*. Suwon, Republic of Korea, 2971638: ACM, 1-5.
- Pagallo, U. (2017) Algo-Rhythms and the Beat of the Legal Drum. *Philosophy & Technology*, 31(4), 507-524.
- Pesole, A., Urzì Brancati, M. C., Fernández-Macías, E., Biagi, F. & González Vázquez, I. (2018) *Platform Workers in Europe*, JRC112157. Luxembourg: Publications Office of the European Union.
- Pufendorf, S. v. (1759) *De jure naturæ et gentium, libri octo. Cum integris commentariis virorum clarissimorum Jo. Nicolai Hertii, atque Joannis Barbeyraci. Accedit Eris Scandica. Recensuit & animadversionibus illustravit Gottfridus Mascovius*. Francofurti & Lipsiæ: Knoch & Esslinger.
- Sharma, S. (2015) *Evolution of as-a-Service Era in Cloud*, 2015. Available online: <https://arxiv.org/abs/1507.00939v1> [Accessed].
- Sutherland, J. (2014) *Scrum. The art of doing twice the work in half the time*. New York: Crown Business.
- Takeuchi, H. & Nonaka, I. (1986) The New Product Development Game. *Harvard Business Review*, 64(1), 137-146.
- Taleb, N. N. (2012) *Antifragile*. Random House/Nov. New York: Random House.
- Todescan, F. (2001) *Le radici teologiche del giusnaturalismo laico*. Translated from Italian by, 3. *Il problema della secolarizzazione nel pensiero giuridico di Samuel Pufendorf*, 3 vols. Milano: Giuffrè.
- Turing, A. M. (1950) Computing Machinery and Intelligence. *Mind*, LIX(236), 433-460.
- Weaver, W. (1949) The Mathematics of Communication. *Scientific American*, 181(1), 11-15.
- Wiener, N. (1948) *Cybernetics or control and communications in the animal and the machine*. Paris-Cambridge: Hermann & Cie-The Technology Press.
- Wiener, N. (1954) *The Human Use of Human Beings: Cybernetics and Society*, 2nd edition. Garden City New York: Doubleday.

- Wysocki, R. K. (2014) *Effective Project Management*. Translated from English by, 7th edition. New York: Wiley-Blackwell.
- Zaitsev, A., Gal, U. & Tan, B. (2018) Reviewing the Role of the Agile Manifesto and Agile Methods in Literature, *Twenty-fourth Americas Conference on Information Systems*. New Orleans.

CHAPTER II

WORKING FOR AN INTERNET PLATFORM: NEW CHALLENGES FOR COURTS

GIUSEPPE ANTONIO RECCHIA

1. Introductory Remarks: The Platform Economy and Labour Law

With incisive and almost prophetic precision, in 2014 Ursula Huws described the effects of globalization and standardization of work and knowledge as a process of spatial and temporal transformation, “a movement of jobs to people, and of people to jobs” (2014, p. 47), which inevitably affects identities and social structures.

The rapid growth and popularity of digital platforms entail a further and urgent acceleration of that process. This should take place not only when they offer job opportunities to be carried out exclusively online (crowdsourcing), but also when the technological element is confined to the assent of a job opportunity and the control of a performance that remains traditional (on-demand work via app or, more appropriately, gig work) (Cherry 2016; De Stefano 2016; Stanford 2017; De Stefano, Aloisi 2018). Indeed, although capitalist schemes of production relations remain unchanged - with a shift towards service production (from translation to transport by car, from legal consulting to food delivery) - it is work itself that changes, disguised in an informality and a precariousness never so well organized (Coin, Marrone 2018).

Gig work, an expression that describes its debasement not only from a continuity but also from a quality perspective, masks an aggressive model of wealth accumulation; it cuts down the costs of intermediation, organization, and transaction for the companies (Tullini 2018) and takes advantage from the vast availability of manpower, often with little professional capacity, held in check by the economic crisis (Fleming 2017).

The scene that has been unfolding is of a type of work, already poor, and yet further impoverished by the escape from traditional regulation, and that nonetheless – contrary to the mainstream narrative – is often the primary source, if not the only source, of income (Huws et al. 2017; Pesole et al. 2018).

As has been already pointed out, one of the reasons for the platform's success is that they have been able to flourish in a legal vacuum. This was due to the transnational nature of the companies involved and the rapidly shifting nature of their organizational models, and most of all thanks to the very idea of the business model, an immaterial space in which customers and providers of goods and services can directly interact. As far as February 2017, the Commercial Court of Madrid defined Uber as a tech-company which carried out its activity like any computer company (Mercader Uguina 2017), and for a long time the debate has focused on whether Internet intermediation platforms represented an obstacle to fair competition (Valant 2016; Hatzopoulos, Roma 2017; Geradin 2018). The consequence is all too clear: this business model can escape company law, tax law and also labour law regulations.

The veil has been pierced only recently by the European Court of Justice (20th December 2017, Case C-434/15 *Asociación Profesional Elite Taxi v Uber Systems Spain*) which assessed the service provided by Uber as more than just an intermediation service, regarding its software tools as an integral part of an overall service whose main component is a transport service (Beltran 2018a). The shift from an information society service to services in the field of transport brings to the fore the more “material” element of the work required to provide services and goods, and therefore the underlying demand for rights and protections from those who, through their work, operate on the platforms. In other words, the novelty of the platform phenomenon cannot hide the most traditional question, i.e. the classification of the work performed. The platform business model mainly relies on engaging individuals as self-employed contractors, rather than as employees. However, is it really so? Or do these contractual arrangements mask the existence of an employment relationship? Are riders, drivers, turkeys, taskers independent contractors? Are they employees, and more significantly, employees stuck in exploitative working conditions? (Goldkind, McNutt 2019). As any labour law scholar understands, status does matter (Todoli-Signes 2017; Ales 2018).

2. The Classification Dilemma: between the “Traditional” Bipartite and the “Modern” Tripartite Taxonomy of the Employment Relationship

The contract of employment is a fundamental feature in labour law across almost every jurisdiction (Casale 2011); it does not simply regulate the exchange of work and remuneration, but, in redressing the inherent asymmetries of power between the employer (the “stronger” party) and the employee (the “weaker” party), it serves as a gateway to a protection guaranteed by the law. The traditional purpose of labour law is precisely this: to provide for rules which limit the scope of autonomy of the parties involved, offering a set of rights for the employee – and accordingly, a set of statutory duties for the employer – that can be effectively enforced.

Inevitable differences arise from one legal system to the other; in civil law systems, the approach is traditionally a typological one (i.e., by a statutory definition), while in common law systems it is generally based on case law (Supiot 2000, p. 219). Yet the employee is generally identified as a person who agrees to work under the direction and control of the employer, who – as a legal effect – has the power to issue orders and directives, to control how they are carried out and to sanction non-compliant behaviour.

More importantly, the legal recognition of the need for a regulation of the employment contract – and as a consequence, of employee status – is defined by the rise of a clear bipartite taxonomy, the employment/self-employment pair, which separates those who need protection from those who do not. In some cases, the distinction is often based on a clear positive/negative definition (e.g., in the Italian Civil Code, Article 2094 identifies the “subordinate worker” on the grounds of working «under the direction of the entrepreneur», while Article 2222 defines self-employment through the absence of a bond of subordination). In other cases, a jurisprudential counterpart is considered (in the United Kingdom, the difference between a contract of service and contract for service, defined by the presence/absence of managerial powers exercised by the employer and ascertained through the so-called control test).

The higher the protection granted, the more important the distinction becomes, up to the point that the traditional bipartite taxonomy of work employment could be currently described as relying on a “all-or-nothing” principle, due to the significance of the imbalance of protection standards. The “fence” does not only provide for clarification, but also for exclusion, for example from the minimum wage or unlawful dismissal regulation (Freedland, Prassl 2017, p. 22).

It is for this reason that for a few decades this distinction, or rather, its identifying criteria, have struggled to cope with an increasingly fragmented and diversified reality, one in which «work has therefore lost its unity of place and action; it can no longer be represented unitarily, not even (perhaps even less) by its legal representation» (M.G. Garofalo, 2008, p. 22).

For some scholars, theorization is needed discussing a move away from the “employee” type in the light of the growing social and economic dependency of workers, a trait that, as has been argued, has never found a place in the legal and case-law definition of the employment relationship. Yet for many judges, any reported shortcomings could be more finely tuned with a loosening up of the control test. This is in order to combine it with an analysis of the economic reality (Treu, 2017, p. 6), or the use of secondary and auxiliary indexes (type of remuneration, ownership of the means of production, organization of working time, type and intensity of exercised controls, etc.; De Simone, 2014). This should not be examined alone, but left to an overall judicial evaluation. The aim is, after all, the same: to widen the scope of employment and protection. This search has also involved the legislator, pushing for a change towards a tripartite system of identification and protection, which solved a few problems but raised just as many, the first being the ambiguity of the legislative measures.

In the United Kingdom, a new contractual category, the worker, placed in between the employee and the self-employed, was devised at the end of the 1990s by amending section 230 of the Employment Rights Act 1996. It is defined as an individual who undertakes to do or perform personally any work or services for another party to the contract, whose status is not by virtue of the contract that of a client or customer of any profession or business undertaking carried on by the individual. As a consequence, the ‘worker’ status does not give full employee rights, but it does give the right to annual paid holiday and the national minimum wage (Sargeant 2017).

In other cases, the ambiguity stems from keeping a bipartite system, while introducing some protection for some sub-sets of self-employment: in Spain, for example, Law no. 20/2007 created the figure of the economically dependent autonomous worker (*Trabajador Autonomo Economicamente Dependiente*, TRADE), defined by economic dependency (at least 75% of the income has to be obtained from the same client) and by ownership of the work tools. TRADE workers receive some legal protections, such as the minimum wage, annual leave, entitlements in case of wrongful termination, leave for family or health reasons, and collective

bargaining (Fernandez Lopez, 2008; del Mar Ruiz Castillo 2010). Similarly, a preliminary recognition of quasi-subordination status in Italy for litigation and jurisdictional purposes in 1973 (coordinated and continuous collaborations, Art. 409, no. 3 of Code of Civil Procedure) was followed by a number of legislative interventions, the last of which (Article 2 of Legislative Decree no. 81/2015) recognizes those (self-employed) workers who «collaborate on a continuous basis, by providing exclusively personal work, with a main client who can organise the activity also with respect to the time and the place of work». The provision extends employment protection to these workers inasmuch their collaboration with the client is so intensive to become a form of 'hetero-organization', thus not distancing itself significantly from the traditional employer's directive power (Fili 2015; Zoppoli 2016).

It is therefore evident that the debate on platform workers is only the last instalment of a much wider debate, which predates the gig economy on labour fragmentation, on an increasingly fragile divide and the emergence of the "grey area" between employment and independent work. The shift from a bipartite to a tripartite system, whether by definition or by protection, does not alter the purpose of the distinction and the fundamental relevance of the legal tests used to detect the right classification. It is not, however, a case of "nothing new under the sun" which can be addressed with a simple makeover of theories or consolidated case-law. The peculiar nature of the relationship between the platform, the laborer and the client renders the blurring of employment status even more topical (Weiss 2016, p. 655; Perulli 2018, p. 121), well beyond the simple risk of a misclassification (Cherry, 2016), which might be convenient to minimise the application of employment legislation or to avoid fiscal and social security costs.

It has been remarked that the specific features of the relationship between the platform and the worker might vary widely from case to case (Voza, 2017; Gramano, 2019), and often within the same platform (Ivanova et al. 2018). Yet platform workers share characteristics which pertain both to independent contractors – e.g. voluntary initiative and the will to (co)operate with the platform – and others which are the preserve of employees, such as a non-negotiable exposure to an "algorithmic management", which determine an effective and efficient searching, matching, scheduling, and allocation of work and of levels of remuneration (Prassl 2018, pp. 11-30).

The theoretical approach to this dramatic blurring falls outside the scope of this paper, although it surely presents some fascinating results, such as the re-evaluation of employment in terms of democratic deficits –

a broadly conceived form of subordination – and (economic and social/psychological) dependency (Davidov 2017), or the multi-faceted perspective of advocating for a functional concept of the employer to share the related responsibilities (Prassl, Risak 2016).

What is certain is that the challenge of work classification presented by platform capitalism seems to have concerned mostly academia, and only marginally the legislator. One example of this is French Loi no. 2016-1033, which awarded individual and collective rights to *«les travailleurs utilisant une plateforme de mise en relation par voie électronique»*: nonetheless, the provision is not applicable to all platform workers, but only to independent contractors, whose «platform determines the characteristics of the service provided or property sold and fixes its price» (Code du travail, Art L. 7341-2). Their classification, or reclassification in case of bogus employment, remains therefore unscathed. Similar effects would be expected in the United Kingdom, where the recommendations on employment status made in the Taylor Review (the “Good Work Plan,” published in July 2017), suggests «improving the clarity of the employment status tests» without explaining what this would be. In Italy, the case brought before the Turin courts (see § 4) has prompted the government to put forward an amendment that would recognize only food delivery couriers as employees.

Even the recent Directive on Transparent and Predictable Working Conditions in the European Union, approved on 16 April 2019, the aim of which is to improve working conditions, providing more complete information regarding the essential aspects of the employment relationship, regardless of the specific working arrangements and contracts, offers a “weak” definition of a ‘worker’, describing him/her as any individual who «has an employment contract or employment relationship as defined by the law, collective agreements or practice in each Member State with consideration to the case-law of the Court of Justice». This means that the Directive will not be able to affect all platform workers; however, it opens up to an important contribution from national courts, which, when faced with the exercise of classification, are called for an evaluation of the CJEU’s case-law and furthermore of national case-law (“the practice in force”) to better define an employment relationship.

It is the courts, indeed, which have remained for a long time outside the debate, not least because an extreme organizational and contractual freedom generates uncertainty and weakens the already weak parties, discouraging any possible judicial claim (Garofalo 2018, p. 177). In the space of a little more than two years and with an increasing rate, several decisions have been answering the question of whether those providing

work through these platforms are to be regarded as their employees. As the relevance of the courts' participation in the general law-making process cannot be underestimated, the aim is to focus on the findings from available case law from a comparative perspective. As the phenomenon is global, and judgments are handed down from courts all over the world, we will focus on a number of countries, with the aim of offering a deeper analysis of the various decisions, which will draw similarities and obstacles concerning the more general need to respond to gig economy workers' quest for legal protection.

3. Labour Law Schemes and Jurisprudential Acquis in Common Law Systems (USA and UK)

The struggle with platform workers' classification reached an early climax when a US judge concluded that dealing with this issue would have been like «being handed a square peg and asked to choose between two round holes» (Cotter v. Lyft, 13-cv-04065-VC, N.D. California, March 11, 2015). In one of the first cases brought forward by Lyft drivers, it was pointed out that they did not seem much like employees, but they did not seem much like independent contractors either. Yet, any observer could not rule out the possibility that the complexity of the question may have been in part due to how it was being asked.

It has already been mentioned that in common law systems, and especially in the United States, the traditional control test which defines an employment relationship as a relationship of control (i.e. the employer gives orders, plans out jobs in minute detail, and monitors the employee's performance) has often proved to be weak in the vertical disintegration of company models (Collins 1990). It has also given way to more comprehensive (and inclusive) legal means, provided by the law (such as the Fair Labor Standards Act, FLSA), and developed through the «economic reality» test.

This state of affairs has resulted in a multi-factor test which may prove counterproductive. The leading Borello case offered no less than 13 factors, eight «secondary indicia» of employment pertaining to the control aspect of the relationship, viz.:

- (a) whether the one performing services is engaged in a distinct occupation or business;
- (b) the kind of occupation, with reference to whether, in the locality, the work is usually done under the direction of the principal or by a specialist without supervision;

- (c) the skill required in the particular occupation;
- (d) whether the principal or the worker supplies the instrumentalities, tools, and the place of work for the person doing the work;
- (e) the length of time for which the services are to be performed;
- (f) the method of payment, whether by the time or by the job;
- (g) whether or not the work is a part of the regular business of the principal;
- (h) whether or not the parties believe they are creating the relationship of employer-employee.

Also, it provides a further five indicia related to economic reality:

- (1) the alleged employee's opportunity for profit or loss depending on his managerial skills;
- (2) the alleged employee's investment in equipment or materials required for his task, or his employment of helpers;
- (3) whether the service rendered requires a special skill;
- (4) the degree of permanence of the working relationship; and
- (5) whether the service rendered is an integral part of the alleged employer's business (Rogers 2016, pp. 487-488).

While undoubtedly useful to a multifaceted and in-depth legal reconstruction of the facts, the test remains unclear as to whether (and why) some of these factors, and their combination should matter more than others. It is therefore not surprising that the first two cases regarding platform workers – drivers working for very similar platforms, Uber (O'Connor v. Uber Techs., Inc., N.D. California, March 11, 2015), and Lyft (the aforementioned Cotter v. Lyft) – were both settled out of court, as they proved inconclusive, albeit with a very different perspective analysis. In the Uber case, the judge remarked that the platform retained «all necessary control» over the worker's performance, and drew a comparison with the employment relationship of FedEx drivers. Conversely, in the Lyft case, the uncertainty of the test results opened to extra-legal, or rather socio-economic, considerations, such as the need to value «the class of persons intended to be protected, and the relative bargaining positions of the parties». However, in a more recent decision (Raef Lawson, v. Grubhub, Inc., N.D. California, February 8, 2018) the Californian judge, while considering the Borello factors as a whole, has found the food delivery labourer to be an independent contractor.

In particular, the court remarked that «Grubhub has to create delivery blocks with bonuses and other incentives to encourage drivers to make

deliveries because it does not have all necessary control of the drivers' work; in particular, it does not have control of when and whether they work». The reference point was a precedent (JKH Enterprises) of a delivery company whose business model was instead based on regular delivery drivers, which were given «regular route, regular schedule or regular customers». The short duration of the driver's contract, the non-exclusivity of the commitment and the guarantee of a minimum average payment per hour, on the basis of the acceptance and fulfilment of 75% of incoming orders during each scheduled delivery block (i.e. shift) were all important aspects to conclude that GrubHub lacked all necessary control.

Similarly, the Court for the Eastern District of Pennsylvania (Razak v. UberBlack, April 11, 2018) concluded that UberBLACK drivers could not be regarded as employees. In this case, a different set of factors were used (the so-called Donovan Factors):

- (1) the degree of the alleged employer's right to control the manner in which the work is to be performed;
- (2) the alleged employee's opportunity for profit or loss depending upon his managerial skills;
- (3) the alleged employee's investment in equipment or materials required for his task, or his employment of helpers;
- (4) whether the service rendered requires a special skill;
- (5) the degree of permanence of the working relationship;
- (6) whether the service rendered is an integral part of the alleged employer's business.

These criteria were employed to rule that the "control" exercised by UberBLACK on its drivers could be likened to a homeowner engaging in a complete renovation project with a carpenter or a plumber. Specifically: «The homeowner may impose certain requirements while the carpenter/plumber is in the house, such as not permitting certain fumes, footwear, music, or other conditions — but all of these conditions apply only while the carpenter/plumber is in the home – and they certainly do not suffice to conclude that the carpenter/plumber is an employee». Moreover, the fact that drivers have the opportunity to choose a greater profit by not accepting trip requests, could be interpreted as giving the freedom «to make money elsewhere (even while actively remaining online [with] the Uber app to assess whether, for example, there was any 'surge' pricing) [...] pursuing their own entrepreneurial opportunities in search of profit».

Another perspective that complete overturns such approach could spread thanks to the Supreme Court of California decision in *Dynamex Operations West, Inc. v. Superior Court of Los Angeles* (April 30, 2018) which ultimately rejected the Borello test and implemented a three-part test (the ABC test). Presuming that all workers are employees, this approach places the burden on the alleged employer to establish whether the worker is an independent contractor. The factors are:

- (a) the worker must be free from the control and direction of the hirer in relation to the performance of the work, both under the contract and in fact;
- (b) the worker must perform work that is outside the usual course of the hirer's business;
- (c) the worker must be customarily engaged in an independently established trade, occupation, or business of the same nature as the work performed for the hirer.

Although implemented in a case concerning delivery drivers who had worked for Dynamex, a nationwide same-day courier and delivery service, the ABC test, when applied to on-demand work via a platform, could undermine an entire business model: which platform involves work which is not the very core of the business itself?

In the United Kingdom, as already mentioned, the cases working their ways through the courts face a tripartite taxonomy which, while providing for the intermediate category of the “worker,” does not make misrepresentation easier to claim and has so far pushed the legal status of employee far beyond platform workers’ reach. The contract of employment requires a “mutuality of obligations” for the employer to promise work and the employee to promise to accept it (Kenner 2019), the certainty of which appears to be absent in the platform economy model. The judges seem therefore constrained to choose between the categories of the “worker” and the “self-employed”, on the grounds of the control test, as interpreted in the *Autoclenz* case (*Autoclenz Ltd v Belcher* [2011] UKSC 41), searching for the true agreement between the parties, which stems from, but is not limited by, the written agreement, especially when contractual terms may include substitution clauses, or clauses denying any obligation to provide or accept work (Carby-Hall 2018, p. 171).

This is the reason why the first, and most famous, decision of any UK Court - *Aslam & Farrar v Uber*, London Central Employment Tribunal, 28 October 2016 - has proven to be such a landmark ruling. The tribunal, pre-empting the position that the European Court of Justice would have taken

a year later, held that Uber was not a technology company offering a software platform as it claimed, but it was fundamentally in the business of providing transport services. Specifically, «the notion that Uber in London is a mosaic of 30,000 small business linked by a common ‘platform’» was deemed simply as «ridiculous».

Accordingly, «the supposed driver/passenger contract is a pure fiction which bears no relation to the real dealings and relationships between the parties». As a result, the true relationship between Uber and its drivers fell squarely into the “worker” definition of the Employment Rights Act. The platform was proven to dictate various aspects of the work carried out by its drivers, among which were: a preliminary interviewing and recruitment process; instructing drivers about how to do their work; controlling them in the performance of their duties; the power to amend terms and conditions unilaterally; a rating system, which is effectively a performance management tool; disciplinary procedures and the control of key information (details about the passenger’s identity, the destination of the journey), indicating a significant level of control. The reclassification as a worker should, therefore, apply for any periods during which an Uber driver:

- (a) has the Uber app switched on;
- (b) is within the territory in which the driver is authorized to work;
- (c) is able and willing to accept rides.

The Aslam ruling has been upheld by the Employment Appeal Tribunal (10 November 2017) and more recently, although not unanimously, by the Court of Appeal (19 December 2018). The judges approved the fact that the relative bargaining power of the parties had been valued having regard not to the label of the contract but to all the circumstances. In particular, the traditional control test was “nuanced” and applied in conjunction with the test on the degree of integration in the organization. The absence of any obligation to accept trips did not establish independence, as the driver’s account would be deactivated when failing to accept at least 80% of trips and when cancelling a trip breached the parties’ agreement, as well as the economic reality. The EAT explicitly upheld the finding that Uber drivers are still working for Uber when they do not have passengers, but are “on call” awaiting the next ride, since a large pool of available drivers is the only way the Uber model can be realized.

The purposive approach of the Uber case, combining the true agreement test with the integration principle, has influenced a number of

decisions. One example of this is *Dewhurst v CitySprint UK Ltd*, (London Employment Tribunal, Case no 2202512/2016, 5 January 2017), regarding a courier, misclassified as an independent contractor on the grounds of an agreement which allowed him to work for competitors and to provide a (competent and insured) substitute, when the true relationship maintained the obligation to perform work individually.

In *Pimlico Plumbers Ltd & Anor v Smith*, which is regarded as a watershed for sham self-employment, and with an inevitable impact on the platforms' business model, the Supreme Court set a worthy precedent in stressing that the obligation of a personal performance should be the «sole test» for worker classification (United Kingdom Supreme Court, 13 June 2018). The fact that Mr. Smith was required to drive a company-branded van, wear a company uniform, complete a minimum of 40 hours per week, and permitted to substitute his services with another individual bound by the same terms and conditions, made him an independent contractor only on paper.

Nonetheless, the relevance of the personal scope of the service provided may prove how exclusive the worker classification can be. A substitution clause detailed in the contracts of Deliveroo riders has been held as decisive to classify them as independent contractors in litigation over trade union recognition and therefore based not on the Employment Rights Act but on the Trade Union and Labour Relations (Consolidation) Act 1992 (*IWGB v Deliveroo, Central Arbitration Committee*, 14 November 2017). The arbitration body denied worker status due to the non-exclusivity and substitution clauses stated in their (recently amended) contracts, and on the evidence from one rider (brought by the platform) that he regularly engaged a substitute by giving a friend his app to download and password details, in exchange for a percentage of the fee received from Deliveroo (*McGaughey* 2018). This was done without investigating too deeply the business model, which still showed that the riders could work only if the zone they were in was open at that time and could not hold key information, e.g., how much food is to be delivered or the delivery address. On 5th December 2018, the High Court of Justice Queen's Bench Division Administrative Court confirmed the decision, dismissing the argument put forward by the Independent Workers of Great Britain that the restriction of statutory recognition to conduct collective bargaining to "workers" breached Article 11 of the European Convention of Human Rights.

4. Labour Law Schemes and Jurisprudential Acquis in Civil Law Systems (France, Spain, Italy)

France has produced copious case law, more than any other civil law country, both in lower and higher courts (Fabre 2018). It has to be noted that the majority of the sampled cases recalls the presumption of a non-employment contract established by Article L. 8221-6-I of the Code du Travail («*Sont présumés ne pas être liés avec le donneur d'ordre par un contrat de travail dans l'exécution de l'activité donnant lieu à immatriculation ou inscription*»). This provision already sets the problem out of its natural focus: the presumption of non-employment affects the relationship between the worker and the client, but not the one with the platform. However, according to Article L8221-6-II, the existence of a contract of employment may always be established as long as a «permanent legal subordination relationship» can be proven.

As French legislation does not provide a definition of the employment contract (Dockès 2011), the judges have to rely on the judicial acquis and in particular on a strict interpretation of the subordination relationship. The latter is «characterized by the performance of work under the authority of an employer, who has the power to issue orders and directives, to supervise its execution and to punish the faults of his subordinates; that work within an organized service may be indicative of the relationship of subordination where the employer unilaterally determines the conditions for the performance of the task» (Cour de Cassation, Chambre sociale, 13 Novembre 1996, n° 94-13187).

It should, therefore, come as no surprise that the authority or the power to issue orders are hard to find in gig work. One notable exception exists (Cour d'appel de Paris, pôle 6 ch. 9, 13 Décembre 2017, n° 17/00351), in which the conditions imposed on the LeCab driver – which *de facto* forced him to be connected permanently in order to be able to work, and to be permanently available for the company – were recognized to disguise an employment relationship.

Hence, in a dispute with the food delivery platform Take Eat Easy, the Court stated the following: «in the context of a tripartite relationship between the restaurant owner, the bike courier and the customer, the meal delivery service was necessarily organized, but it does not establish that the company unilaterally determined the conditions of performance of the deliverer's work, because he was not obliged to follow the suggested route» (Cour d'appel de Paris, pole 6, ch. 2, 12 Octobre 2017, n° 17/03088). Similarly, in a case concerning the claimed misclassification of an Uber driver, if the need to organize the service does not equal a control

power, a directive power cannot be recognized when «drivers have every freedom to accept or refuse a race» (Cons. prud'h. Paris, sect. com., ch. 4, Jan 29, 2018, n° 16/11460). Even the platform's possible use of penalties for the breach of contractual obligations, which could hint at the existence of a disciplinary power, is not sufficient to characterize the relationship as a subordinate one, in light of the freedom to choose to work or not to work (Cour d'appel de Paris, pole 6, ch. 2, 20 Avril 2017, n° 17/00511, referring to Take Eat Easy riders). Ultimately, for the French judges it is the recognition of the freedom to work that excludes that the parties can be bound by an employment contract (Cour d'appel de Paris, pole 6, ch. 2, 9 Novembre 2017, n° 16/12875, on a claim by Deliveroo couriers) (Donini 2018).

Nonetheless, the equation autonomy equals self-employment - *roule quand tu veux, roll when you want, a motto could be applied for many platforms* – has been seriously questioned in a recent decision of the Cour de cassation (Chambre sociale, Arrêt n. 1737, 28 Novembre 2018) which has reviewed the aforementioned judgement n° 17/00511, so as to reclassify a Take Eat Easy bicycle courier as an employee. Without referring to the consolidated case law on the meaning of subordination, the judges have found that:

- (i) the application was equipped with a geolocation system allowing the company to follow the position of the courier in real time and to count the total number of kilometres travelled, so that the role of the platform was not limited to linking the restaurant owner, the customer and the courier. In other words, the platform exerts an actual directive and control power on its rider, which also stems from collecting and analysing all customers' reviews (a control on the work taken out, rather than the claimed "quality control");
- (ii) the control allows one to assign bonuses or *maluses* (so-called "strikes") when the rider breaches any contractual obligations (e.g. late cancellation of a shift, partial connection to the agreed shift, no response during the shift, the so-called "no-show" term, unacceptable behaviour towards clients) according to the collected data, resulting in a power of sanctioning, which can go as far as the disconnection of the application, which exempts the platform from any forms of compensation for what is in reality a dismissal.

It has been noted that the decision is rather restrained and does not venture into new grounds (Bento de Carvalho, Tournaux 2019), as it

reiterates the principle of reality (according to which, employment status depends «on the factual conditions in which the workers' activity is carried out»). Reference is also made to the traditional criteria of subordination, through which the “objective elements” – such as the expression used in the explanatory note attached to the decision by the Court – are analysed, without arguing on the economic dependent condition of the rider or even addressing an organizational evaluation of subordination, as pointed out in literature (Van Der Bergh 2018). However, this state of play is a significant step towards a better understanding of the way a platform operates, which renders less evident the power to issue orders and directives, as “absorbed” in the algorithm, while still retaining the power of control and sanction.

Although the case is far from being settled (a new decision is expected from the Cour d'Appel), it is hard not to see a knock-on effect. In Cour d'Appel de Paris, pole 6, ch. 2, 10 January 2019, No. 18/08357, it was ruled that the employment nature of the work of an Uber driver relies on the control, via geolocation, of the activity and of the obligations imposed in respect to the form and manner of carrying out the work, which the Court deems «not compatible with the independent exercise of a profession». In other words, the platform gives “instructions” to and “controls” the driver through the application. Furthermore – and this is a key argument – it is impossible for the drivers to create their clientele, given the limitations set for their activity while they are providing their services for the platform, and the clear prohibition of contacting clients “autonomously”, or saving their personal data.

In Spain, judicial decisions have increased in the last few months, and it would be unfair to consider them without mentioning the extensive intervention brought forward by the Labour Inspectorate. The latter has shed some light on – and raised awareness of – the actual functioning of the platform, more effectively than documents or witnesses in judgment would possibly be able to do (Beltran, 2018b). At the time of writing, the work status of the platform labourer has been debated on five occasions, the majority of which have resulted in a reclassification as an employee. The first – and most famous – case is the Juzgado de lo Social núm. 6 de Valencia (1 June 2018), ruling in favour of a Deliveroo rider who considered the termination of his services (communicated by email) to be unfair dismissal. The judge based the decision on these findings:

- (i) the rider has to download a program developed by the company, receiving an authorization to comply with the app, whose creator and administrator is the same entrepreneurial subject;

- (ii) the company (through the app) decides the area in which the worker would perform his duties;
- (iii) even if the rider can choose (not) to work, he/she is included in a program established by the company, which ultimately sets the available “slots”;
- (iv) the company provides the instructions on how to make deliveries, on the methods of work performance, setting the times and standards of performance. Thus, at the beginning of each assigned shift, workers must go to the place established by the company (*centroid*), where they must indicate that the service is in order; there they must return each time the service is completed;
- (v) the company can always geo-locate the worker, ask for explanations on the service at any time, keep track of the times of each delivery;
- (vi) any subcontracting performed by a rider, even when allowed by the agreement between the parties, is irrelevant (according to Spanish case law, sporadic substitution does not affect an employment relationship because it is done in the firm’s interest), which proved the key elements of voluntariness, remuneration, and subordination of the rider.

The qualitative step up in the reasoning is, however, to be found in the evaluation of the fourth key element of the relationship, “alienation”, which is traditionally interpreted as the employee not being the owner of the means of production and the economic result of his/her activity. The Valencian judge offers an understandably broad interpretation, assessing not only that the essential means of production is the online platform, rather than the bicycle, and that the riders do not participate in the profits that company behind the platform eventually makes, but also that they are distinguished by:

- (a) alienation concerning information: since the platform sets the terms and conditions (including the prices for the service) with the restaurants and the customers, the rider does not and cannot have access to the business information the platform has (name of users, interests, delivery history, etc.);
- (b) alienation concerning the brand (*ajenidad en la marca*): the rider works on behalf of and bearing the platform logo, for which he provides advertising and represents its “public face”; ultimately the brand itself becomes the most important means of production, in a

system in which clients are crucial to services (Todolí-Signes 2018).

The same conclusions have been reached in Juzgado de lo Social núm.11 de Barcelona (29 May 2018), with regards to Take Eat Easy riders, hired by the platform through a simpler business model: 4 hour shifts, approved in advance by the company which also provided annual leave and remuneration, calculated on a fixed part and a variable part so as to guarantee a minimum amount for each shift even if there were no orders, that could only be interpreted as a salary. In this case, these elements and the proof of an internal disciplinary system (strikes) that can cause the termination of the contract, gave way to a clear identification of bogus self-employment.

Nonetheless, it has to be noted that the other three cases offer completely different judicial interpretations of the same facts, even when brought before the same Madrid Tribunal and concerning the same platform (Glovo). In Juzgado de lo Social núm. 39 de Madrid (3 September 2018), the rider has been regarded as being self-employed, based on:

- (i) the prevalence of the *nomen iuris* (“the will expressed jointly and freely through a contract should be taken at least as a starting point for the exam”);
- (ii) the recognition of the motorcycle and the mobile phone, owned by the rider, as the main means of work;
- (iii) the evaluation of the organizational structure of the platform – albeit considered only in its allocation of the service fees and the working spaces – as a «program that seeks to minimize its costs» (López Balaguer 2018).

● Only a few months later, the Juzgado de lo Social núm. 17 de Madrid (11 January 2019) rejected the reclassification of another Glovo rider but has recognized the status of “economically dependent self-employed” (TRADE). Lastly, employee status has been recognized in Juzgado de lo Social núm. 33 de Madrid (11 February 2019), based not only on the incisive control and sanctioning power of the platform («The company knows at all times where the worker is and the times of delivery, and uses the activity evaluation and the rating system for distributing future assignments»), but on the fact that it is the platform that makes work possible. The judge comes to the conclusion that, as all relations with the customers and advertising are taken on by the platform, the platform is

itself the means of production: without it, the rider would not be able to provide any service or grow as an entrepreneur.

In order to complete this short and non-exhaustive overview, it has to be considered that, as it is with the Spain case, in the last year Italian courts too have handed down a few rulings on the classification of workers, although limited to food delivery riders. In the first decision (Tribunale di Torino 7 maggio 2018, n. 778), the Turin employment tribunal held that Foodora riders were self-employed and not employees. The main argument, which received great interest and criticism from scholars (Recchia 2018; Biasi 2018; Del Conte, Razzolini 2018; Aloisi 2018) was that the riders' ability to refuse work and the absence of an obligation on the company to provide it could only mean that it was not an employment relationship. In other words: «if the employer cannot require performance of the service from the worker, he cannot exercise any control or organisational power over that performance, either». The core idea was the result of quite a formalistic reading of the terms and conditions set by the platform and a narrow – or rather, old-fashioned – understanding of the notion of subordination provided by Article 2094 of Civil Code, namely: «the fact that the worker is subject to managerial, organisational and disciplinary powers, resulting from specific orders given [by the employer] as well as to constant surveillance and monitoring over performance».

As a consequence, such factors as the degree of direction or control exercised by Foodora (the “slots”, available to the riders, but assigned according to an algorithm; the use of GPS and phone calls to monitor performance), which also in Italian case law would be regarded as secondary indicia of subordination, or the implementation of an internal ranking system (in theory used to reward outstanding riders, but in practice implemented to distribute disadvantages to the less worthy) were casually dismissed as signs of the necessary coordination between the platform and its workers «defining patterns of the business model, rather than distinctive elements of the nature of the relationship».

A possible explanation, if unsatisfactory, may be found in the circumstance that the Court, faced with a novel business model for the first time, based the reasoning on a comparable case, the pony express messenger, decided over 30 years before in a non-digital organization (Biasi 2017). A second decision, this time concerning Milan riders working for Glovo (Tribunale di Milano, 10 settembre 2018, n. 1853), confirmed this perspective. The judge found that:

- (a) the riders' freedom to determine if and when to work by choosing (or refusing) to log into the system and by accepting (or not accepting) delivery proposals is not compatible with employment;
- (b) a 'fidelity' score that might limit a rider's access to booking slots does not amount to disciplinary power over the rider by the company; failing to perform work has no disciplinary consequences (no termination, suspension or sanctions);
- (c) the working model, as factually verified in this case, did not allow for the direction, organisation, and monitoring by an employer, as is the case in the event of an employment relationship.

However, the Court of Appeal has recently overruled the decision of the Turin employment tribunal (Corte d'Appello di Torino, 4 febbraio 2019, n. 26). Although excluding a possible reclassification of the riders as employees, the Court ruled that they fell into the category of collaborators whose personal activity is unilaterally organized by the principal, as set by Article 2 of Legislative Decree no. 81/2015 (which seems to be particularly suitable for the platform business model; Del Conte, Gramano 2018). The organization of the shifts, the determination of the starting areas of work, the communication of the delivery addresses via the app and the predetermination of delivery times point to "the 'hetero-organization' of times and places". For this reason, riders are awarded the extension of the general regulations governing the performance of employment contracts, starting with the right to a wage set by collective agreements (but not to be protected against the unlawful dismissal).

5. Beyond Uber and Deliveroo: A Review of the Employer/Worker Regulatory Frameworks

The review outlined may lead one to conclude that the digital wild west can get even wilder when considered through the labour law lens and brought before the courts. Even without giving rise to significant litigation in Australia or Brazil, and adopting a (mostly) European viewpoint, there is sufficient evidence of a variety of approaches, giving rise to highly differentiated decisions. It would be foolish to expect otherwise, considering that every ruling is not only fact-dependent but also represents the legal interpretation of different contracts and relationships – often referring to the same platform and within the same country – against the backdrop of different statutory frameworks. The comparative overview cannot be based on examining results but must offer reasonable and relevant remarks on the arguments used by the judges, contributing to a

more critical and comprehensive interpretation of the platform workers' qualification.

In this respect, a first, and interesting, point is that many of the judgments here were analysed to show the progressive tendency of judges to go beyond the purely formal terms of the agreement between the platform and its worker. Whether by looking at the genuine agreement – showing the parties' actual bargaining power implied in the common law systems – or at the “reality principle” implemented in the civil law ones, a greater number of case studies offers a more courageous attitude towards a thorough investigation of the platforms business models and their relationship with those who work on/for them.

It is a step – the importance of which cannot be stressed enough – that prevents not only the judges, but all the scholars from falling into an easy trap: to find suitable answers to the difficult question of the classification dilemma of platform workers in what is already available, thus simplifying a complex scenario in motivational paths anchored in past precedents. The references to the pony express messenger cases in Italian case law, or to the FedEx couriers in US courts are at the same time comforting and compelling. Furthermore, when not taking into account the need for a reasonable reassessment of those precedents in a radically different context, these comparisons present the risk of a distorted juridical interpretation, and one that dismisses any significant innovation with a “same old” stance.

A second observation, prompted by the cross-national interpretation of the rulings, is the realization that a three-tiered work classification, often imagined and suggested as an effective counterweight to the centrifugal pressures which the binary systems are subject to, does not necessarily represent the remedy. Classification struggles are evident both in those countries that have introduced an intermediate category, and in those that, while not altering the binary scheme, have partly awarded protection standards to those workers who, without abandoning their self-employed status, find themselves in particular conditions of socio-economic dependence recognized by the legal system (Cherry, Aloisi 2017, pp. 676-681). Seemingly, the construction of a three-tiered classification enables platforms – and, more in general, any economic entity – to draft employment contracts that can still push their workers outside the protection schemes, thanks to “no obligation” and “substitution” clauses that design them as self-employed.

Furthermore, it can be argued that the tripartite system, which from a purely theoretical point of view could already make things more difficult for the scholar, faced with not one, but two “grey areas”, ends up building

an insurmountable wall between subordination and the intermediate categories. Platform workers, claiming to be misclassified, can hardly overcome intermediate status: this is the case of British case law, where the question as to whether Uber's drivers were employees and not workers has never arisen, or Spanish case law, where the initial rulings that directly recognized the riders as employees, have been more recently complemented by the recognition of TRADEs. As McGaughey aptly points out «There seems to be increasingly little doubt, if any, from the findings of facts in *Aslam* that Uber drivers are workers in UK law and could well be employees, just like the car valets were employees in *Autoclenz*. The Tribunal elaborated on the way that Uber drivers are monitored and controlled on take-it-or-leave-it contracts. [...] It follows that Uber drivers pass all tests for employee status in *Autoclenz*: they do work for a wage, they are controlled, and they perform work. They fulfil the non-requirement of 'mutuality of obligation' [...] Uber exercises all the functions of a typical employer» (2018, pp. 468-469). Why this status has not been claimed and detected yet is a circumstance that should be carefully considered by the legislator, when proposing a reform of the legal system or even simply a legislative clarification.

In conclusion, the classification of platform work is indeed challenging, but not significantly more challenging than any previous industrial/technological revolution. Arguing that “all is new” is as distorted as pretending to assert that “nothing is new.” The debate on the future of work and labour law does not detract from the importance of today's changes. However, it is a debate which has been taken up since the move away from the Fordist model, on the one hand, and the spread of non-standard work, on the other hand. What now becomes crucial is to tell the notion of (the contract of) employment from actual economic and social reality, and to distinguish between legal representation (and prescription) from accurate description. In any legal system, the construction of the contract of employment was surely encouraged, but not limited, by the 20th century production systems: its core elements, i.e., being legally subject to the managerial control and disciplinary authority of the employer, maintain their validity even when (any) work seems to be losing the Aristotelian unity of space, time and action.

This means that the “crisis” of employment law is the crisis of its indicia and tests when still used through a rear-view mirror. That is why the mainstream interpretation of the alternative self-employment/employment classification in terms of presence or absence of contractual freedom and flexibility, which seems to be implicitly assumed in many rulings considered here, has to be reinstated in terms of control/autonomy

(Cunningham-Parmeter 2016). As Deakin (2018, p. 610) suggests: «is the worker selling their labor capacity or power to work, which entails putting themselves at the disposal of another with its attendant physical and social risks, risks that labor and social security law have evolved, over many decades, to address? Alternatively, do they instead have a sufficient degree of independence and autonomy in the way the transaction is structured to enable them to absorb these risks by other means, which in the case of the “genuinely” self-employed include tax law and company law?». A few more questions may be added, helping one to come to terms with the platform business model:

- (a) is the platform required to provide work and is the worker required to accept it? What about the rating system? How does it affect this allocation?
- (b) does the individual provide his/her equipment? However, which is the piece of equipment that is needed, the bike or the app?
- (c) how much control is exercised by the platform? Isn't the algorithm itself a (not so neutral) system of control?
- (d) is the app an external element to the contractual relationship? Or, on the contrary, and regardless of the temporal element of its use, is the platform the actual workplace organized by managerial control?

The foregoing questions are the real challenge for judges and scholars, namely (re)discovering how the legal principles set for the old complexities can untangle the new ones.

6. Concluding Remarks

In the last few years, the rapid and growing development of platform capitalism has sparked a debate over its social and economic effect. This discussion has finally reached the courts in relation to the classification of the workers involved, which have examined whether working for and through a platform implies being an employee or a self-employed worker, or, according to some regulatory frameworks, it constitutes an intermediate status of economic dependency. When it comes to the legal regulation of work, classification is the issue, as it inevitably opens to full coverage and protection only when recognized as employment. The courts offer a rich variety of arguments and solutions which, while not free from criticisms, bear witness to an increasing awareness of the issues and their possible legal interpretation.

Nevertheless, a significant number of cases might be misleading. The judgments engage only a small number of existing platforms, which operate according to a similar, if not the same, model, presenting themselves as intermediaries in goods (meals) or people (hire with drivers) transport services. At the same time, with very few exceptions, litigation has yet to reach the supreme courts and set or strengthen trends. An in-depth examination of working conditions on the platforms is, however, making clear that while we should not assume that all platform work falls into the employment category – any “blanket treatment” of the gig economy or a “one-size-fits-all” approach would be incongruous. In many cases, despite the seeming novelty of technological innovation, the powers that platforms exercise over workers are as long-standing and robust as the contract of employment assumes.

After all, platforms’ policies affect all workers on the platform regardless of whether they are employees or independent contractors. Even when handing down rulings, some judgments seem to believe so; in *Juzgado de lo Social núm. 33 de Madrid (11 February 2019)*, for example, a few pages are devoted to what is called “legislative laziness,” wishing for «a new special employment relationship». A different framework could be needed, well beyond the scope of platform work, in the face of a flexibilization and fragmentation of working and employment conditions which many labour law systems have endured as anti-crisis and occupational measures. As De Stefano and Aloisi point out «a courier performing the same activity can be classified as a quasi-subordinate worker in Italy, as a self-employed worker in France, as an employee in Germany, as a “zero-hours” contract worker in the UK or as an intermittent worker in Belgium. A strong showing of fragmentation and weakness» (2018, p. 53). *De jure condendo*, it has to be recalled that the first measures in the history of work regulations were implemented regardless of a worker classification; new and adequate protection measures could well be imagined allowing the rationale of labour law not to be played out by the innovation that it aims to regulate.

Litigation and case law will continue to play an important and irreplaceable role not only to help one to correct the classification of platform work but also to prevent the most advanced forms of capitalism from obtaining more unfair advantages.

References

- Ales E. (2018). Protecting Work in the Digital Transformation: Rethinking the Typological Approach in the Intrinsically Triangular Relationship Perspective. In: Ales E., Curzi Y., Fabbri T., Rymkevich O., Senatori I., Solinas G. (eds) *Working in Digital and Smart Organizations*. Palgrave Macmillan, Cham, 11-28.
- Aloisi A. (2018). ‘With Great Power Comes Virtual Freedom’. A Review of the First Italian Case Holding That (Food-Delivery) Platform Workers Are Not Employees. Available at SSRN: <https://ssrn.com/abstract=3260669> (Accessed: 10 January 2019).
- Bento de Carvalho L., Toumaux S. (2019) Actualité du régime juridique du contrat de travail. *Droit Social*, 1, 57-68.
- Beltran I. (2018a). Caso Élite Taxi: ¿los conductores de Uber son “trabajadores” a la luz del derecho comunitario? *Revista de Derecho VLex*, 164, 1-7.
- Beltran, I (2018b). “Economía de las plataformas (platform economy) y contrato de trabajo”, XXIX Jornadas Catalanas de Derecho Social (8 y 9 de marzo de 2018, Barcelona). Available at <http://ignasibeltran.com/2018/02/07/economia-de-las-plataformas-platform-economy-y-contrato-de-trabajo-ponencia/> (Accessed: 15 December 2018).
- Biasi M. (2017). Dai pony express ai riders di Foodora. L’attualità del binomio subordinazione-autonomia (e del relativo metodo di indagine) quale alternativa all’affarrosa ricerca di inedite categorie. In: Zilio Grandi G., Biasi M. (eds.) *Commentario breve allo Statuto del lavoro autonomo e del lavoro agile*. Cedam: Padova, 67-91.
- Biasi M. (2018). Uno sguardo oltre confine: i “nuovi lavori” della gig economy. Potenzialità e limiti della comparazione, *Labour and Law Issues*, 4(2), C. 1-24.
- Carby-Hall J. (2018). Innovatory Forms of Employment in the Twenty-First Century versus Employment Status. In: Redinha M.R., Guimarães M.R., Liberal Fernandes F.(eds.) *The Sharing Economy: Legal Problems of a Permutations and Combinations Society*. Cambridge Scholars Publishing: Cambridge, 152-196.
- Casale G. (2011). The employment relationship: A general introduction. In: Casale G. (ed.) *The Employment Relationship: A Comparative Overview*. IL and Hart Publishing: Oxford/Geneva, 1–33.
- Cherry M.A. (2016). Beyond Misclassification: The Digital Transformation of Work, *Comparative Labour Law & Policy Journal*, 37(3), 544-577.

- Cherry M.A., Aloisi A. (2017). “Dependent Contractors” In the Gig Economy: A Comparative Approach, *American University Law Review*, 66(3), 635-689.
- Coin F., Marrone M. (2018). Ambivalence. Luci e ombre del lavoro digitale, *Economia e società regionale*, 1, 25-35.
- Collins H. (1990). Independent contractors and the challenge of vertical disintegration to employment protection laws, *Oxford Journal of Legal Studies*, 10, 353-380.
- Cunningham-Parmeter, K. (2016). From Amazon to Uber: Defining employment in the modern economy, *Boston University Law Review*, 96, 1672-1728.
- Davidov G. (2017). The status of Uber drivers: A purposive approach, *Spanish Labour Law and Employment Relations Journal*, 6(1-2), 6-15.
- Deakin S. (2018). Assessing the Italian Jobs Act: A Comment on Del Conte and Gramano, *Comparative Labor Law & Policy Journal*, 39(3), 607-613.
- Del Conte M., Gramano E. (2018). Looking to the Other Side of the Bench: The New Legal Status of Independent Contractors under the Italian Legal System, *Comparative Labor Law & Policy Journal*, 39(3), 579-605.
- Del Conte M., Razzolini G. (2018). La gig economy alla prova del giudice: la difficile reinterpretazione della fattispecie e degli indici denotativi, *Giornale di diritto del lavoro e delle relazioni industriali*, 159, 673-682.
- del Mar Ruiz Castillo M. (2010). El estatuto del trabajador autónomo. ¿Una intervención legal de largo alcance?, *Revista de Derecho Social*, 52, 27-65.
- De Simone A. (2014). L'importanza dei criteri distintivi sussidiari per la qualificazione del rapporto di lavoro, *Il diritto dei lavori*, VIII(1), 35-46.
- De Stefano V. (2016). The Rise of the «Just-in-Time Workforce»: On-Demand Work, Crowdfwork and Labour Protection in the «Gig economy», *Comparative Labour Law & Policy Journal*, 37(3), 471-504.
- De Stefano V., Aloisi A. (2018). *European Legal framework for digital labour platforms*. European Commission: Luxembourg.
- Dockès E. (2011). Notion de contrat de travail, *Droit social*, 546-557.
- Donini A. (2018). La libertà del lavoro sulle piattaforme digitali, *Rivista Italiana di Diritto del Lavoro*, II, 63-71.
- Fabre A. (2018). Les travailleurs des plateformes sont-ils des salariés?, *Droit social*, 547-558.

- Fernández López M.F. (2008), Los derechos fundamentales de los trabajadores autónomos económicamente dependientes, *Revista de Derecho Social*, 42, 13-44.
- Filì V. (2015). Le collaborazioni organizzate dal committente nel D.Lgs. n. 81/2015, *Il lavoro nella giurisprudenza*, 23(12), 1091-1100.
- Fleming P. (2017). *The Death of Homo Economicus*, Pluto Press: London.
- Freedland M., Prassl J. (2017). Employees, workers and the 'sharing economy'. Changing practices and changing concepts in The United Kingdom, *Spanish Labour Law and Employment Relations Journal*, 6(1-2), 16-29.
- Garofalo D. (2018). Lavoro, impresa e trasformazioni organizzative. In Aidlass, *Frammentazione organizzativa e lavoro: rapporti individuali e collettivi*. Giuffrè: Milano, 17-215.
- Garofalo M.G. (2008). Unità e pluralità del lavoro nel sistema costituzionale, *Giornale di diritto del lavoro e di relazioni industriali*, 117, 21-46.
- Geradin D. (2018). What Should EU Competition Policy do to Address the Concerns Raised by the Digital Platforms' Market Power? TILEC Discussion Paper, No. 2018-041.
- Goldkind L., McNutt J.G. (2019). Vampires in the Technological Mist: The Sharing Economy, Employment and the Quest for Economic Justice and Fairness in a Digital Future, *Ethics and Social Welfare*, 13, 51-63.
- Gramano E. (2019). Digitalisation and work: challenges from the platform-economy. Available at <https://doi.org/10.1080/21582041.2019.1572919> (Accessed: 15 February 2019).
- Hatzopoulos V. Roma S. (2017). Caring for sharing? The collaborative economy under EU law, *Common Market Law Review*, 54, 81-128.
- Huws U. (2014). *Labor in the Global Digital Economy: The Cybertariat Comes of Age*. New York University Press: New York.
- Huws U., Spencer N., Syrdal D., Holts K. (2017). *Work in the European Gig Economy*. Foundation for European Progressive Studies: Brussels.
- Ivanova M., Bronowicka J., Kocher E., Degner A. (2018). Foodora and Deliveroo: The App as a Boss?, WP Forschungsförderung, no. 107.
- Kenner J. (2019). Uber Drivers are 'Workers' – The Expanding Scope of the 'Worker' Concept in the UK's Gig Economy (December 1, 2018). In: Kenner J, Florczak I & Otto M (eds), *Precarious Work. The Challenge for Labour Law in Europe* (Edward Elgar, forthcoming). Available at SSRN: <https://ssrn.com/abstract=3312226> (Accessed: 1 February 2019).

- Lopez Balaguer M. (2018). Trabajo en plataformas digitales en España: primeras sentencias y primeras discrepancias, *Labour & Law Issues*, 4(2), C. 51-78.
- McGaughey E. (2018). Taylorism: when network technology meets corporate power, *Industrial Relations Journal*, 49(5-6), 459-472.
- Mercader Uguina J.R. (2017). Work and “platform economy”, *Spanish Labour Law and Employment Relations Journal*, 6(1-2), 4-5.
- Perulli A. (2018). Capitalismo delle piattaforme e diritto del lavoro. Verso un nuovo sistema di tutele? In: Perulli A. (ed), *Lavoro autonomo e capitalismo delle piattaforme*, Wolters Kluwer, Milano, 115-145.
- Pesole A., Urzì Brancati M.C, Fernández-Macías E., Biagi F., González Vázquez I. (2018). *Platform Workers in Europe*. Office of the European Union: Luxembourg.
- Prassl J. (2018). *Humans as services*. Oxford University Press: Oxford.
- Prassl J., Risak, M. (2016). Uber, Taskrabbit, and Co.: Platforms as Employers—Rethinking the Legal Analysis of Crowdwork, *Comparative Labor Law & Policy Journal*, 37(3), 618–651.
- Rogers B. (2016). Employment rights in the platform economy: Getting back to basics, *Harvard Law & Policy Review*, 10, 479-520.
- Sargeant M. (2017). The Gig Economy and the Future of Work, *E - Journal of International and Comparative Labour Studies*, 6(2), 1-12.
- Stanford J. (2017). The Resurgence of Gig Work: Historical and Theoretical Perspectives, *The Economic and Labour Relations Review*, 28(3), 382-401.
- Supiot A. (2000). Lavoro subordinato e lavoro autonomo, *Diritto delle relazioni industriali*, X (2), 217-239.
- Todolí-Signes A. (2017). *El trabajo en la era de la economía colaborativa*. Tirant lo Blanch: Valencia.
- Todolí-Signes A. (2018), Judgment designating Deliveroo ‘rider’ an employee and analysis of its impact on the ‘gig economy’, *Transfer*, 24(4), 487-490.
- Treu T. (2017). Rimedi e fattispecie a confronto con i lavoratori della Gig economy, WP CSDL E «Massimo D’Antona». int., no. 136.
- Tullini P. (2018). L’economia delle piattaforme e le sfide del diritto del lavoro, *Economia e società regionale*, 1, 36-51.
- Valant J. (2016). *A European agenda for the collaborative economy*. European Parliament Research Services: European Parliament.
- Van Den Bergh K. (2018). Plateformes numériques de mise au travail: mettre fin à une supercherie, *Revue de droit du travail*, 4, 318-325.

- Voza R. (2017). Il lavoro reso mediante piattaforme digitali tra qualificazione e regolazione, *Quaderni della Rivista giuridica del lavoro*, 2, 71-81.
- Weiss M. (2016). Digitalizzazione: sfide e prospettive per il diritto del lavoro, *Diritto delle relazioni industriali*, XXVI(3), 651-663.
- Zoppoli A. (2016). La collaborazione eterorganizzata: fattispecie e disciplina, WP CSDLE «Massimo D'Antona».it., no. 296.

CHAPTER III

WORKING WITH AN INTERNET PLATFORM: FACING OLD AND NEW RISKS

STEFANO CAFFIO

1. Introductory Remarks: An Overview of the Risks of Platform Work within (Traditional) Labour Law Schemes

This chapter aims to analyse some of the risks arising from work performed through an Internet platform. For this study, it is first necessary to clarify the meaning of the term “working with an Internet platform” referred to here. In this regard, as is well known, there is not consensus around the concept of ‘platform work’. As EU-OSHA has highlighted (EU-OSHA, 2017, 8), this is mainly due to a remarkable conceptual confusion on the definition of several phenomena characterised by the use of Internet platforms which are sometimes connected to or overlap each other, concurrently showing a number of differences. In order to define the boundaries of the present research, the Eurofound’s definition of platform work will be used. According to it, platform work “*refers to an employment form that uses a platform to enable organisations or individuals to access other organisations or individuals to solve specific problems or to provide specific services in exchange for payment*” (Eurofound, 2017, 4). This definition includes online platforms matching supply and demand for paid labour, regardless of whether labour is “provided through” or “mediated by” a platform, as well as irrespective of both the legal nature of the relationship (employed or self-employed) and some specific features of the work provided (e.g.: digital or manual, in-house or outsourced, high- or low-skilled, on or off-site, large- or small-scale, permanent or temporary). However, only platforms on which work is exchanged for payment will be considered, by focusing on its two main types, i.e. on-demand work and crowd work.

As is now known, convergence exists, at the current state of knowledge, around the definition of these two ways of working through the platform. As for on-demand work, workers are charmed “via the app” in providing end users (usually consumers) with traditional services like transportation, cleaning, delivery (Uber, Lyft, Taskrabbit, Deliveroo, Foodora). In crowd work, workers perform their job or (micro) tasks through online platforms, such as Amazon Mechanical Turk and Crowdfunder (De Stefano V., 2016, 2).

The purpose of this study is not to reconstruct the features of this complex and multifaceted phenomenon. For a close examination of these aspects, reference should be made to the already extensive literature on this subject developed by academics (Felstiner A., 2011, 143 ff.; De Stefano V., 2016a; Sprague R., 2015; Aloisi A., 2016, p. 656 ff. Tullini P., 2016, pp. 748 ff; Garofalo D., 2017, p. 89 ff.;), as well as by international organizations (De Stefano V., 2016b) and EU institutions (Drahokoupil J., Fabo B., 2016; IL 2018). This paper, among the manifold issues challenging regulators, will focus on some of the risks arising from performing work according to the modalities falling into the definition referred to here.

Concerning the concept of “risk”, some preliminary specifications are necessary. As many studies have already underlined, working through/with a platform exposes individuals to numerous risks. Some of them are tightly connected to the accomplishment of work performance, that is, working conditions. Others, like the former, result from the fact that work is performed using an online platform, but unlike these, they relate to the total lack or the insufficiency of social security protective measures. The second category of risks falls outside the scope of this study (see Carchio C. chap. V and Fili V. chap. VI, in this book). As for the first one, we can refer to the OSH risks as well as those concerning workers’ freedom and dignity as a result of the potential strengthening of control over workers’ performance by employers and/or users, due to the use of new information technologies. The consideration of this second aspect opens up a further problematic front, which is the need to ensure the protection of workers’ data, against abuse or misuse.

In this perspective, it should be considered that, compared to the traditional dual nature of working relationships, in platform work, there is the additional complication of the presence of a third party. As is well known, this is not a novelty, since it has been dealt with in the legal systems governing temporary agency work for some time now. However, the platform economy has at least two substantial differences when compared to the agency work pattern. In agency work, the nature of the relationship is certain, since it is usually salaried work (this is true in EU

Member States, depending on national legislation implementing Directive 2008/104/EU). This is not the case in platform work, and the risk of misclassifying the employment relationship is one of the most problematic issues preventing or limiting the recognition of the workers' right to social protection measures when work is performed through online platforms.

The second and crucial element of differentiation is the certainty of roles, obligations, rights and responsibilities of each party involved in temporary agency work. On the contrary, in platform work, in most cases, the difficulty of establishing the existence and the identity of the employer (Prassl J., Risak M., 2016, p. 15 ff.), negatively affects the position of workers, making it equally hard to establish the distribution of duties and responsibilities between all parties: the "platform" (*rectius*, its referents), the users/clients and the workers/employees.

The three types of risk above mentioned will be dealt with in a separate section of this paper. Moreover, although it is mainly a social security issue, a specific section will also be devoted to insurance against accidents at work and occupational diseases. This is because of the close link between this issue and OSH. While the latter consists of a multifaceted set of protection aimed at preventing risks for the health of workers, the former is the measure that *should* be taken – there is always room for doubt in the case of the platform economy – if those same risks result in damaging events to the detriment of workers.

However, before proceeding with the discussion of the problems relating to the risk categories referred to above, it is appropriate to make some further preliminary clarifications. It should be noted that the types of risks covered by this paper, especially those related to OSH, are already well known because the activities carried out with the help of new technologies are the same as those performed without the use of digital platforms. These are risk categories that have already been widely studied both by academia and by national, European and international institutions. By way of example, the risks of accidents or continued and invasive remote control over workers' performance in the delivery or peer-to-peer ridesharing sectors are not different if a digital platform is used in work organisation. Precisely because of technological evolution, their frequency and strength can be changed. In this sense, it can be said that new technologies produce further risks in addition to those already known.

What has changed is the context in which those same tasks (and the entailing risks) now occur, as a result of the impact produced by the constant evolution of information technologies in work organisation patterns and traditional legal schemes for labour supply. In turn, the critical issues generated in this way – uncertainty about both the legal

nature of the relationships, and the correct allocation of rights, obligations and responsibilities between the parties involved – make it difficult to determine not only and not so much the specific risks to which platform workers are exposed, but also how to deal with them to ensure minimum social protection, which now is totally or partially lacking, depending on the national legal system.

In this perspective, the purpose of the present study is to analyse the risks referred to above in the new context, in order to identify the responses to the current gaps that national, European and international legislation can ensure, and the possible corrective or innovative legislative action to take, where appropriate.

2. OSH Risks for Platform Workers: European and National Regulatory Frameworks

With regard to the health and safety of platform workers, and as highlighted by EU-OSH, a distinction must be made between the general risks, to which those who use online platforms to carry out their tasks may be exposed, and specific risks, related to both the nature (either physical/off-line or digital/online) and the type of task performed.

As for general risks, it would be more appropriate to refer to them as factors affecting (specific) health and safety risks. This is to underline that, rather than risks in a technical sense (e.g. exposure to chemical agents or road accidents), general risks are circumstances that characterise the work carried out on or by the platform and that can aggravate their seriousness, with repercussions on the rates of work-related accidents, as shown by the statistics relating to non-standard workers' injuries (e.g. agency workers and temporary workers).

The first of these factors is the absence of a “common” space, i.e. a place shared with colleagues and organised by the employer where work is performed: depending on the type of work, the service is carried out through private means (cars, bicycles, and mopeds) or in private houses. This circumstance has two significant implications. The first concerns the impossibility of verifying the compliance of the environment and work equipment with the requirements prescribed by legislation, as well as the adoption of those preventive measures established by OSH legislation, where applicable (this aspect is discussed further on in this section). The second implication is that the absence of a shared place can lead to isolation, since these are mostly tasks performed individually, generally without any contact or time for exchanges or discussions with colleagues.

It is thus evident that the typical characteristics of platform work can trigger the emergence of psycho-social issues.

Moreover, with regard to psycho-social risks, a further, and hazardous, complication is represented by the pace of work. The latter can be particularly pressing due to both the intense competition among workers triggered by how the online platform operates and the need to work as much as possible in view of the low remuneration for the tasks assigned. In order to ensure preventive protection for the health of workers, these elements can influence well-being in two ways. On the one hand, it should be pointed out that work intensification is in itself a harbinger of risks for workers' psycho-physical integrity (on this aspect, reference should be made to the rationale of the EU and national regulation of working time). On the other hand, the competition for as many job opportunities as possible, together with the psychological pressures induced by the rating mechanisms – a sort of performance anxiety resulting from the fear of losing one's job – can contribute to generating stress, thus causing risks from work-related stress.

Last but not least, the young age of most platform-workers should be taken into account as an additional risk factor, due to their (total) lack of experience and their poor knowledge of the rules and measures for the prevention of the specific hazards associated with the nature of the tasks performed. As shown by Eurofound (Florisson R., Mandl I., 2017, 21), between 42% (in Austria and the Netherlands) and 59% (in Switzerland) of platform workers are under 35 years of age.

All the elements briefly described above constitute cross-cutting risk elements, which incrementally influence the extent of the specific risks characterising the activities carried out, which are not different from those reported when the same activities are performed according to traditional work organization models, tools and relationships. In the light of these considerations, all EU directives concerning health and safety – without prejudice to any particularities in place in each national legal system implementing EU legislation – should apply to platform workers. This includes the framework Directive 89/391/EEC and the specific directives adopted under Article 16(1) thereof, the principles of protection against psychosocial risks that derive from the framework directive itself (see EU-OSHA, 2014, 4 ff.) and the EU framework agreement on work-related stress signed between EU level social partners in 2004. However, the applicability of this legislation to platform workers is hampered by the subjective field of intervention of these rules. They are mainly conceived to involve salaried work and to deal with the employer's obligations to prevent risks to the health and safety of employees (see Article 3(a) of

Directive 89/391/EEC, which includes employees, apprentices and trainees within the definition of a ‘worker’). On the contrary, most relationships established in the platform economy are of a different nature, which is usually autonomous.

From this perspective, it should be noted that, on the one hand, it is true thatOSH regulations do not exclude the self-employed from prevention and protection measures against the risks arising from the activities they carry out. On the other hand, it is also undeniable that the implementation of most of these measures is left to (self-employed) workers themselves, even in terms of the relevant economic burden. This is the case with health and safety training, which is for employees an employer’s obligation, who also bears the relating cost (see Article 12(4) of Directive 89/391/EEC). The rule of cost exclusion for “workers” (as defined in Directive 89/391/EEC, i.e. employees), is a general principle characterizing the full implementation of the measures necessary to ensure safe working conditions.

On the contrary, self-employed workers have to deal with security measures, such as the purchase of personal protective equipment and health monitoring, on their own. The same conclusion is reached with reference to other preventive obligations provided for by health and safety legislation, which, although not necessarily involving an explicit or immediately quantifiable monetary cost, require availability of resources (time, space), and technical knowledge. This specifically refers to those steps aimed at adapting as much as possible work to the peculiarities of the individual. Among them, mention can be made of the design and construction of ergonomic workstations, the choice of equipment and / or equipment for the execution of tasks, the definition of working methods also with regard to the pace and duration or timing of the performance (see Art. 6(2)(d) of Directive 89/391/EEC). Depending on the nature of the activity the person is engaged for through online platforms, one or more of the prevention measures described may not be implemented. This occurs because platform workers are not able to self-prepare the prevention measures required by law, as a result of the low value of remuneration received, the lack of knowledge of the rules, the discontinuity of work and the concise duration of the relationship (workers are often recruited for a single task).

As an example, consider small building works carried out in private homes, or the laying of a floor. In this respect, by virtue of the definitions of a “client” and a “self-employed person” contained in Directive 1992/57/EEC (Article 2(b) and (d) respectively), the individual who is assigned work as a self-employed “by” or “through” an online platform,

should carry out the activity in accordance with the requirements of that sectoral Directive. However, legislation on safety at work, particularly in the construction sector and with specific reference to works or services provided by individual self-employed workers, without the support of any other workforce, already shows a certain degree of ineffectiveness (although with significant differences according to national socio-economic realities). This holds true when work is carried out by professional operators, that is to say by those who habitually carry out that activity. In light of this, and for the reasons described above, it can be expected that the ineffectiveness of these rules will be more pronounced in the platform economy. Compounding the picture are the obstacles to possible controls by the supervisory bodies (e.g. the Labour Inspectorate or the equivalent body performing health and safety inspection functions). This may derive from both the nature of the places where work is performed (private houses sometimes coinciding with the home of the worker, sometimes with that of the customer/user), (Quinlan M., 2015, 8), and as a result of the high difficulty (if not the very impossibility) of third parties to “intercept” the work acquired through online platform.

Similar conclusions can be reached with reference to other types of activities, such as the assembly of furniture, cleaning, home care and gardening work or, remote work – either online or offline – performed using computer equipment chosen by the worker and workstations created within her/his own home, with a high probability of non-compliance with sector-specific health and safety regulations.

Putting together the factors considered so far, it is conceivable that there will be a possible increase in the injury rates for platform workers compared to those reported when the same activities are carried out by workers in an undertaking, when they are directly employed by the company. Still on this point, it can be argued that companies owning the platforms – when their scope is not limited to intermediation between workers and users – and stipulating contracts with self-employed workers, fully pass on to the workers the liability and costs arising from the failure to comply with their health and safety obligations (De Stefano, 2016, 12). Furthermore, this transfer of both risks and related costs becomes complete if failure to comply with health and safety obligations, in turn, leads to an injury. This will be discussed in more detail in section 5.

From another point of view, we cannot neglect the different organizational modalities with which online platforms offer services and, therefore, the different role that they can play in the relationship with both workers and users as well as in connecting them. However, whatever this role may be, whether as a simple intermediary or as an entity responsible

for the organization and management of the work of others, current legislation proves to be flawed, unsuitable to providing adequate responses to the "demand for security", leaving companies completely (or almost completely) without any responsibilities. This is the consequence of the fact that labour legislation is still based on the subordination/autonomy dichotomy and, more broadly, it is still too much anchored to the classification of the relationship. This is demonstrated by the EU Directive on transparent and predictable working conditions in the European Union, finally adopted on 16 April 2019, which applies only to "every worker who has an employment contract or employment relationship" (see recital 8 and article 1(2) of the EU Directive). These aspects will be discussed in the final remarks.

The challenges arising from the platform economy remain almost the same even in those legal systems in which there is a third intermediate category between the employed and the self-employed. As is well known, this relationship does not fall into either of the two main categories, since it presents only some characteristics of both, without, however, this being enough to fit into one of the two general types. Workers engaged with similar arrangements are generally classified as independent, but legislation usually gives them minimum social protection and some of the benefits granted to employees. This approach is used in the UK, where the category of "workers" is used, in Germany, where workers falling in the "third" category are defined as "similar-employees" (Weiss M., 2018, 720) and in Italy with regard to so-called "coordinated and continuous collaborations", which is the type of relationship into which Foodora, a well-known company operating in the food delivery sector, its riders fall. The company has provided its workers, among other things, with personal protective equipment, including helmets and signage lights for bicycles. According to Italian national legislation implementing EU OSH Directives, health and safety regulations apply to coordinated and continuous collaborators where work is carried out in the workplace of the client, who is a professional or an entrepreneur (see art. 3, par. 7, L. v. Decree no. 81/2008).

With very few exceptions, and in view of the way in which riders perform their services, the company would not be obliged to fulfil any health and safety obligations towards its own "collaborators". These obligations would be entirely borne by the riders themselves. However, around the classification of the relationship of Foodora's riders, a judicial case has arisen in which the workers asked for recognition of the subordinate nature of their employment status. In the first instance, the claim was considered unfounded, while it was partially upheld by the

Court of Appeal (Turin, 11 April 2018, no. 778). In this second judgment, the Court did not classify the relationship as a subordinate one, but it found that a provision introduced in 2015 (art. 2, L.ve Decree no. 81/2015) was applicable. Under that rule, when the performance of the coordinated collaborators is also 'hetero-organized' by the client (with reference to time and place of work), the same protection provided for employees is afforded to them, although limited to certain aspects, such as health and safety, pay, time limits, holidays and social security (but not dismissals).

The Italian Foodora riders affair highlights the weak nature of an approach based on the introduction of the third category of the work relationship, which would like to be also followed in other countries, such as the USA (De Stefano V., 2016, 18 ff.; EU-OSHA, 2017, 21). It rests on the link between the legal basis of the obligations incumbent on undertakings – and the recognition of a minimum level of protection – and the classification of the work relationship. This legal framework appears inadequate because, as seen in the Italian Foodora case (but the same applies to other lawsuits dealt with by tribunals in other countries, (Sprague R. 2016, p. 6 ff.; Cherry M.A., 2016, p. 3 ff.; Treu T., 2017, p. 4 ff.)), the allocation of the duties and rights to the parties of the contract, beyond the *nomen juris* given by them to the agreement, risks remaining dependent upon the discretionary assessment of the courts. This is not the context to address the issue of the effectiveness and validity of the “remedial techniques” used mainly by the courts of common law countries. However, some considerations on the matter will be made in the concluding remarks.

Furthermore, with a view to guaranteeing compliance with a minimum standard of working conditions, this solution does not take into account certain objective features of platform work, that, as said above, significantly exacerbate the specific risks to which workers are exposed as a result of their activity.

3. The Twofold Source of Control Powers: Risks, Protection and Rights in Current Legislation

As mentioned in the introduction, another area in which the digital economy produces, in addition to indisputable beneficial effects, also new risks, is work control.

The advent of digitalisation has made it possible to strengthen the tools available to employers with regard to the organisation of work and, with specific reference to control, to carry out even at a distance continuous checks on the work performed. However, this in itself may not be regarded

as a novelty in the absolute sense, since technological evolution has always led to an expansion of the prerogatives of employers (as was the case when video surveillance systems replacing the "guardians" were developed).

The fact that in the food-delivery sector it is possible, through apps installed on smartphones or tablets, to track delivery times and the route taken by the rider, can be seen as an evolution of the introduction of GPS systems for the purposes of tracking the routes of drivers in the activity of express couriers.

A discontinuity with the past is mainly found in the presence of a third party with respect to the platform operator, i.e. the end user, who expresses an evaluation of the service also through feedback on the performance of the worker. In the digital (labour) market created through platforms, therefore, there are at least two means through which the worker is controlled.

The impact of this dual control on worker tends to be more marked where the activity of the digital platform is not that of a mere intermediary but it is qualified as a service. One example of this is the Uber Systems Spain case handed down by the Court of Justice of the European Union (EUCJ, 20 December 2017, aff. C-434/15, ECLI:EU:C:2017:981).

As a result of the interaction of the remote control tools made possible by information technologies and the review process offered by the user, the worker provides the platform with a large amount of information. Formally, the worker is aware of these procedures as a result of the information and specific clauses contained in the service contracts signed with the platforms. However, as the ILO has pointed out (ILO, 2018, p. 22), documents relating to terms of service are often long and complex, contain references to other documents and are therefore not easy to understand.

In any case, the information collected is then processed through an algorithm that unveils a series of additional information on the behaviour of the worker until it reaches a reputational rating, measured by the attribution of stars or points, depending on the system chosen by the platform. This way, the platform arrives at a real profiling of the individual that can negatively affect future job opportunities through the same platform to which she/he adheres when the "score" falls below a certain threshold. As for on-demand platform work, the negative effects may consist in accessing a smaller number of assignments, or to low-paid assignments, in the suspension or deactivation of the account (Cherry, 2016, p. 21), a sort of equivalent, respectively, of disciplinary sanctions and dismissal for the employee. As for crowdsourcing, the reviewing

and/or rating mechanisms work in a different way, since they start from the approval or the rejection of the work done. In case of rejection, the requester does not pay the worker who provided the service. So, to all the risks mentioned dealing with the on-demand reviewing mechanism, the one relating to non-payment for the work done should also be included (Felstiner A., 2011, 156). The possibility for workers to know the reasons of rejection by getting justifications from the requesters, if provided for, is often ineffective, as demonstrated by the case of AMT described by Silberman and Irani (Silberman M. S., Irani L., 2016, p. 7-8). On this platform, the obligation to justify the rejection consists in filling in the space of the form specifically dedicated to this feedback test, but this field can be filled in with just an "x", or with any other character. As a result, requesters may reject the work without supplying any reason, or if it exists, without disclosing it to the service provider (i.e. the worker).

However, this is not surprising: the possibility for the platform to consolidate its position in the market through the enlargement of the catchment area, mainly depends on the evaluation made by users. In addition, it should be noted that, especially with regard to peer-to-peer transport services (such as Uber and Lyft), but the same can apply to domestic cleaning or family care services, companies owning the platform have to guarantee quality and safety to users.

To achieve this objective, they need to recruit workers whose reliability is assessed in advance, similarly to what happens in any staff selection. From this point of view, however, the assimilation to the recruitment practices entrusted to third parties in the traditional organizational models stops here. In fact, in work carried out through digital platforms, first of all, data and information collected, strictly speaking, are not directly (and sometimes even indirectly) indispensable for the assessment of the professional aptitude of the individual and the acquisition of which, according to national legislation, could be prohibited. Lyft checks the criminal records of its drivers (Topo A., 2018, 462). Moreover, in platform work, the final user participates in the selection activity, even though he/she is a person who has a direct interest that coincides with that of the service provider and whose judgment could also be influenced by factors such as personal beliefs about race, religion, gender. Even if the algorithms avoid using directly such variables (because, at least formally, it is forbidden from the law in most countries), they are potentially capable of producing their own discriminatory effects to the detriment of certain groups of workers through a bad performance evaluation (Einav et al., 2016, p. 629). Conversely, the selection body (at least in theory) has a neutral position with respect to both those entrusted

with the task and the aspiring worker. On the one hand, rating mechanisms have been regarded as a valuable tool for both companies and platform users to solve the so-called "lemon problem" arising from the information asymmetries inherent in the markets (Thierer A. and others, 2015): rating systems filter out workers (Irani L., Silberman M.S., 2013, p. 625). On the other hand, "real-time" control, both in the course of the work performance (Uber's users can submit complaints even during the race in case of different routes from those agreed upon), and *ex post*, through the acquisition of feedback from the users, proves to be particularly pervasive towards the worker. This double monitoring allows one to collect and process a large amount of personal data, placing, however, the worker in a sort of permanent probation (Prassl J., Risak M., 2020). A further, indirect negative effect is the exacerbated competition that can trigger among workers themselves, prompting them to work at a high rate, which exposes them to greater risks of work-related stress and injury.

In this synthetically described context, the problematic profiles that emerge concern both the boundaries within which the platform operator can move in relation to the remote control of workers' performance and the quality and quantity of data collected through the mechanisms of control, both *in itinere* and *ex post*. In view of the close connection with issues relating to the protection of personal data, this second aspect will be dealt with in the next section, while the first will be examined in the current one.

As is well known, control is one of the employers' traditional powers. For several decades, at least in countries with advanced (labour) legislation, there have been precise and strict rules regarding the possibility for the employer to carry out these practices, through audio-visual equipment and installations. In this regard, according to national regulations, the use of such measures has been limited to specific purposes (e.g. reasons of protection of the company's assets or safety in the workplace) and in any case conditioned upon compliance with certain guarantees, sometimes including the direct involvement of the social partners through negotiation on a decentralised level (i.e. the company). All of this was done with the intention of preventing that the surveillance systems became instruments of constant control over the activity carried out by the worker and, therefore, detrimental to their freedom and dignity. The development of technologies has induced national legislators to adopt the regulations in force, precisely to ensure that the greater potential made possible by digitalisation does not negatively affect well-being at work.

However – and leaving aside for the moment the regulatory framework concerning personal data protection – it should be stressed that this

legislation revolves around employment. Consequently, the same arguments made for health and safety issues apply, in that this regulation is not applicable to contracts concluded in the context of the activity carried out through digital platforms, as workers are in most cases classified as self-employed or independent contractors.

From this point of view, however, the paradox into which these workers fall as a result of their qualification in the agreements signed with the platforms for which they provide services must be stressed. Platform workers are subject to greater control than those hired as employees, since for the latter there are a series of guarantees, which as seen are not applicable to the former. Nevertheless, even this circumstance was not decisive for the judicial recognition of the subordinate nature of the relationship. This is demonstrated by the wavering judgements of the national courts, that assess these cases still referring to indices and legal categories clearly not suitable for the changed context of economic relations in the digital age.

4. The Protection of Platform Workers with regard to the Processing of Personal Data in light of Regulation (EU) 2016/679

The legality of the control systems that apply to work carried out through digital platforms must now be evaluated – at least with reference to entities and natural persons operating in EU Member States – through the lens of Regulation (EU) 2016/679 which, as is well known, repealed Directive 95/46/EC.

Article 88 of the Regulation is dedicated to the processing of data in a working context. However, it should be stressed immediately that these rules apply only to employees. Therefore, at least as far as remote control is concerned – i.e. the traceability of routes – no protection is guaranteed to the self-employed by the above-mentioned provision.

Nevertheless, some of the provisions of the European Regulation are of a general nature and, as such, protect the position of any person within EU territory, even where the processing of data is carried out by a natural or legal person established outside the territory of the Union, if the processing activities are related to: “(a) the offering of goods or services, irrespective of whether a payment of the data subject is required, to such data subjects in the Union; or (b) the monitoring of their behaviour as far as their behaviour takes place within the Union” (Art. 2, paragraph 2, Reg. (EU) 2016/679). These rules should be read in light of three other regulatory provisions. The first concerns the definition of “profiling”

contained in Article 4.4 of the Regulation, which includes any automated personal data process intended “to analyse or predict aspects concerning that natural person's performance at work”. The second is laid down in Article 22, which establishes the right of the individual not to be subject to any decision-making process based solely on the automated processing of her/his data. This general prohibition does not apply when the automated processing is necessary “for entering into, or performance of, a contract between the data subject and a data controller” (art. 22, par. 2(a), Reg.). However, the legality of the automated decision-making process regarding the execution of a contract is conditioned by the obligation on the data controller to prepare “suitable measures to safeguard the data subject's rights and freedoms and legitimate interests”. These include, in any case, “the right to obtain human intervention on the part of the controller, to express his or her point of view and to contest the decision” (art. 22, par. 3, Reg.).

In view of this regulatory framework, it can be said that decisions to suspend or deactivate the account or to allocate lower fees taken by the digital platform on the basis of the negative reviews of the worker detected through the customer-evaluation based system, do not comply with EU legislation if they are the result of an exclusive elaboration by algorithms. It is necessary for the worker, even if self-employed, to be guaranteed a “human” assessment or the right to be heard.

This form of protection is necessary because of the large quantities of data that can be collected in relation to the work performed. As previously said (see section no. 3), these data are processed by an algorithm which, at the end of the process, gives back the platform businesses new information, different from that collected and capable of affecting the position of individual workers, especially in terms of job opportunities. In addition, it should be noted that it is impossible for workers to know exactly the criteria for processing the data and, therefore, the specific relevance that the algorithm gives to each type of information collected.

The extent to which this measure can be effective in terms of protection is not easy to predict at the moment, as too little time has elapsed since the entry into force of the Regulation of 25 May 2018. Secondly, it should be pointed out that a further factor of uncertainty in terms of the effectiveness of the new provisions on the processing of personal data is the probable lack of awareness of these rights on the part of the workers.

However, even though these provisions are far from the more reliable regulatory apparatus established by art. 88 of the Regulation for employees, they are principles of general application having mandatory

nature. Consequently, a reference to them must be obligatorily included in service contracts which, otherwise, might lack clarity.

From a different perspective, it should be noted that the obligations laid down in the Regulation no. 679/2016 are consistent with one of the lines of action identified by the ILD in order to set minimum standards of protection for those who work on or through digital platforms.

In this regard, the ILD, with specific reference to the worker account and profile control, highlights the need to achieve "more worker-friendly terms of service" (ILD, 2018, 101). On this point, the ILD encourages the introduction of clauses in service contracts that establish the following: the obligation for platform owners to provide a clear, understandable reason to workers whose accounts are closed; the workers' right to receive a payout for all funds in their worker account in the event of a deletion; the possibility for them to download and archive a human and machine-readable copy of their work history, including profile content, should a deletion take place.

5. The Risks of Occupational Illness and Workplace Injuries: What kind of Protection?

As said in the section dedicated to health and safety at work prevention, some characteristics of digital platform work tend to exacerbate the risks related to the psycho-physical integrity of the worker, especially when the activities are location-based (transportation, delivery, household services, local micro tasking). In this regard, it was noted that the regulatory framework is inadequate, as directed primarily to the protection of employees, through a dense network of obligations imposed on the employer. Yet self-employed workers, who are also subject to specific obligations under OSH legislation, have to deal with them on their own account, also from an economic point of view.

The picture is not different with regard to the protection in the event of an injury. Self-employed workers, such as those working on or through digital platforms, should provide some form of occupational accident insurance at their own expense. One example of this is the clause contained in the terms and conditions of service that workers sign with Amazon Mechanical Turk, under which they are "not eligible to recover workers' compensation benefits in the event of injury" (ILD, 2018, 59).

The effect of these contractual agreements is that on-demand workers, in most cases, are not covered by any benefits in the event of an accident, unless they take out insurance on their own. However, this seems highly unlikely due to both the generally low level of remuneration and the

insufficient availability of work (ILO, 2018, 62). Therefore, the worker has to bear the damage resulting from loss of earnings due to the temporarily reduced capacity to work. At any rate, even if the worker was able to pay for an insurance covering work accidents, he would still risk suffering a reduction or exclusion from the benefit if he did not adopt the preventive measures required by law. As said, this is not an unlikely event for platform workers. The low level of remuneration has an impact on all other working conditions. So, this seems to be the main reason why the ILO encourages the introduction in the arrangements between workers and digital platforms of fees in line with the minimum wages set by collective bargaining or by law, in accordance with national legal frameworks.

Despite the fact that the transfer of risk from companies to workers continues to be the rule in the platform economy – also with regard to insurance for accidents at work – some signs of a possible reversal of the trend begin to arise. In France, under Law no. 1088 of 8 August 2016, the obligation for online platforms to provide insurance coverage for accidents at work, was introduced for the benefit of the self-employed who are in a condition of technical and economic dependence towards the platform itself.

6. Concluding Remarks

The classification of the relationship as a legal prerequisite for the application of minimum standards of protection for platform workers is an obstacle in all aspects considered in this brief paper. Far from demonising the platform economy, the analysis perspective adopted in this paper highlighted some of the existing limitations in legislation. Faced with a new and ever-changing phenomenon, labour law does not yet seem ready to play its traditional role of protection against insecurity and risk (Barbera M., 2018, 409).

In this context, the regulatory options proposed by research to address the challenges posed by the platform economy are:

- a) rethinking the definition of an employee so as to include online platform work;
- b) defining an intermediate category between salaried and self-employed workers, guaranteeing a series of specific rights;
- c) decoupling the application of existing regulations from the employment status;
- d) introducing sector-specific regulations (Weiss M., 2018, 719; EU-SHA, 2017, 18 – 23).

The first two lines of action move along the direction of manipulating current labour legal schemes. As for the first one, it is based on the extension of existing definitions in national legislation. This approach may give rise to further issues in so far as the phenomenon of the platform economy is quite motley. It would, therefore, imply the need to identify defining parameters that would certainly cover all the forms in which, in reality, we have known about the phenomenon so far. The other point is that, currently, we are not able to determine the possible evolution of the models of work acquisition, due to the further (and maybe upcoming) developments of information technologies. As noted in a study of 2016, "our understanding of these platforms is still in its infancy" (Drahokoupil J., Fabro B., 2016, 1) with the consequent risk of rapid obsolescence of the regulatory changes. This would also explain the wait-and-see trend of national legislators (Dagnino E., 2015, 18).

However, the introduction of an intermediate "third" category is also an option that is by no means free of critical aspects, especially as it would increase uncertainty about the classification of the relationship with negative effects also on judicial litigation. In this sense, the example of Italy's para-subordinate employment is emblematic (De Stefano V., 2016, 19). Nevertheless, such a regulatory policy is considered to be the best solution in some countries: this is the case in the USA, where some scholars are calling for specific legislative action to be taken in this direction (Harris, S.; Krueger, A., 2015, p. 17 ff.).

More convincing, however, appears to be an approach based on a combination of the last two regulatory options previously mentioned. It should be stressed that the provision of common and compulsory minimum standards, to be ensured for all workers regardless of the legal nature of the relationship, makes it possible, first and foremost, to absorb better the impact that future developments in technologies will have on work organization models. From this point of view, it cannot be denied that issues of classification of relationships arise whenever new negotiating patterns appear on the scene because they are not regulated by the legal system. Faced with the challenges constantly arising from these dynamics induced by socio-economic evolution, it is clear that the introduction of minimum (or core) labour standards, applied irrespective of the parties' contractual arrangements, would allow one to bypass or at least to reduce the judicial dispute due to problems of misclassification. In turn, this result would be consequential to the reduction of the social protection gap between employees and all other regulated or atypical contracts. Moreover, it is precisely the reduction of this gap that would produce a compressing effect on economic convenience and, therefore, on

the propensity of businesses (e.g. those managing the platforms) to "flee" towards self-employment – which is possible even in the presence of aspects hinting at subordination – or, worse, to move towards unexplored contractual dimensions.

This approach should be accompanied by sector-specific regulation, suitable for taking into account the peculiarities of the sectors of activity and the different ways in which relationships in the platform economy are realised. This second line of action seems necessary, especially with regard to health and safety in the workplace, with respect to which the current regulatory framework allocates the relative obligations almost entirely on the self-employed. However, similar considerations also apply to the protection of workers' privacy with regard to automated data processing. In such a perspective, it would be preferable to introduce different disciplines because of the different roles that platforms can play in the matching of supply and demand for services, with greater duties to be borne by the businesses when the activity actually performed is not limited to the mere intermediation between (aspiring) workers and end users. Furthermore, diversifications could be envisaged when the end user is not a consumer but an undertaking or a professional. In the same perspective of both risk sharing and the associated costs to prevent these risks, the advisability of introducing mechanisms for co-responsibility of the end user of the service should be considered (Voza R. 2017, 15), not unlike the mechanisms of joint and several liability for remuneration, social security and tax obligations already adopted for some time in many national legal systems. From this point of view, the mechanisms of joint and several liabilities for remuneration, social security and tax obligations already adopted in many national legal systems could be taken as a reference.

The basic idea is that those who economically exploit the work of others cannot remain completely without responsibility, fully appropriating the benefits but without bearing the social costs (even if only potential) that their organizational choices produce.

Finally, it should be noted in this regard that the EU Directive on transparent and predictable working conditions in the European Union, adopted on 16 April 2019, contains significant innovations with regard to the employer's obligation to provide information on the conditions governing the employment relationship. In more detail, if the work organization is entirely or mostly unpredictable, it is laid down that the employer is obliged to inform the worker of "the amount of guaranteed paid hours and the remuneration for the work performed in addition to those guaranteed hours' as well as of 'the reference hours and days during

which the worker may be required to work' and 'the minimum notice period to which the worker is entitled before the commencement of an assignment and, where appropriate, the time-limit for cancellation' (Art. 2(2) of the Directive). 4(2)(m)(i), (ii) and (iii) respectively of the Directive). In addition, if the employer fails to comply with one or both of the last two conditions described (points (ii) and (iii)), the worker is entitled to lawfully refuse the assignment (Art. 10(1) and (2) of the Directive). But that is not all, because with an innovative provision, it is established that if the employer cancels an assignment beyond a reasonable period of notice established by law or collective agreements (according to the national legal system), the worker is entitled to compensation (Art. 10, paragraph 3, of the Directive). Specific provisions to prevent abuse are then laid down for on-demand contracts. In this respect, for example, it is foreseen that Member States, when implementing European legislation, will establish restrictions on the use of on-demand contracts as well as presumptions of the existence of employment contracts with a minimum amount of paid hours, on the basis of the hours actually worked over a given period of time (Art. 11 of the Directive).

As can be seen, these provisions would be well suited to the situation of on-demand workers "via app", with foreseeable positive effects also in terms of reducing the risks of work-related stress and the associated effects on other health and safety risks related to work performance (see section 2 above). However, in most cases these rules will not apply to platform workers as a result of the restrictions on the scope of the new European directive. Although it takes account of developments in digitization in terms of the emergence of new forms of work which "differ significantly from traditional employment relationships" in terms of predictability, "creating uncertainty as to the social protection and rights applicable to the workers concerned" (see recital 4, preamble of the directive), the Directive limits its scope to employed persons only.

This is apparent even before the provision specifically laid down for this purpose (Art. 1(2) of the Directive). For example, recital 8 not only explicitly excludes self-employed persons but also adds in a pleonastic way that the directive should apply to false self-employment relationships (see recital 8, preamble to the directive).

In this respect, the European directive could provide a good opportunity to establish a minimum set of common rules for all workers, regardless of the legal scheme of their relationship. However, regulators have opted for a more traditional approach, which once again risks leaving out platform workers hired mainly as self-employed workers.

References

- Aloisi A. (2016), *Commoditized workers: case study, research on labour issues arising from “on-demand/gig economy” platform*, *CLLPJ*, vol. 37, n. 3, 656 – 690.
- Barbera M. (2018), *Impresa, lavoro e non lavoro nell’economia digitale, fra differenziazione e universalismo delle tutele*, *DLRI*, pp. 403 - 422
- Cherry M.A. (2016), *Beyond misclassification: the digital transformation of work*,
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2734288&download=yes
- Dagnino, E. (2015), *Uber law: prospettive giuslavoristiche sulla sharing/on-demand economy*, *Adapt Labour Studies*, e-Book series, Bergamo, Adapt, available at <http://www.bollettinoadapt.it/uber-law-prospettive-giuslavoristiche-sulla-sharingondemand-economy/>
- De Stefano V. (2016), *Introduction:: crowdsourcing, the gig-economy and the law*, *CLLPJ*, available at
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2767383
- De Stefano V. (2016), *The rise of the “just-in-time workforce”: on-demand work, crowd work and labour protection in the “gig-economy”*, Geneva: ILO, *Conditions of work and employment series*; No. 71
- Drahokoupil J., Fabo B. (2016), *The platform economy and the disruption of the employment relationship*, *ETUI*, 5/2016,
<https://www.etui.org/Publications2/Policy-Briefs/European-Economic-Employment-and-Social-Policy/The-platform-economy-and-the-disruption-of-the-employment-relationship>
- EU-OSHA (2014), *Calculating the cost of work-related stress and psychosocial risks*, European risk observatory. Literature review, available at <https://osha.europa.eu/it>
- EU-OSHA (2017), *Protecting Workers in the Online Platform Economy: An overview of regulatory and policy developments in EU*, European risk observatory discussing paper
- Eurofound (2017), *Platform work: types and implications for work and employment – Literature review*; WP, Luxemburg, www.eurofound.eu
- Einav, L., Farronato, C. and Levin, J. (2016), ‘Peer-to-peer markets’, *Annual Review of Economics*, 8(1), pp. 615–635,
<https://web.stanford.edu/~leinau/pubs/AR2016.pdf>
- Felstiner A., *Working the crowd: Employment and labor law in the crowdsourcing industry*, *Berkeley Journal of Employment & Labor Law*, 32:1, 2011, 143 - 203

- Garofalo D. (2017), *Lavoro, impresa e trasformazioni organizzative*, paper presented at AIDLASS Conference 2017, Cassino, 18 – 19 May 2017, available at <https://www.aidlass.it/giornate-di-studio-aidlass-2017-2/>
- Harris, S.; Krueger, A. (2015), *A Proposal for Modernizing Labor Laws for Twenty-First-Century Work: The “Independent Worker”*, The Hamilton Project, Discussion Paper, available at www.hamiltonproject.org/assets/files/modernizing_labor_laws_for_twenty_first_century_work_krueger_harris.pdf
- ILO (2018), *Digital labour and the future of the work. Towards decent work in the online world*, International Labour Office – Geneva, ILO, 2018 available at https://www.ilo.org/global/publications/books/WCMS_645337/lang-en/index.htm
- Loi P. (2017), *Il lavoro nella Gig economy nella prospettiva del rischio*, *RGL*, no. 2/2017, pp. 259 – 280
- Prassl J., Risak M. (2016), *Uber, Taskrabbit, & Co: platforms as employers? rethinking the legal analysis of crowdwork*, available at <http://www.labourlawresearch.net/papers/uber-taskrabbit-co-platforms-employers-rethinking-legal-analysis-crowdwork>
- Quinlan M. (2015), *The effects of non-standard forms of employment on worker health and safety*, WP available at, https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443266.pdf
- Sachs B., *Uber and Lyft: Customer Reviews and the Right-to-Control*, onlabor.org, 20 May 2015, <http://onlabor.org/2015/05/20/uber-and-lyft-customer-reviews-and-the-right-to-control/> ;
- Sprague R. (2015), *Worker (Mis)Classification in the Sharing Economy: Square Pegs Trying to Fit in Round Holes*, JLEL, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2606600
- Silberman M.S., Irani L., (2016), *Operating an Employer Reputation System: Lessons from Turkopticon, 2008-2015*, available at CLLPJ,, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2729498&download=yes
- Thierer A., Koopman C., Hobson A., Kuiper C. (2015), *How the Internet, the Sharing Economy, and Reputational Feedback Mechanisms Solve the “Lemons Problem”*, Mercatus Working Paper
- Topo A. (2018), *“Automatic management”, reputazione del lavoratore e tutela della riservatezza*, LD, no. 3/2018, pp. 453-47
- Treu T. (2017), *Rimedi e fattispecie a confronto con i lavori della Gig economy*, WP CSDLE “Massimo D’Antona”.INT no. 136/2017, available at

http://csdle.lex.unict.it/Archive/WP/WP%20CSDLE%20M%20DANTONA/WP%20CSDLE%20M%20DANTONA-INT/20170926-030602_Treu_n136-2017intpdf.pdf

Tullini P. (2016), *Economia Digitale e lavoro non-standard*, *LLI*, no. 2/2016, available at <https://labourlaw.unibo.it/article/view/6489/6277>

Voza R. (2017), Il lavoro e le piattaforme digitali: the same old story?, *WP C.S.D.L.E. "Massimo D'Antona" .IT* – 336/2017, available at https://csdle.lex.unict.it/Archive/WP/WP%20CSDLE%20M%20DANTONA/WP%20CSDLE%20M%20DANTONA-IT/20170829-115917_voza_336-2017itpdf.pdf

Weiss M., *Digitalizzazione, smart working, politiche di conciliazione. La Platform economy e le principali sfide per il diritto, DRI*, no. 3/XXVIII – 2018, pp. 715 – 728.

CHAPTER IV

PLATFORM WORK AS A CHANCE FOR A MORE INCLUSIVE LABOUR MARKET

CLAUDIA CARCHIO

1. Introductory Remarks: Digital Technologies and Well-Being at Work

Technological innovation is one of the elements affecting society and labour markets, along with demographic changes and globalization. In this context, platform jobs redraw production processes and, with them, the relationships between employer and employee, workers, work and leisure time. The digital economy is thus becoming a central issue in the integration process of the European common market, particularly as far as the sharing or platform economy is concerned.

EU institutions have not provided a clear regulation at the supranational level, despite having reflected upon these new phenomena through the EU Commission. As the EU has not recognized its competence to intervene in these new productive contexts directly, some legislative initiatives have emerged at the national level, but their diversity sets them outside a common framework between Member States as a whole.

Similarly, in this framework the principles enunciated by the Lisbon Strategy and the Nice Charter are only marginal, because they have not succeeded in creating a “trump card” to generalize certain primary guarantees for EU workers, especially in terms of welfare and anti-discrimination protection (Bronzini, 2018, pp. 3 ff.). An example of this is given by the Lisbon Strategy and the 2020 Strategy, which are not even mentioned in the European Social Pillar Commission Proposal of 27 April 2017 or in the Joint Declaration of 13 November 2017.

However, considering that the current lack of common rules can alter the very foundations of the European single market, which sets its focus on fundamental freedoms, the EU will not be able to postpone the issue for

much longer. In other words, EU institutions will not be able to leave the digital economy – the most dynamic and expanding economic sector of the new productive activities via the Internet – under 28 different regulatory systems. The EU will have to face the social dimension (Ferrara, 2017), and draw up convergent welfare and work rules that will at least provide the primary guarantees connected to the digital activities. Critical voices consider the Social Pillar to be the expression of the persisting regulatory powerlessness of the Union in the construction of a common social model, which nevertheless remains focused on the primacy of the market and the freedom of businesses (see among others Giubboni, 2018; Bogg, Ewing, 2017; Durante, 2017, p. 165).

Thus far, the EU Commission has adopted the European agenda for the collaborative economy (SWD (2016) 184 final and COM (2016) 356) which, on the one hand, frames the sharing economy – considering so-called platform capitalism and its impact on EU law – offering a number of proposals, on the other hand. The document establishes that collaborative platforms and service providers can be subject to market access requirements if they are «justified and proportionate, taking account of the specificities of the business model and innovative services concerned, while not favouring one business model over the other» (SWD (2016) 184 final, § 2.1).

With regard to the impact on the conditions of workers, the Commission notes that «the collaborative economy generates new employment opportunities, generating revenues beyond traditional linear employment relationships, and it enables people to work according to flexible arrangements [...] this makes it possible for them to become economically active where more traditional forms of employment are not suitable or available to them». At the same time, «the more flexible work arrangements may not be as regular or stable as traditional employment relations [...] this may create uncertainty as to applicable rights and the level of social protection» and moreover «there are increasingly blurred boundaries between the self-employed and workers, there is an increase in temporary and part-time work and multiple job-holding» (SWD (2016) 184 final, § 2.4).

Because of this, and in order to help people make full use of their potential, the Commission invites Member States to increase participation in the labour market and to boost competitiveness, while ensuring fair working conditions and adequate and sustainable social protection, to: a) assess the adequacy of their national employment rules considering the different needs of workers and self-employed people in the digital world as well as the innovative nature of collaborative business models; b)

provide guidance on the applicability of their national employment rules in light of labour patterns in the collaborative economy.

Subsequently, after a wider consultation with Member States, social partners, and broader societal actors, the European Commission proposed the European Pillar of Social Rights. It is a collection of 20 principles and rights that supports the renewal of current labour markets and welfare systems aiming to strengthen the convergence towards better working and living conditions within the Member States. In this context the EU Commission even endorsed the link between the “Social Pillar” and a strategy that ensures effective protection for digital workers, proposing to include them in the revision process of the Written Statement Directive, thus regarding them as employees (Commission Staff Working Document Refit, Evaluation of the “Written Statement Directive”, Directive 91/533/EEC, SWD (2017) 205 final; see Risak, 2017, p. 14).

Alongside, the European Parliament, addressing the overall Commission initiative, adopted the Resolution on the European Pillar for Social Rights (2016/2095(INI), 19th January 2017) and, in relation to the topic discussed here, called for: a) the social partners and the Commission to work together to present a proposal for a framework directive on decent working conditions in all forms of employment, extending existing minimum standards to new kinds of employment relationships, including equal treatment, health and safety protection, protection during maternity leave, provisions on working time and rest time, work-life balance, access to training, in-work support for people with disabilities, adequate information, consultation and participation rights, freedom of association and representation, collective bargaining and collective action (no. 4); b) the Commission to propose a recommendation which considers in particular that digital platforms and other intermediaries should have an obligation to report all work undertaken through them to the competent authorities for the purpose of ensuring adequate contributions and protection through social and health insurance for all workers (no. 22c).

On the specific topic of the collaborative economy, the European Parliament has adopted the Resolution on a European Agenda for the collaborative economy, 2017/2003(INI) of 15 June 2017, asking for common measures to promote the collaborative economy without forgetting to ensure the respect of workers’ rights as well as their tax obligations, in order to improve compliance and prevent abuses.

Lastly, on April 16th 2019, the European Parliament adopted a Directive «on transparent and predictable working conditions in the European Union», which repeals Directive 91/533/EEC on employers’ obligation to inform employees of the conditions applicable to the contract

or employment relationship. The terms of this recent regulation – such as the obligation to provide information, the minimum requirements relating to working conditions, protection against employers' abuse or unfair treatments – represent a major step forward to improve working conditions, especially for those vulnerable workers – including on-demand workers – who have no guaranteed working time. Nonetheless, the Directive would not be applied specifically to platform workers, as its scope does not include the self-employed.

In the context of this supranational legal framework, but even at the national level, some unresolved issues remain, as online work exchanges take multiple forms and are therefore difficult to categorise (on the discussion on the legal qualification of the platform worker, see among others Kountouris, 2018, pp. 192 ff.; Prassl, Risak, 2016; Aloisi, 2016, pp. 653 ff.; Adams, Freedland, Prassl, 2015, pp. 529 ff.; Casale, 2011). If this aspect is not dealt with, it is difficult to know what regulations should apply – including Directives on working time, part-time work, temporary agency work, undeclared work, equal pay and equal treatment, parental leave – which ensure significant protection to employees.

Meanwhile, governments and businesses are already facing common challenges stemming from ensuring that the transformation of labour markets brought about by the emergence of the digital economy does not leave workers behind (●ECD, 2018a, p. 23).

Technological advances will create new jobs (a 2014 investigation by the IL● estimates that between 2014 and 2019 there will be 213 million new labour market entrants), but will also cause job destruction. Therefore, although there are important and noticeable benefits for a range of workers, there are also many risks and costs that affect the livelihoods of digital workers.

For this reason, it is crucial to address emerging forms of on-demand work performances in promoting labour market inclusiveness and high-quality jobs, in their multiple dimensions of earnings quality, labour market security and quality of working environments. This is especially true in the context of the weakest socio-economic groups of workers (on “job quality”, see the influential Stiglitz, Sen, Fitoussi, 2009, which identified eight dimensions of well-being; for a development of the notion under scrutiny here, see Cazes, Hijzen, Saint-Martin, 2015).

In this paper, we will focus on how platform jobs could be quality jobs for some categories of workers that are particularly weak on the labour market, such as working mothers and caregivers, people with disabilities and aged workers, ensuring them high participation in innovation activities.

These under-represented groups frequently are the least equipped to seize new opportunities because of discrimination within the labour markets, the persistence of stereotypes, or the higher barriers they face (OECD, 2018a, p.108).

These workers can be defined as disadvantaged in the labour market because they comparatively earn lower than prime-age men (aged 25-54) with an average gap of some 22% for mothers with young children, 45% for people with disabilities and 32% for workers aged 55-64 (OECD, 2018a, p. 230).

Considering that low employment rates are often linked with social exclusion, insufficient levels of well-being, poor working conditions and limited career prospects, it is interesting to explore how new jobs could affect labour market inequalities, reducing the persistent difficulties.

2. Win-win Arrangements at the Company Level: Smart Working Solutions for Common Problems

On-demand work does not only represent an employment issue but also a matter of work organisation. The development of online offers of goods and services, exploited to adapt businesses to globalisation, to increase their competitiveness and to accomplish a better match between production cycles and demand, represents a change in work organisation. Increasingly fragmented work relationships are an effect of this. The flexibility of on-demand work is primarily a way in which businesses organize their principal costs, according to the activities and among the workforce, independently of the employment relationships and contracts agreed upon with the workers (Eurofound, 2018a, p. 3).

However, these new jobs, such as digital platforms jobs, may potentially have a variety of effects on all aspects of working conditions, including employment security, wages and remuneration, working time, occupational safety and health conditions, access to social security, work organisation, work-life balance, and opportunities for training (ILO, 2018).

Theoretically, on-demand work benefits both businesses and workers because of the increased flexibility provided to the former and the possibility to call workers when needed, while the latter have the option of managing jobs together with their commitments.

In reality, the benefits are not equally balanced between the two parties, as casual work – as seen – is mainly employer-driven, while workers pay the price of these “tailored” jobs.

The request for on-demand work depends on fluctuations in the employers' workload, and managers use it as a flexible form of employment to quickly allocate the tasks that need to be carried out. However, they are not obliged to provide workers with work regularly (Eurofound, 2015). This means that workers have no guarantee of work and that both their working schedules and income are unpredictable, with no possibility of planning their career path.

On the contrary, from the workers' point of view, work flexibility should ensure a response to their needs to combine work and personal commitments (e.g. studies, other work activities or care tasks).

Positive effects on the workers' side mainly depend on the way they carry out digital jobs and, secondly, on the legal framework set out to control working conditions. In general, benefits can arise from a combination between a voluntary choice of the workers to engage in platform jobs and an equal treatment provided to them compared to standard workers (i.e. those engaged in full time, indefinite work, as well as those being part of a subordinate relationship between an employee and an employer; for this definition, see e.g. IL, 2017b, p. 1; IL, 2018).

In a sort of vicious cycle, on-demand workers, often qualified as independent contractors, have poorer working conditions because they do not have the same rights granted to standard employees. Concurrently, they are pushed to choose these jobs because they could not find a permanent occupation (Eurofound, 2018a, pp. 15 ff., reports that in 2013, according to a Norwegian Labour Force Survey, on-call workers were asked about the most important reasons for having a work arrangement of this sort, and 35% of them answered that they could not get another job. Indeed, other features indicate that the majority of workers in on-demand work do not choose it voluntarily; i.e. Polish figures show that for about 700,000 employees – 4.4% of the total number of employees in Poland – on-demand work was their occupation, and for over 80% of employees with civil law contracts, it was not their choice, as they had no other work alternatives. About 50% of the self-employed canvassed declared that their employer forced them to establish their own business. In Estonia in 2015, only a very small proportion of employees (2%) affirmed that they prefer to work under a temporary employment contract. Several features of these working conditions reflect the involuntary nature of this choice, as on-demand workers express willingness to work more, getting some more salary opportunities, as the data for the UK show).

Irregularity affects both job opportunities (guarantee of employment) and working hours, which is also an effect that, most of the times, is not chosen voluntarily. Indeed, unpredictability has an impact on working

hours (when, how often, for how long), which is an indicator of job quality, as it entails workers' health and well-being (Eurofound, 2016).

The uncertainty of working hours is one of the main issues related to platform jobs. Research highlights the impact of the unpredictable and uncertain situation faced by individuals working on demand. Not knowing when or for how long work will be available has significant consequences on working conditions, well-being, and health (EU-SHA, 2017; on the specific psychosocial and physical risks the workers face, see, among others Howard, 2017; Tran and Sokas, 2017; Wilde, 2016).

Almost half of those working on-demand feel distraught because they have to arrange their lives according to the platforms' requests. In particular, a German survey (BAuA, 2016, p. 68) found that 55% of on-demand workers feel strained because of the unpredictability of their working hours, with more women (63%) than men (48%) and especially single mothers (69%). In contrast, most workers up to the age of 30 are satisfied with the situation, although 41% still say they are strained by on-demand work. Therefore, crowd work clashes with workers' needs and puts pressure on individuals, especially those with family responsibilities.

In the end, the idea of on-demand work as an opportunity that gives individuals the freedom of choosing when to work, and to fit work with personal obligations, is not always a reality. Most of the time, it is the exact opposite, and absence or low control of working schedules reveals one of the major risks for the health and well-being of workers.

From the companies' point of view, the benefits brought about by online platform jobs are manifold, but the factors explaining the diffusion of these forms of work are mainly flexible workforce management in running a business and cost-effectiveness (Eurofound, 2018a).

The exploitation of these forms of work is justified as it addresses the primary challenge of the business: the need for flexibility. Platforms have the opportunity to choose among different workers and to have continuous availability of services and projects on demand.

The other main reason for using this model of work organization is the reduction of fixed costs, e.g. employment costs. On the employer's side, on-demand work represents a way to cover unpredictable peaks of activity and to face labour needs with an extra, and variable, workforce.

In addition, considering that this form of employment establishes labour relations similar to those of self-employed workers – which are generally based on private, civil or commercial contracts – these workers fall outside the traditional labour framework. Thus, platforms have short-term financial gains, as arrangements are exempt from social security contributions and other employee benefits.

Nonetheless, these cost savings are associated with a lack of protection for workers that is not sustainable for the workforce. It also has a negative impact on companies as the absence of a legal reference framework makes the monitoring of platform workers difficult. This is because it is harder to integrate external services within the production system and the risk of losing information or intellectual property is higher (Rodríguez-Piñero Royo, 2016).

In general, management studies indicate that companies heavily relying on temporary and other forms of non-standard employment risk a gradual erosion of specific organizational skills with repercussions on their ability to respond to changing market demands. It means that the short-term cost and flexibility gains may be at the expense of longer-term productivity losses (ILO, 2017a, 5). According to econometric analysis, these firms are more focused on investing in intensive labour than in training temporary workers; as a result, they tend to be older and less productive (Aleksynska, Berg 2016).

According to what has been said before, digital workers and businesses face many challenges. This state of play calls for the need to find the best solutions to resolve their common problems.

One of the possible answers to the issue of identifying innovative measures for digital workplace challenges could be the so-called “win-win arrangement”, that refers to the concept of mutual benefits or mutual gains. However, in the absence of an unequivocal agreement between social partners on the definition of “win-win” benefits, mutual gains can be defined as outcomes that benefit both the company and the workforce.

The use of the term “win-win” is consistent in the context of integrative negotiation, whereby the two parties seek to reach solutions that are agreeable to both (Eurofound, 2016b, p. 7).

However, this term should be accepted even if we refer to those HR-related measures where the combination of work organization and competitiveness-enhancing actions are taken in response to workplace challenges that contribute to finding solutions that work for both the employer and the employees.

Along this line, some European countries introduced and ruled legal arrangements aimed at facilitating the need driven by the process of change and innovation, so-called “agile work”. The equipment offered by Information and Communications Technology (ICT) enables both a flexible organization of working schedules of employees with an improvement of work-life balance and an increase in productivity (Tiraboschi, 2017, p. 9; Eurofound, ILO, 2017, pp. 47 ff.).

These forms of work remain outside the mediation of digital platforms, as they represent a particular kind of remote and subordinate work; nevertheless, agile workers still operate in organizational contexts strongly modified by digitization. They can be considered to be a sort of evolution of teleworkers as new technologies allow them to get greater coordination between working schedules and space through smart technologies (Caruso, 2018, pp. 10 ff.).

“Agile work”, as well as work carried out through platforms, brings to a dissolving process of the traditional workspace and a transformation of the ways work is performed (Tullini, 2016, pp. 748 ff.). Moreover, the diffusion of digital technologies favours this fragmentation both in terms of space and time and in terms of exclusivity of the contractual relationship (Malzani, 2018).

In Italy, Law no. 81/2017 (articles no. 18-24) regulated “agile work” as a type of employment contract that comes from an *ad hoc* agreement between the parties to the employment relationship. This agreement allows the execution of the employment obligation without specific working time limits, except for the maximum daily and weekly working hours set in legislation and collective agreements. There are no restrictions in terms of where the activities should be carried out, as they should be partly executed on company premises and partly outside of them without a fixed workstation. The working performance can even be organized by stages, cycles, and scopes, with the possibility of using technological tools.

Furthermore, employers remain responsible for employee safety and health as well as for the correct functioning of the technological tools provided to carry out work tasks outside company premises.

The stated purpose of this arrangement is to increase competitiveness and to facilitate work-life balance (on Italian law, see, among others Garofalo (Ed.), 2018, pp. 345 ff.).

This provision is inspired by the increase in flexibility within the working relationship, to favour the flexible arrangement of working times and places, also through the use of technological tools. However, it draws on a kind of permanent, salaried employment, and therefore it is not placed outside the protection scheme of the standard workforce.

Finally, this law represents a mere adaptation of the typical model of subordination, implemented through an enhancement of individual autonomy (Del Conte, Gramano, 2018, pp. 598 ff.; Andreoni, 2018, pp. 105 ff.; Franza, 2018, pp. 774 ff.; Casillo, 2017, pp. 19 ff.; Santoro Passarelli, 2017).

In symbolic terms, the law on agile work represents the first step of the digital revolution in the universe of labour law, but there are those who

considered it to be a useless intervention or a simple replay of the law governing telework (Tiraboschi, 2017).

It is probably still too early to assess the effectiveness of this legislation because agile work should be evaluated after its implementation and not regardless of it.

In parallel to what happens in Italy, the legislator in France has also adopted the regulatory framework for remote work, due to the influence of modern ICT.

Within the French context – and unlike the Italian one in which a new working scheme has been created – the main issues of teleworking law brought about by modern technologies have been addressed by reviewing the *Accord national interprofessionnel* (July 19, 2005), implementing the Framework Agreement on Telework, signed by the European Social Partners on 16 July 2002, and then regulated by articles L1222-9-L1222-11, *Code du Travail* (see Rapport Mettling, September 15, 2015).

In France, previous teleworking laws have simply been adapted to new generation technologies. Thus new organizational working schemes are now possible, without affecting the fundamental issues of the employment relationship such as working time, health and safety, which are already blurred by the challenges of the digital economy (on the comparison between the French and the Italian frameworks, see Dagnino et al., 2017, pp. 14 ff.; Dagnino, 2016, pp. 91-94; Tourres, 2016, pp. 64 ff.).

In Spain, Law no. 3/2012 (ley 3/2012 de 6 de Julio, *de medidas urgentes para la reforma del Mercado laboral en España*) regulates some aspects of remote working due to the introduction of new forms of employment relationships based on the use of ICT. The objective is to promote innovation in work organisation, improve work-life balance and increase employment opportunities. It still represents a preliminary legal framework, with many aspects – e.g. working time, wages and work-life balance – that need attention, as detailed in the white paper on telework in Spain (Fundación Másfamilia, 2012).

In the UK, aside from a guide for teleworking that was adopted after the European Agreement on Telework had come into force, all employees since 2014 have been given the right to request flexible work, including working from home, subject to a qualification period of two years.

In the Netherlands, the revision of the Working Conditions Act in 2012 provided a definition of telework and working from home or any other place outside company premises, thus regulating “locally independent work”. Overall, policy responses to ICT-based forms of work are not yet as widespread across EU countries as they should (Eurofound and IL, 2017).

3. The Elderly in the Labour Market and Active Ageing Measures

The transformation process of the world of digital jobs also implies a new “identity” for workers. They have to face the constant technological and IT evolution to support the rapid changes of the organization and new needs in terms of work-health-life-balance (this has become one of the most significant tasks for HR Departments, see Young et al., 2005, pp. 323-333).

In this context, a large share of the workforce belongs to a group of people born between 1980 and 2000, with different desires compared to those of previous generations. These individuals are commonly called “Generation Y” or “Millennials” (Strauss, Howe, 2000).

The ongoing demographic changes are no less significant, as they allow people to live longer. This contributes to altering the dynamics of the labour market and weakens the sustainability of welfare systems because of the increased imbalance between the active and the inactive population.

This is confirmed by the EU Commission report, “The 2015 Ageing Report”, according to which in the EU the increase in the old-dependency ratio (i.e. the percentage of people aged 65 or over compared to those aged 15-64) is expected to be between 27.8% and 50.1% in the 2013-to-2060 period. This would entail a transition from four to two working age people for each person over the age of 65 (EU Commission, 2015).

The fact that in many EU countries there is a noticeable increase in average life expectancy and a low birth rate, in addition to a marked demographic aging process (Eurostat, 2011; Eurofound, 2013), explains the pressure that central authorities have put on the need to increase the participation of older people in the labour market. This can guarantee the long-term sustainability of national welfare systems, pension spending above all (EU Commission, 2012).

The Lisbon Strategy sets its quantitative targets on this economic imperative, requiring by 2010 the achievement of an employment rate of workers aged between 55 and 64 equal to 50%. More recently, the EU’s 2020 Strategy has set the most general target of 75% of employed people in the 20-64 age group. Within the same framework, the interventions that postponed the pension age adopted by many EU countries in the last decades emerge (Reday-Mulvey, 2005, pp. 49-54).

However, the problems posed by the progressive increase in the dependency index must be tackled within a broader perspective, as EU authorities have tried to highlight focusing on the construction of a

“society for all ages” (CE Commission Communication, Towards a Europe for All Ages - Promoting Prosperity and Intergenerational Solidarity, Com (1999) 221 def., 21st May 1999), according to the 2012 European Year for Active Ageing and Solidarity between Generations (Decision No. 940/2011/EU of the European Parliament and of the Council, September 14, 2011, on the European Year for Active Ageing and Solidarity between Generations (2012); EU Commission, the EU Contribution to Active Ageing and Solidarity between Generations, EU Publication Office, Luxemburg, 2012).

The notion of active aging, developed by the World Health Organization to underline the close link between the psycho-physical well-being of the elderly and their activities, overcomes the idea that old age inevitably transforms people into consumers of public resources. On the contrary, it enhances the potential of the most advanced phase of human existence, effectively synthesized as follows: «extra years have been added to life; hence we now need to breathe life into those additional years» (Reday-Mulvey, 2005, p. 33).

According to a holistic approach that has already been tested in some European countries and has been accredited at the international level by the OECD and the ILO (Treu, 2012, p. 23; Ponzellini, 2012, p. 197; Mandin, 2004), far-reaching policies are needed to affect different aspects (work organization, vocational training, income, health care and prevention of diseases, sensitization of public opinion) and to promote change.

In this sense, a solution proposed by the EU in the Europe 2020 Strategy for smart, sustainable and inclusive growth consists in the achievement of two objectives: to increase both the retirement age and the percentage of employed persons among the working age population.

These goals were echoed by the Eurofound, which highlighted that greater participation in the labour market cannot be achieved without the necessary adaptation of the work itself to the changing needs of long-term workers (Eurofound, 2014).

Therefore, the concept of sustainable work has been identified as a multidimensional approach to interpreting and responding to changes in terms of work and society in general. Sustainable work can be regarded as key to making the labour market a good match for aging people as well and, moreover, to encourage an increase in employment rates by making jobs more adaptable to different ages (Eurofound, 2014, p. 4).

According to the Eurofound, the main dimensions related to sustainable work throughout the working life are the quality of work and individual circumstances (needs and abilities). These two dimensions should flow into an integrated model. Quality of work can have a strong

impact on health and well-being of workers, on the development of skills and the work-life balance; individual circumstances (including health and care needs) may also change throughout working life and impair the ability to work.

While scholars, for now, have mainly tackled the issue of sustainable work from a sociological and managerial perspective, from a legal point of view concepts like conciliation, work performance, presence at work, quality of work, etc. have yet to be analysed in depth. Through a legal approach, finding the best measures to create a work environment in which the competitiveness of a company reconciles with the needs of long-term work sustainability is indeed possible. Sustainability does not only benefit the workers but also the productivity and efficiency of the companies themselves (Eijnatten, 2000, p. 53; Ilmarinen et al., 2008; Docherty et al., 2009, p. 4; Kossek et al., 2014, p. 309).

It is therefore evident that the determining factors for the creation of a sustainable career have undergone an evolution in parallel to technological development, market globalization, and organizational innovation, thus posing new challenges for workers' well-being. Demographic changes and the aging of the population do not represent marginal aspects in the evolution of the labour market. They must be addressed with a vision that guarantees a match between the improvement of the quality of work and the enhancement of skills, favouring the extension of working life, thus avoiding a premature exit from the labour market.

Having a look at the specific situation of platform workers, we can consider their distribution among age groups. A study conducted in the U.S. on a sample of people who had received an income at least once over the course of 36 months (October 2012 - September 2015) from the platforms, found that participants were significantly younger than the general population (Farrell Greig, 2016, p. 22). In the U.S. population, 12% of people whose age ranged between 18 and 29 had earned money carrying out online tasks, while the percentage was equal to 4% for U.S. citizens between the age of 30 and 49, and to only 1% for those over 50 (Smith, 2016).

In the European area too, young people are overrepresented among platform workers, as compared to the general population in their respective countries. In Switzerland, 59% of platform workers were younger than 35 years of age, compared to 57% in Sweden, 51% in Germany and Italy, 50% in the UK, 47% in Austria and 42% in the Netherlands. However, older workers, aged 55 and over, account for 11%-17% of platform workers (Huws et al., 2017; Florisson R., Mandl I., 2018, pp. 20 ff.).

Indeed, a difference was observed between workers that carry out micro tasks and deliver tasks locally. For the former, it was reported that workers were on average 34.3 years old (Berg, 2016; DG IPOL, 2017, reported that about 60% of workers were younger than 40). Conversely, with regard to tasks delivered locally, a Belgian study conducted through crawling and tracking activities of registered workers on the platform found that 69% were younger than 30 (De Groen et al., 2016, p. 9).

In general, crowd work is more widespread among young workers. Yet, technological developments associated with the digitalisation of work may offer opportunities for older workers as well. The changes occurring in the working world, along with the aging of society in Europe, might produce innovative implications not only on working conditions across all ages but even in relation to sustainable work in the future, when younger cohorts of workers will reach older ages (Eurofound, 2017, p. 4). For example, the use of nonstandard and temporary contracts – currently largely limited to younger employees – may disseminate among other age groups with potential consequences on labour protection, as well as on social security.

Concurrently, rapid population aging also gives rise to job reallocation issues as it will significantly increase the number of elderly people who will need support in remaining within the labour market or finding new jobs. Moreover, the extension of life expectancy may lead to a reallocation of labour across sectors and occupations as the overall consumption patterns change with a shift from durable goods toward services, such as health care (OECD, 2018a, p. 93).

Despite the emerging problems brought about by digitalization and technological diffusion for the elderly workforce, they nonetheless offer many opportunities such as working remotely with the potential reduction of physically demanding work. It could facilitate greater access to employment for older workers (Eurofound, 2017, p. 69).

A survey conducted on the reasons for engaging in platform jobs shows that, for example, while 42% of people ranging between 60 and 70 years of age indicate that staying active motivated them to do platform work, only 15% of people between the ages of 18 and 29 provided the same reason. The older age group was also more likely to state that working in the gig economy was a conscious choice for them (32% against 16%-21% for other age groups); on the contrary 46% of 40-to-49 year-olds were most likely to say they worked in the gig economy because they want to increase their overall income (CPD, 2017; Florisson, Mandl, 2018, p. 32).

The platform economy could be a way to encourage older workers to expand choices that enable them to remain economically active for a longer period and create a lifelong active society.

Technology diffusion is increasing changes related to where and when to work and is also producing new and better job opportunities. Yet a longer permanence of older people in businesses could be a resource for the economy and society through their skills and experience.

Naturally, those who want or have to remain economically active should be able to access assistance to do so, for example through flexible working arrangements that include reduced working hours and telework. This way, the platform work should fit well, as it provides new and innovative means of adapting jobs and workplaces to facilitate the continued employment of aging workers and those who have or develop disabilities over the course of their working life (ILO, 2019, p. 33).

However, not all adults have enough skills to face these challenges. For example, the Survey of Adults Skills – PIAAC (conducted between 2012 and 2015) shows that around 15% of adults had no prior computer experiences or did not have basic ICT skills, while around 14% had low levels of problem-solving skills in technological environments (OECD, 2016a).

These data point out that promoting the inclusion of the elderly in the increasingly digital and globalized world is necessary to ensure the right skill combination. Life-long learning programmes could represent an effective way to face some of the challenges linked to the digital world as skill requirements are quickly changing, and especially older workers need continuous learning opportunities.

As routine tasks tend to be less frequent, or to disappear, and workers need to deal with technology, a set of complementary skills such as solving problems, thinking creatively, and communicating assume increasing value as they cannot be performed by machines. Moreover, workers need to have more ICT skills in addition to the technical and professional skills linked to their area of work, with know-how related to new technologies such as artificial intelligence and cloud computing (OECD, 2018b; OECD, 2017a; OECD, 2016b).

For these reasons, strengthening existing infrastructures for life-long learning helping one to reskill or upskill over life will be of the utmost importance in order to be ready for the significant changes that lie ahead. In order to reach this goal, legislators and companies should exploit the opportunities offered by new technology. For instance, they allow easy access to online courses, but this does not preclude the need to avoid

marginalising those people lacking basic digital skills (OECD, 2018a, p. 102).

4. Supportive Work-life Balance Solutions for Working Parents and Caregivers

The crucial importance of work-life balance already emerges from the European Social Pillar, where principle n. 9 states that «parents and people with caring responsibilities have the right to suitable leave, flexible working arrangements and access to care services. Women and men shall have equal access to special leaves of absence in order to fulfil their caring responsibilities and be encouraged to use them in a balanced way».

In terms of work-life balance initiatives, in addition to those aimed at parents by the political action of many governments (Kossek et al., 2014, p. 298; Galinsky, Aumann, Bond, 2011), active policies that include employment strategies for so-called working carers are also fundamental to guaranteeing job sustainability. In fact, in order to increase participation in working life – even up to a more advanced age – while still being able to fulfil family responsibilities, it is necessary to rethink ways to reconcile work and private life, according to a broader perspective that takes the needs of workers into account (Romano, 2017, pp. 269).

However, we should not forget that the most recent studies on gender differences in the labour market indicate parenting as one of the most influential factors in this field (see among others Eurostat, 2018; Angelov et al., 2016, for Sweden; Goldin et al., 2017, for the U.S.; Kleven et al., 2017, for Denmark; Inps, 2018, for Italy). Having a child significantly reduces women's chances of continuing to work and – for those who stay on in work – improving their career prospects, while the situation is different for men. This increases the gap between work paths and income trends that cannot be filled over time (Fili, 2018).

The data highlight the importance of moving towards policies that push to change the allocation of time between work and family care and the division of labour and parental responsibilities. This is a condition for a fair participation in the labour market and a simpler sharing of family responsibilities, with positive effects on the well-being of parents and on the development of children. European authorities are increasingly aware of their importance and pay attention to the issues related to the sharing of responsibilities between parents.

It is striking that in EU countries women have less freedom to choose than men, as society compels them to make certain life choices. This has serious collective repercussions, as both the low rate of total employment

and the low overall birth rate (see the analysis and the data collected in the documents mentioned in the Preamble of the European Parliament resolution of 13th September 2016 on creating labour market conditions favourable for work-life balance (2016/2017(INI)), P8 TA (2016)0338) are transforming most EU countries “into a gerontocratic society” and are threatening the global social and economic development (European Parliament resolution of 13th September 2016 on creating labour market conditions favourable for work-life balance, 2016/2017(INI).

Even across platforms, research has found significant differences in gender participation rates (Florisson, Mandl, 2018, p. 21). The results highlight a link between gender and whether the activity is considered to provide the main or a supplementary form of income (Ipeirotis, 2010). In countries where platform jobs more often constitute the main source of income, the majority of workers are males. In other countries where platform jobs are mainly a supplementary form of income, the rate of female workers is higher, which “may reflect cultural attitudes and preconceptions about the societal role of women” (Kuek et al., 2015, p. 31).

Nonetheless, gender roles and the stereotype that women, despite their level of education, should take care of children, housework and elderly relatives, play an important role when women make the decision to do crowd work as it allows them to stay at home. Thus, platform work enables women to engage in some form of work, earn an income, while still managing other responsibilities and performing housework. In addition, the high cost of child and elderly care often prevents parents (especially women) from taking up a job outside the household (Anxo et al., 2011).

However, crowd work often represents a trap, adding a double burden to the workload of women. Women with young children spend on average about 19.7 hours working on platforms in a week, just five hours less than the average for the 2017 sample as a whole. Many of these women (36%) work at night (10 p.m. to 5 a.m.) and during the evening (6 p.m. to 10 p.m.; 65%), and 14% of them work for more than two hours during the night for more than 15 days a month (ILO, 2018).

The outsourcing of work through platforms has led to the development of a 24-hour economy. The consequence is a stretching of consecutive hours of (paid and unpaid) work which contribute to putting an additional burden on workers, especially female, given their disproportionate workload of caring responsibilities and household work (ILO, 2016a).

As mentioned above, the feeling that workers have of having to be available at all times when working on platforms blurs the lines between

their private and professional life (Martin et al., 2016; Smith, Leberstein, 2015). Moreover, workers may find they cannot enjoy their spare time since there is a constant pressure to be on call to accept potential upcoming projects (Huws et al., 2017). Workers in on-call employment and casual arrangements typically have no control of their time or work schedule and, instead, have to be available constantly, with consequences not only for their work-life balance but also in terms of income security and management of other jobs one may have.

A recent study (ILO, 2017a) reveals that on-demand workers often do not have regular flows of work and continuously look for employment without guarantees of finding any. The willingness to obtain more crowd work (88% of respondents say that they would like to work more) is also partly due to insufficient pay. On average, these individuals aspire to carry out a further 11.6 hours of crowd work per week, but the majority of them report an impossibility to undertake more work not only due to ill health, caring responsibilities or other commitments, but also lack of available jobs (ILO, 2018, pp. 62 ff.). In a typical week, workers spent 24.5 hours doing crowd work, 18.6 hours of which were paid work and 6.2 hours were unpaid (e.g. looking for tasks, completing qualification tests). As a result, for every hour spent on paid work, roughly 20 minutes of additional time was spent on looking for tasks (ILO, 2018, p. 67; Hara et al., 2018).

In most cases, on-demand work, despite the benefit of giving workers the option of taking up jobs when they fit well with career paths and personal commitment plans, is not “voluntary” and the reason why individuals embark on this type of work is solely brought about by a lack of alternatives (Eurofound, 2018a).

In essence, the aforementioned flexibility, that in theory allows the online platform worker to work wherever, whenever, for whomever and on whatever tasks, is not much more than an illusion, due to little work and remuneration.

Indeed, a regular working schedule and regular salaries are paramount for individuals with family responsibilities, especially for women (Eurofound 2018a). This is not so different from the traditional issue of segregated labour markets and occupations where women tend to select jobs that allow them to fulfil caring and housekeeping responsibilities.

This multiplication of duties, however, reduces the time that female workers can devote to work. Therefore, their lower availability to perform work compared to men has repercussions on their overall salary. In other words, just like in the case of standard work performances, women end up having less time to spend on the job and therefore have fewer earnings opportunities. The flexible management of working time can be of help

but this aspect alone cannot be the solution to the problem of low female participation in the labour market.

For this reason, the IL● recommends expanding time sovereignty of platform workers, by granting greater autonomy when it comes to their working schedule. Harnessing technology to achieve a balance between work and personal life can help them address the pressures that come with the blurring of boundaries between working and private schedules (IL●, 2019, p. 12).

Nevertheless, the IL● underlines that the economic and social imperative of gender equality can no longer be questioned and, at the same time, that gender equality begins within the household. For this reason, it recommends the adoption of policies that promote the sharing of care and domestic responsibilities between men and women, by establishing and expanding leave benefits for both parents and investing in public care services to ensure a balanced division of care work, not only between men and women, but also between the State and the family.

In this context, technology is seen as a powerful tool to achieve gender equality, as it can facilitate knowledge of, and access to, employment opportunities. At the same time, emerging evidence reveals that new business models in the digital economy are perpetuating gender gaps and thus it is important to adopt specific measures to ensure equal opportunity and equal treatment of women in the technology-enabled jobs of the future (IL●, 2019, pp. 34-35).

5. Digital Work and Reasonable Accommodation for Disabled People

Platform work allows labour to be organized in new ways, through the exploitation of economic and technological efficiencies. As such, crowd work may offer a valid opportunity even for people with disabilities to access or stay in work. Indeed, it undoubtedly provides advantages, such as the ability to work from home, thus avoiding the use of means of transportation, to autonomously manage the pace at which each task is carried out, thus setting a flexible work schedule, to use personal adaptive technologies and even to choose not to reveal one's disability status.

For the first time, a recent study has investigated and revealed the features and habits of people with disabilities who carry out crowd work (Zyskowski et al., 2015, pp. 1682 ff.) and suggested promoting the widespread accessibility to digital technologies in order to include accessibility to employment and social experiences in computer-mediated environments.

From a social and legal perspective, attaining employment is a crucial matter for the inclusion and participation in society for people with disabilities.

Across Europe, a large share of the population suffers from a disability and consequently risks being excluded from the labour market. The number of people who suffer from a disability that limits their ability to work exceeds the number of jobseekers in most Member States (EU Commission, 2016).

Although disabilities exist on a continuum, ranging from minor to severe and multiple disabilities, there is evidence that severe disabilities only affect a small share of those within the working age spectrum (Eurostat online indicators [hlth_silc_06] and [hlth_dpeh130], age 15/16-64, self-reported disability, based on the SILC survey of 2012.2011, show that about 72% of people with disabilities do not have a severe limitation in daily activities due to a health problem and about 75% do not need assistance in their daily activities).

Thus, it is important to strengthen initiatives supporting the integration of people with a disability in the labour market, focusing on appropriate measures. In this respect, one of the fundamental pieces of protection against the discrimination in employment and working conditions of disabled people is the legal provision of reasonable accommodation.

The notion of “reasonable accommodation” appeared in the 1970s, first in U.S. legislation with the aim of protecting equal opportunities in the workplace (1972 Equal Employment Opportunity Act) and, shortly thereafter, in Canadian case law. Originally, it solely referred to specific solutions that the employer was obliged to put in place to “accommodate” the needs of workers related to religious practices. But, it was soon used also against discrimination when accessing employment opportunities to protect people with disabilities, gradually becoming the pivot to guarantee them substantial equality (Ferri, 2017, pp. 381 ff.).

In 1990, the Americans with Disabilities Act introduced the landmark norm that obliged the employer to adopt specific measures to remove the environmental and social barriers that the person with disability could face (Blanck (Ed.), 2000).

From that moment on, the concept of reasonable accommodation spread to international, European and national legislation and soft law. In 1993, the United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities (UN General Assembly Resolution No. 48/96 of 20 December 1993) affirmed the duty of states to encourage employers to make reasonable accommodation. This was not a binding legal instrument, however it had the merit of establishing, for the

first time, a minimum guarantee for the rights of people with disabilities on a global level.

In 2000, EU legislation too made provisions for the notion of reasonable accommodation. Article 5 of Directive 2000/78/EC establishes a general framework for equal treatment in the field of employment and working conditions in relation to persons with disabilities. This provision explicitly envisages the duty of the employer to adopt reasonable solutions to protect the disabled worker, imposing «to take appropriate measures, where needed in a particular case, to enable a person with a disability to have access to, participate in, or advance in employment, or to undergo training, unless such measures would impose a disproportionate burden on the employer».

With the approval of the UN Convention on the Rights of Persons with Disabilities (United Nations General Assembly Session 61, Resolution 106 of Convention on the Rights of Persons with Disabilities A/RES/61/106 13 December 2006, retrieved 5 October 2017), in 2006, reasonable accommodation became an effective human right in all areas of daily life, and a key to achieving substantial equality for people with disabilities (Lord, Brown, 2011).

In the European area, the Convention has been ratified by 27 EU Member States (Ireland has not done so yet) and by the EU itself, becoming the benchmark for the protection of people with disabilities.

In the Charter of Fundamental Rights of the European Union (2000), there are also two provisions specifically related to disability. Article 21 states the principle of non-discrimination, while Article 26 states that the EU «recognises and respects the right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupational integration and participation in the life of the community» (about Article 26, O'Brien, 2014).

Even the Social Pillar recommends Member States to enforce «the right of persons with disabilities to income support that ensures living in dignity, services that enable them to participate in the labour market and in society, and a work environment adapted to their needs» (principle no. 17).

With respect to the participation of persons with disabilities in the digital labour market, the Digital Agenda for Europe, in its multifaceted approach to e-inclusion, calls the European States for «concerted actions to make sure that new electronic content is also fully available to persons with disabilities». For instance, to promote accessibility, the Agenda calls for the systematic evaluation of «accessibility in revisions of legislation

undertaken under the Digital Agenda [...] following the UN Convention on the Rights of Persons with Disabilities» (see also OECD, 2016c, p. 58).

Studies conducted on crowd work experiences for people with disabilities underline that, while 31% of respondents felt like they had been treated differently at work because of their disability, respondents who had tried crowd work reported a general feeling of satisfaction in finding work online. This was not only due to the quick and efficient payments they received but also because they enjoyed it for aspects that go beyond that of remuneration. It is, in fact, a means to participate in new activities or to continue a previous hobby (Zyskowski et al., 2015, pp. 1682 ff.).

However, identifying tasks that suited their abilities was a challenge. Even when a crowd work platform was accessible, and the tasks sounded achievable from their initial descriptions, then some duties linked to third-parties would involve an unanticipated component not suitable for the abilities of some participants. Some respondents expressed frustration with not being able to filter HITs for accessibility effectively. Others were frustrated by the lack of compensation for their time on such “abandoned” tasks, but also concerned about the effects that quitting a task halfway through - after having accepted the job - may have effects on their reputation (Zyskowski et al., 2015, pp. 1682 ff.).

Performing crowd work also poses the issue of socializing. Although for specific disability sub-populations the social aspect of a workplace is not critical for personal development, at-home work is a suitable solution for individuals with social anxiety: the online space is not dominated by social interactions, while at the same time social interaction over the Internet remains possible (Zyskowski et al., 2015, pp. 1682 ff.).

Other issues refer to the economic and career prospects of crowd work for people with disabilities. The ability to perform work at home, without the stress of transportation to and from work, represents a benefit for this population, as much as the chance to earn additional income to supplement government disability benefits due to part-time work. (DG POL, 2017, p. 44; ILO, 2018, p. 39, reports that health problems were frequently mentioned as one of the reasons for which respondents preferred to work from home or could only work from home; about 19% of respondents reported that they had current physical or mental health conditions or illnesses lasting or expected to last 12 months or more; for more than half of these individuals (54%), these health problems affect the kind of paid work that they might do; for about 18% of them, the health conditions or illnesses strongly affect their ability to carry out day-to-day activities and

crowd work seems to provide an alternative way to keep on working and earning an income).

However, some features of platform jobs, such as the lack of health insurance benefits or social security protections, may limit the potential of crowd work as a career.

In the search for effective tools that promote work integration of people with disabilities – as imposed by the rules that require employers to guarantee reasonable accommodation – the path of work through the platform could prove successful.

It allows one to: a) avoid workstations with architectural barriers and without environmental facilitators; b) adapt the characteristics of the jobs to be assigned to people with disabilities, also with reference to reasonable accommodation; c) find good practices of job inclusion of people with disabilities (these are for example some of the principles dictated by the guidelines on the targeted placement of people with disabilities in Italian legislation. See article, 1, d.lgs no. 151/2015, and article 3 d.lgs. no. 216/2003; Spinelli, 2016, pp. 11 ff.).

However, research shows the need to provide particular devices that allow actual accessibility and long-term use of crowd work for these categories of workers. For instance, the possibility for people to optionally identify disabilities on platforms as part of their worker profile could be an example of good practice. This kind of information could be used to provide accommodation automatically i.e. expanding time limits on tasks, providing micro-breaks, filtering out inaccessible tasks, etc. Of course, not all people with disabilities are happy to disclose this information within an employment context, and this may limit the effectiveness of a self-disclosure based approach.

On the contrary, the development of online communities for crowd workers with different disabilities could be a positive means to disseminate information regarding available opportunities, while paying more attention to their accessibility, organizing policy and lobbying purposes, and providing a space for social interaction surrounding one's work.

6. Conclusions

As known, workers that carry out “gigs” on online platforms are classified as independent contractors or self-employed, with the effect of denying them the protection granted by labour and social security law.

Because of the increasing number of non-standard workers, work is often occasional and mixed with multiple jobs and income sources, with

frequent transitions between salaried employment, self-employment and work-free periods.

However, a recent study conducted by the International Labour Organization (ILO, 2018) highlights that most crowd workers financially depend on the salaries they get from crowd work. For about 32% of them, crowd work represents the primary source of income, and comprises about 59% of their total income.

The salary these workers perceive are, on average, lower than the minimum wage, especially when total paid and unpaid hours were considered, including time spent searching for work and side activities (such as searching for tasks, taking qualification tests, researching clients, writing reviews). For example, across the five platforms considered by the 2018 ILO report, in 2017, a worker earned US\$ 4.43 per hour when only paid work was considered, and US\$ 3.31 per hour when paid and unpaid work was considered, with median earnings of just US\$ 2.16 per hour.

Among respondents, 88% would like to do more crowd work; this is why workers try to find tasks on more than one platform, and often (60% of respondents) express the desire for more work that is not crowd work.

Yet crowd work can offer significant flexibility. One of the most evident aspects is that workers appreciate the ability to set their schedule and work from home (ILO, 2018).

Moreover, many crowd workers worked atypical hours: seven days per week (36%), during the night (43%), during the evening (68%), either in response to task availability or because of other commitments.

Platform jobs even affect skill mismatches and career advancement, as in general the tasks performed are simple and repetitive and are not in line with the level of education of crowd workers, who are generally well educated. As reported by the ILO survey, less than 18% of the crowd workers have a high school diploma or less, one-fourth had a technical certificate or completed university studies, 37% have a bachelor's degree and 20% have a postgraduate degree; among degree holders, 57% are specialized in science and technology and an additional 25% is specialized in economics, finance, and accounting (ILO, 2018).

In terms of features, we can note that the average age of crowd workers is 33.2 years of age, with a gender difference in the propensity to carry out this sort of job, as women only account for one out of every three workers. There is also a significant difference in terms of gender for those who could "only work from home" due to caring responsibilities, with 13% of female workers giving this reason compared to 5% of men (ILO, 2018).

Even health conditions influence the decision to carry out crowd work, as for 10% of these workers, crowd work provides a way to continue working and earning an income despite their disability.

In conclusion, the spread of digital jobs in general, and platform jobs in particular, gives rise to the diversification of employment arrangements and the transformation of working conditions, despite the conditions of standard employment. Across-the-board uniformity is neither necessary nor possible, but diversification may nonetheless endanger the attainment of decent work.

The most relevant benefits of on-demand jobs are flexibility and great accessibility, as they both represent a chance to promote a more inclusive labour market. However, these do not have to be at the expense of lower job quality standards in their multiple dimensions of earnings quality, labour market security and quality of working environments.

The challenge is to adapt labour and social protection policies so as to foster an inclusive labour market for the future, without forgetting to take into account the different needs of the most disadvantaged groups of workers (OECD, 2017a).

The meaning of labour market inclusiveness focuses on the distribution of opportunities and outcomes across individuals. Ensuring equal opportunities for all to succeed in the labour market reduces the risk of people being excluded from fully participating in the labour market and falling into poverty. In this context, platform labour markets have to be oriented towards inclusiveness both in its dynamic aspects of avoiding inequality –i.e. the prospects for social mobility and career advancement – and in its static ones, such as the distribution of individual earnings and household incomes and differences in accessing quality jobs between socio-economic groups (OECD, 2018a, p. 49).

Following the IL teachings, ensuring decent work on digital labour platforms could be possible, even for weaker workers, keeping in mind that none of the negative outcomes is inherent to the concept of crowd work, or to micro-task work in particular. On the contrary, reconfiguring the terms of microwork in order to improve conditions for workers could be possible (IL, 2018, p. xviii).

References

- Adams A. (2015), Freedland M.R., Prassl J., *The «Zero-Hours Contract»: Regulating Casual Work, or Legitimizing Precarity?*, in *Giornale di Diritto del Lavoro e delle Relazioni Industriali*, pp. 148 ff.

- Aleksynska M., Berg J. (2016), *Firms' Demand for Temporary Labour in Developing Countries: Necessity or Strategy*, International Labour Office, Inclusive Labour Markets, Labour Relations and Working Conditions Branch – Geneva (Conditions of work and employment series; No. 77).
- Aloisi A. (2016), *Commoditized workers. Case study research on labour law issues arising from a set of “on-demand/gig economy” platforms*, in *Comparative Labor Law & Policy Journal*, Vol. 37, No. 3.
- Andreoni A. (2018), *Il lavoro agile nel collegamento negoziale*, in *Rivista Giuridica del Lavoro*, I, pp. 105 ff.
- Angelov N., Johansson P., Lindahl E. (2016), *Parenthood and the Gender Gap in Pay*, in *Journal of Labor Economics*, vol. 34, issue 3, pp. 545 ff.
- Anxo D., Franz C., Kummerling A. (2013), *Working Time Distribution and Preferences Across the Life Course: A European Perspective*, in *Economia & lavoro*, 2, pp. 77 ff.
- Anxo D., Mencarini L., Pailhé A., Solaz A., Tanturri M. L., Flood L. (2011), *Gender differences in time use over the life course in France, Italy, Sweden and the US*, in *Feminist Economics*, Vol. 17, No. 3, pp. 159–195.
- BAuA (Bundesanstalt für Arbeitsschutz und Arbeitsmedizin) (2016), *BAuA-Arbeitszeitreport 2016: Die wichtigsten Ergebnisse im Überblick*, Dortmund, Germany.
- Berg J. (2016), *Income security in the on-demand economy: Findings and policy lessons from a survey of crowdworkers*, Conditions of Work and Employment Series, No. 74, ILO, Geneva.
- Blanck P. (Ed), 2000, *Employment, Disability, and the Americans with Disabilities Act: Issues in Law, Public Policy and Research*, Evaston.
- Bogg A. (2017), Ewing K.D., *The continuing Evolution of European Labor Law and the Changing Context for Trade Union Organizing*, in *Comparative Labor Law & Policy Journal*, Vol. 38, No. 2.
- Bronzini G. (2018), *Economia della condivisione e lavoro autonomo: una prospettiva europea*, in Perulli A., *Lavoro autonomo e capitalismo delle piattaforme*, Kluwer-Cedam, Milano.
- Caruso B. (2018), *I diritti dei lavoratori digitali nella prospettiva del Pilastro sociale*, in *WP CSDLE “Massimo D’Antona”.INT – 146/2018*.
- Casale G. (2011), *The Employment Relationship: A Comparative Overview*, International Labour Office – Geneva.
- Casillo R. (2017), *La subordinazione «agile»*, in *Diritti Lavori Mercati*, 3, pp. 19 ff.

- Cazes S., Hijzen A., Saint-Martin A. (2015), *Measuring and Assessing Job Quality: The OECD Job Quality Framework*, OECD Social, Employment and Migration Working Papers, 174, OECD Publishing.
- CIPD (2017), *To gig or not to gig? Stories from the modern economy*, Chartered Institute of Personnel and Development, UK.
- Commissione Ue, *Libro bianco. Un'agenda dedicata a pensioni adeguate, sicure e sostenibili*, Bruxelles, Com (2012) 55 def. del 16 febbraio 2012.
- Dagnino E. (2016), *Il Rapporto Mettling sulla trasformazione digitale del lavoro: spunti di riflessione e di metodo*, in Casano L., Imperatori G., Tourres C., *Loi travail: prima analisi e lettura, Una tappa verso lo "Statuto dei lavori" di Marco Biagi?*, ADAPT Labour Studies e-Book series, n. 56, pp. 91 ff.
- Dagnino E., Menegotto M., Pelusi L. M., Tiraboschi M. (2017), *Guida pratica al lavoro agile dopo la legge n. 81/2017*, ADAPT University Press.
- De Groen, W. P. and Maselli, I. (2016), *The impact of the collaborative economy on the labour market*, No. 138/ June 2016, CEPS (Centre for European Policy Studies), Brussels.
- De Stefano (2016), *The rise of the »just-in-time workforce«: on-demand work, crowdwork and labour protection in the gig-economy*, in Conditions of Work and Employment Series No. 71.
- Del Conte M., Gramano E. (2018), *Looking to the Other Side of the Bench: the New Legal Status of Independent Contractors Under the Italian Legal System*, in *CLL&PJ*, 39, pp. 598 ff.
- DG IPOL (2017), *The social protection of workers in the platform economy*, European Commission, Brussels, Belgium.
- Docherty P., Kira M., Shani A.B. (2009), *Creating sustainable work systems, Developing social sustainability*, Second edition, Routledge.
- Durante F. (2017), *Lavoro e welfare: il sindacato e il Pilastro europeo dei diritti sociali*, in *Rivista delle politiche sociali*, 2, pp. 165 ff.
- Eijnatten F.M. (2000), *From Intensive to Sustainable Work Systems: The Quest for a New Paradigm of Work*, TUTB-SALISA Conference, Brussels, 25-27 September 2000.
- EU Commission (2015), *The 2015 Ageing Report, Economic and budgetary projections for the 28 EU Member States (2013-2060)*, Publications Office of the European Union, Luxembourg.
- EU Commission (2016), *Disability and labour market integration*, Analytical Paper, written by Scharle A., Csillag M., Publications Office of the European Union, Luxembourg.

- EU-OSHA (European Agency for Safety and Health at Work) (2017), *Protecting workers in the online platform economy: An overview of regulatory and policy developments in the EU*, Publications Office of the European Union, Luxembourg.
- Eurofound (2013), *Role of Governments and Social Partners in Keeping Older Workers in the Labour Market*, Dublin.
- Eurofound (2014), *Foundation Focus, Sustainable work: towards better and longer working lives*, issue 16, Dublin, Ireland.
- Eurofound (2015), *New forms of employment*, Publications Office of the European Union, Luxembourg.
- Eurofound (2016a), *Sixth European Working Conditions Survey – Overview report*, Dublin.
- Eurofound (2016b), *Win-win arrangements: Innovative measures through social dialogue at company level*, Publications Office of the European Union, Luxembourg.
- Eurofound (2017), *Working conditions of workers of different ages: European Working Conditions Survey 2015*, Publications Office of the European Union, Luxembourg.
- Eurofound (2018), *Work on demand: Recurrence, effects and challenges*, Publications Office of the European Union, Luxembourg.
- Eurofound and the ILO (2017), *Working anytime, anywhere: The effects on the world of work*, Publications Office of the European Union, Luxembourg, and the International Labour Office, Geneva.
- Eurostat (2011), *The greying of the baby boomers. A century-long view of ageing in European populations*, Luxembourg.
- Eurostat (2018), *The life of women and men in Europe - A statistical portrait - 2018 edition*, available at <https://ec.europa.eu/eurostat/web/products-digital-publications/-/KS-01-18-004?inheritRedirect=true&redirect=%2Feurostat%2Fpublications%2Fdigital-publications>.
- Farrell D., Greig, F. (2016), *Paychecks, paydays, and the online platform economy: Big data on income volatility*, JPMorgan Chase & Co. Institute, U.S.
- Ferrara M. (2017), *Rotta di collisione. Euro contro welfare*, Laterza, Roma-Bari.
- Ferri D. (2017), *L'accomodamento ragionevole per le persone con disabilità in Europa: da Transatlantic Borrowing alla Cross-Fertilization*, in *Diritto pubblico comparato ed europeo*, 2, pp. 381 ff.
- Filii V. (2018), *Le carriere lavorative femminili ed i differenziali retributivi*, in Consiglieria Regionale di Parità (Ed.), *Il lavoro femminile in Friuli Venezia Giulia*, Rapporto 2017, Franco Angeli, Milano, pp. 91 ff.

- Florisson R., Mandl I. (2018), *Digital age. Platform work: Types and implications for work and employment– Literature review*, Eurofound, Working Paper.
- Franza G. (2018), *Lavoro agile: profili sistematici e disciplina del recesso*, in *Diritto delle Relazioni Industriali*, 3, pp. 774 ff.
- Galinsky E., Aumann K., Bond J.T. (2011), *Times Are Changing: Gender and Generation at Work and at Home*, in www.familiesandwork.org.
- Garofalo D. (2018), *La nuova frontiera del lavoro: autonomo – agile – occasionale*, ADAPT University Press, pp. 345 ff.
- Giubboni S. (2018), *Oltre il Pilastro europeo dei diritti sociali. Per un nuovo riformismo sociale in Europa*, in Bronzini G., *Verso un pilastro sociale europeo? Dopo la Joint Declaration di Göteborg*, Atti del convegno della Fondazione Basso, Roma, 9 maggio 2018, Fondazione Basso, Roma.
- Goldin C., Kerr S.P., Olivetti C., Barth E. (2017), *The Expanding Gender Earnings Gap: Evidence from the LEHD-2000 Census*, in *The American Economic Review*, 107(5), pp. 110-14.
- Hara K., Adams A., Milland K., Savage S., Callison-Burch C., Bigham J.P. (2018), *A data-driven analysis of workers' earning on Amazon Mechanical Turk*, paper presented at the Association for Computing Machinery (ACM) Conference on Human Factors in Computing Systems (CHI), Montreal, 21–26 Apr.
- Howard J. (2017), *Nonstandard work arrangements and worker health and safety*, in *American Journal of Industrial Medicine*, 60, pp. 1–10.
- Huws U., Spencer N., Syrdal D., Holts K. (2017), *Work in the European gig economy: Research results from the UK, Sweden, Germany, Austria, the Netherlands, Switzerland and Italy*, FEPS, UniGlobal and University of Hertfordshire.
- Ilmarinen J.E., Gould R., Jarvikoski A., Jarvisalo J. (2008), *Diversity of work ability*, in *Dimensions of work ability. Results of the Health 2000 Survey*, Finnish centre for Pensions, The Social Insurance Institution, 2008.
- ILÖ (2014), *World of Work Report 2014*, International Labour Office – Geneva.
- ILÖ (2017a), *World Social Protection Report 2017–19: Universal social protection to achieve the Sustainable Development Goals*, International Labour Office – Geneva.
- ILÖ (2017b), *Strengthening social protection for the future of work*, Paper presented at the 2nd Meeting of the G20 Employment Working Group, 15-17 February 2017, Hamburg, 1.

- IL● (2018), *Digital labour platforms and the future of work: Towards decent work in the online world*, International Labour Office – Geneva.
- IL● (2019), *Work for a brighter future – Global Commission on the Future of Work*, International Labour Office – Geneva.
- INPS (2017), *XVI Rapporto annuale*, available at https://www.inps.it/docallegatiNP/Mig/Dati_analisi_bilanci/Rapporti_annuali/INPS_XVI_Rapporto_annuale_intero_030717%20.pdf.
- Ipeirotis P. G. (2010), *Analyzing the Amazon Mechanical Turk marketplace*, in *NRDS*, 17(2), pp. 16–21.
- Kleven H. J., Landais C., Søgaard J.E. (2018), *Children and Gender Inequality: Evidence from Denmark*, NBER Working Paper 24219.
- Kossek E., Valcour M., Lirio P. (2014), *The Sustainable Workforce: Organizational Strategies for Promoting Work-Life Balance and Wellbeing*, in Cooper C., Chen P. (Eds.), *Wellbeing: A Complete reference Guide*, Oxford: Wiley-Blackwell, pp. 295 ff.
- Kountouris N. (2018), *The Concept of 'Worker' in European Labour Law: Fragmentation, Autonomy and Scope*, in *Industrial Law Journal*, Vol. 47, Issue 2, pp. 192 ff.
- Kuek S., Paradi C., Guilford C., Fayomi T., Imaizumi S., Ipeirotis, P. (2015), *The global opportunity in online outsourcing*, World Bank Group, Washington DC, U.S.
- Lord J., Brown R. (2011), *The role of reasonable accommodation in securing substantive equality for persons with disabilities: the UN Convention on the rights of persons with disabilities*, in Rioux M.H., Basser L.A., Jones M. (Eds.), *Critical Perspectives on Human Rights and Disability Law*, Martinus Nijhoff Publishers, Boston.
- Malzani F. (2018), *Il lavoro agile tra opportunità e nuovi rischi per il lavoratore*, in *Diritti Lavori Mercati*, 1, pp. 17 ff.
- Mandin C. (2004), *Active ageing in Europe*, paper for the Espanet Conference, Oxford, 9th -11th September 2004.
- Martin D., O'Neill J., Gupta N., Hanrahan B. (2016), *Tusking in a global labour market*, *Computer Supported Cooperative Work: CSCW: An International Journal*, 25(1), pp. 39–77.
- O'Brien C. (201), *Article 26 – Integration of Persons with Disabilities*, in Peers S., Hervey T., Kenner J., Ward A. (Eds.), *The EU Charter of Fundamental Rights: A Commentary*, Oxford.
- OECD (2016a), *New markets and new jobs*, Background report for the 2016 Ministerial Meeting on the Digital Economy, OECD Publishing, Paris.
- OECD (2016b), *Pisa 2015 Results (Volume I): Excellence and Equity in Education*, Pisa, OECD Publishing, Paris.

- OECD (2016c), *Stimulating digital innovation for growth and inclusiveness: the role of policies for the successful discussion of ICT, DSTI/ICCP(2015)18/FINAL*, in www.oecd.org.
 - OECD (2017a), *Going Digital: Making the Transformation Work for Growth and Well-being*, Meeting of the OECD Council at Ministerial Level Paris, 7-8 June 2017.
 - OECD (2017b), *Pisa 2015 Results (Volume II): Collaborative Problem Solving*, Pisa, OECD Publishing, Paris.
 - OECD (2018a), *Opportunities for All: A Framework for Policy Action on Inclusive Growth*, OECD Publishing, Paris, 23.
 - OECD (2018b), *Good Jobs for All in a Changing World of Work: The OECD Jobs Strategy*, OECD Publishing, Paris.
- Ponzellini A. M. (2012), *Le politiche per l'invecchiamento attivo in Europa*, in Treu T. (Ed.), *L'importanza di essere vecchi. Politiche attive per la terza età*, Bologna, il Mulino, pp. 197 ff.
- Prassl J., Risak M. (2016), *Uber, Taskrabbit, & Co: Platforms as employers? Rethinking the legal analysis of crowdwork*, in *CLL&PJ*, 37(3).
- Reday-Mulvey G. (2005), *Working beyond 60. Key policies and Practises in Europe*, Palgrave Macmillan, Basingstoke.
- Risak M. (2017), *Fair working conditions for platform workers: Possible regulatory approaches at the EU level*, Friedrich-Ebert Stiftung.
- Rodríguez-Piñero Royo M. (2016), *El trabajo 3.0 y la regulación laboral: Por un enfoque creativo en su tratamiento legal*, in *Creatividad y Sociedad*, No. 26, pp. 34–68.
- Romano F. (2017), *Sustainable work: appunti di ricerca per un'analisi giuridica*, in Dagnino E., Nespoli F., Seghezzi F. (Eds.), *La nuova grande trasformazione del lavoro*, ADAPT Labour Studies, e-Book series n. 62, pp. 263 ff.
- Santoro Passarelli G. (2017), *Lavoro eterorganizzato, coordinato, agile e il telelavoro: un puzzle non facile da comporre in un'impresa in via di trasformazione*, in WP CSDL E, Massimo D'Antona".IT, 327/2017;
- Smith A. (2016), *Shared, collaborative and on demand: The new digital economy*, Washington DC, U.S.
- Smith A. (2016), *Shared, collaborative and on demand: The new digital economy*, Washington DC, U.S.
- Spinelli C. (2016), *La nuova disciplina dell'inserimento al lavoro delle persone disabili (d.lgs. n. 151/2015) nel quadro della normativa internazionale e dell'Unione europea*, in Ghera E., Garofalo D. (Eds.), *Semplificazioni-Sanzioni-Ispezioni nel Jobs Act 2*, Cacucci, Bari, pp. 11 ff.

- Stiglitz J.E., Sen A., Fitoussi J. (2009), *Commission on the Measurement of Economic Performance and Social Progress*, Paris.
- Strauss W., Howe N. (2000), *Millennials Rising: The Next Greatest Generation*, Vintage Books, New York.
- Tiraboschi M. (2017), *Il lavoro agile tra legge e contrattazione collettiva: la tortuosa via italiana verso la modernizzazione del diritto del lavoro*, in *WP CSDLE "Massimo D'Antona".IT* – 335/2017.
- Tourres C. (2016), *Lavoro agile e diritto di disconnessione: una proposta francese*, in Dagnino E., Tiraboschi M. (Eds.), *Verso il futuro del lavoro. Analisi e spunti sul lavoro agile e lavoro autonomo*, ADAPT e-Book, n. 50/2016, pp. 64 ff.
- Tran M., Sokas R.K. (2017), *The gig economy and contingent work: An occupational health assessment*, in *Journal of Occupational and Environmental Medicine*, 59(4), pp. 63–66.
- Treu T. (2012), *Introduzione*, in Treu T. (Ed.), *L'importanza di essere vecchi. Politiche attive per la terza età*, Bologna, il Mulino, pp. 23 ff.
- Tullini P. (2016), *Digitalizzazione dell'economia e frammentazione dell'occupazione. Il lavoro instabile, discontinuo e informale: tendenze in atto e proposte di intervento*, in *Rivista Giuridica del Lavoro*, 4, pp. 748 ff.
- Wilde J. (2016), *Precarious 'gigs' are a perfect storm for occupational health, Health and Safety at work*, available at: <https://www.healthandsafetyatwork.com/viewpoint/joanna-wilde/precarius-gigs-perfect-storm> (accessed 14 February 2019).
- Young Lee S., Brand J. (2005), *Effects of control over office workspace on perceptions of the work environment and work outcomes*, in *Journal of Environmental Psychology*, 25, pp. 323 ff.
- Zyskowski K., Ringel Morris M., Bigham J.P., Gray M.L., Kane S.K. (2015), *Accessible Crowdwork? Understanding the Value in and Challenge of Microtask Employment for People with Disabilities*, in *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing*, pp. 1682 ff.

CHAPTER V

PLATFORM WORKERS' NEEDS AND SOCIAL SECURITY CHALLENGES

VALERIA FILÌ

1. Introduction. Non-standard and Self-employed Workers: Emerging Needs and Old Legal Frameworks

Technological innovation is deeply changing the way people work but, at the same time, is creating new problems (Signorini, 2018; Tullini, 2017; Valenduc et al., 2016; ETUI, 2016; Degryse, 2016; McAfee et al., 2014; Rifkin, 2014; McAfee et al., 2011; Rifkin 2014).

New forms of work need new measures of social security protection. These changes are happening at an unprecedented speed, scale, and force and are involving social security systems and institutions (OECD, 2019). Employment will be even more diverse and careers will be less and less linear, but the new phenomena (i.e. the platform/gig economy) cannot hide the most traditional and oldest question: the classification of the employment contracts involved (RECCHIA, 2019, in this book).

It is a well-known fact that companies of the platform economy rely on individuals as independent contractors rather than as employees. Moreover, the status of platform workers is often unclear and multifaceted and discontinuous career paths are emerging (Berg, 2016).

The umbrella term “non-standard employment” is commonly used to group distinct forms of work contracts that deviate from “the standard employment relationship”, understood as work that is full time, indefinite, as well as part of a subordinate relationship between an employer and an employee (ILO, 2016). The ILO classification includes “dependent self-employment” in non-standard employment, the former being an umbrella term that sometimes lacks legal clarity but generally refers to workers that perform services for a business under a civil or commercial contract, although depending on one or few clients for their income or receiving

direct instructions on how work is to be carried out. Non-standard and dependent self-employed workers are typically not covered by the provisions of labour law or employment-based social security, although a number of countries have adopted specific rules to extend some protections even to them (ILO, 2016).

In the background, it remains the situation in which workers are purposefully misclassified as independent, self-employed workers, even though they are, in fact, on a salaried employment relationship. These phenomena lead to problems with regard to inspections, disputes and judicial procedures (RECCHIA, 2019, in this book; Carinci et al., 2015).

Finally, a huge share of digital workers are independent contractors or self-employed workers, who make up a varied galaxy, which becomes more complex due to the digital economy and the “fourth industrial revolution” (Eurofound, 2017; Schwab, 2016).

In the «European Agenda for the collaborative economy» the European Commission underlines that «the collaborative economy often raises issues with regard to the application of existing legal frameworks, blurring established lines between consumer and provider, employee and self-employed, or the professional and non-professional provision of services». Consequently, there emerges «uncertainty about rights and obligations of those taking part in the collaborative economy» [COM (2016) 356 final]. These new phenomena need to be addressed urgently and efficiently. There is a growing number of working people who, due to their type of employment relationship or forms of self-employment, are left without sufficient access to social protection. Only for some people working on non-standard and self-employment contracts are a genuine choice and has positive outcomes. On the contrary, for many others, this way of work is associated with insecurity (ILO, 2016; Eurofound, 2017).

All social security branches will be impacted (health insurance, employment insurance, injury insurance, pension systems) and the boundaries between national labour markets are fading, meaning that a “European Social Security System” is going to become more important than ever in the future.

Even if welfare and social protection schemes differ across the European Union, reflecting different national traditions, political preferences and budgets [COM/2017/0206final; SWD(2016)51final], they were mostly developed for employees in standard employment contracts, who have been facing the same challenges over the last two decades.

Labour markets and societies are evolving quickly (Harari, 2018), with new opportunities and new challenges arising from globalisation [COM/2017/0240 final], the digital revolution, societal and demographic

developments (Livi Bacci, 2015), and the growing number of people in non-standard forms of work (ILO, 2016) or in self-employment (Eurofound, 2013) who are granted little access to social protection.

In this «hyperconnected era» (Floridi, 2015) there are new risks of inter- and intra-generational inequalities, (in-work) poverty, financial un/sustainability of the welfare systems (Ales, 2016; Chieco, 2016; Ferrera, 2012).

The European Pillar of Social Rights [COM(2017) 251] jointly proclaimed in November 2017 by the European Parliament, Council, and Commission set forth principles and rights to support fair and well-functioning labour markets and welfare systems. The aim was to reinforce social rights and deliver a positive impact on people's lives in the short and medium term in a fast-changing world. Economic and social insecurity needs to be addressed as a matter of priority and calls for the creation of a promising economic future for all, granting safeguards for our way of life and provisions of better opportunities for young people. This inter-institutional proclamation focuses on a specific commitment based on the principles of sustainable growth and the promotion of economic and social progress, as well as cohesion and convergence, while upholding the integrity of the internal market (Rasnača Z., 2017).

In order to implement Resolution of 19 January 2017 [P8_TA (2017)0010] on the European Pillar of Social Rights and in order to take account of the new forms of employment, on 16 April 2019 the European Parliament adopted a directive «on transparent and predictable working conditions in the European Union» repealing Directive 91/533/EEC. The purpose of the directive is precisely to improve working conditions by promoting more secure and predictable employment while ensuring labour market adaptability, pursuant to principles No. 5 (on «Secure and adaptable employment») and No. 7 (on «information about employment conditions and protections in case of dismissals») of the aforementioned European Pillar of Social Rights. Sadly, this initiative does not go far enough. On the one hand, its scope does not cover self-employed people, regrettably disregarding that a large part of platform workers are independent contractors. On the other hand, the subject matter deliberately dodges social protection, neither mentioning nor implementing Principle No. 12.

Principle No. 12, included in Chapter III entitled «social protection and inclusion», pays particular attention to «Social protection», prescribing that «regardless of the type and duration of their employment relationship, workers, and, under comparable conditions, the self-employed, have the right to adequate social protection». The purpose clearly is to guarantee

the right of a minimum level of social protection to everybody's employment, regardless of one's task or contract, especially those who are exposed to higher economic uncertainty.

In March 2018, the EU Commission drew up a Council Recommendation proposal «on access to social protection for workers and self-employed» [COM(2018) 132 final] based on Principle No. 12 and on Article 292 TFEU in combination with Article 153, par. 1, lett. c), and par. 2, TFEU as well as with Article 352 TFEU.

The aim of this initiative is to support all self-employed and non-standard workers who are not sufficiently protected by the traditional social protection systems in terms of motherhood and healthcare, unemployment, pensions, poverty and social exclusion, that way tackling the increasing requests for protection.

Nevertheless, we have to remark that employment and social protection policies primarily remain the responsibility of Member States. Article 153, par. 4, TFEU, prescribes that the provisions adopted pursuant to the aforementioned article «shall not affect the right of Member States to define the fundamental principles of their social security systems and must not significantly affect the financial equilibrium thereof».

For that reason, the preferred instrument for the European initiative is a Council Recommendation, providing guidance to Member States on how to achieve access to social protection for all people engaged in independent employment and self-employment. That is why the Commission has been considering this one to be the most effective and proportionate approach at this stage, setting aside a directive which would impose binding outcomes and taking into account the lack of political consensus on the direction of the reforms [2018/0059(NLE), 15254/1/18, 15265/18, 15717/18].

This initiative must be regarded as extremely important, irrespective of the instrument chosen, because it shows how the level of awareness is raised among European institutions and Member States. The hope is that they keep their guard up to prevent any further escalation of poverty, social exclusion, discrimination, and social uncertainty.

The data collected by the EU Commission show that the lack of access to social protection is a major concern for platform workers (e.g. crowd employment, see Eurofound, 2017). That is why it is urgent to attend to them in this fast-moving world of work.

2. Supporting Decent Work and Social Protection for Securing a Dignified Life

It is commonly acknowledged that social protection plays a really important role for workers, in general, as it enables them to reduce vulnerabilities, to enjoy a higher level of income security in the transition between jobs, to compensate for low earnings and to ensure effective access to healthcare and other social services. That is even truer in non-standard and self-employed contracts. The International Labour Organization classified social protection systems for dependent workers in four different types (ILO, 2016):

1. social protection linked to a contract with a specific employer, so based on the employer's liability;
2. social protection linked to salaried employment and mandatorily provided by social insurance;
3. social protection linked to participation in gainful employment, including self-employed, through mandatory or voluntary coverage, subsidized from public funds for those with very low incomes;
4. social protection linked to residency status, not necessarily linked to employment status, mostly financed combining general government revenues, taxes and contribution.

This classification could inspire a similar classification concerning self-employed workers. Indeed, it is possible to find at least four models of social protection systems for independent contractors:

1. social protection based on voluntary private insurance;
2. social protection based on mandatory social insurance;
3. social protection based in part on voluntary private insurance and in part of mandatory social insurance;
4. social protection linked to residency status.

Regardless of the classification adopted, only a system in which different mechanisms are combined can protect effectively non-standard and self-employed workers. A model financed through taxes can ensure basic coverage for a large group of population and promote a safety net, but benefit levels could be rather modest and easily prone to erosion over time. Furthermore, contributory mechanisms, particularly those based on mandatory social insurance, play a key role to ensuring higher levels of protection and benefits. Nevertheless, they are strictly linked to employment,

and in various social security systems they are mainly connected with dependent work. In any case, the weakness or lack of mandatory social insurance schemes and the predominance of private insurance model are likely to exacerbate inequality, creating a deeper gap between those who have only minimum protection and those that can afford private insurance and, accordingly, benefit from larger coverage.

In the end, it can be said that all social protection systems in the EU can be classified to be hybrid, with the basic principles which are still visible and influencing various measures and policies. Moreover, achieving a decent work level for non-standard and self-employed workers passes through the decent level of social security coverage ensured to them (ILO, 2016; Eurofound 2017).

3. Motherhood and Healthcare

The social security systems of EU countries lay down more effective protection for working women during pregnancy and breastfeeding periods than for the self-employed.

Directive 2010/41/EU on equal treatment between men and women engaged in self-employed activity foresees the possibility to grant female self-employed workers and female spouses and life partners of self-employed workers the right to be entitled to maternity leave and benefits for at least 14 weeks (article 8). One weakness of this provision is that Member States may decide whether the maternity allowance is granted on a mandatory or a voluntary basis (Barnard and Blackham, 2015). The data collected by the EU Commission are disheartening. Millions of independent contractors are estimated to be excluded from maternity or paternity benefits [2018/0059 (NLE)].

In 2017 the EU Commission drew up a Directive Proposal on «work-life balance for parents and carers» according to which the coverage by paternity, parental and carers' benefits is set for all workers, including non-standard ones [COM(2017) 253 final]. The procedure of this proposal is still ongoing (Procedure 2017/0085/COD). In addition, the Commission Recommendation 2017/761 of 26 April 2017 on the European Pillar of Social Rights (2017/C 428/09) focuses on work-life balance measures, stating that «parents and people with caring responsibilities have the right to suitable leave, flexible working arrangements and access to care services. Women and men shall have equal access to special leave of absence in order to fulfil their caring responsibilities and be encouraged to use them in a balanced way» (article 9).

Furthermore, the Commission proposal for a Council Recommendation «on access to social protection for workers and self-employed» [COM(2018) 132 final] includes actions «on a mandatory basis» concerning «maternity and equivalent paternity benefits», showing how this topic is regarded as a crucial instrument of public welfare policies.

The high female presence in the share of the labour market connected with the gig and platform economy makes it urgent to define, at the EU level, the key compulsory elements ensuring effective coverage for all people involved, both men and women, and promoting equal treatment and social security.

● On the one hand, it is quite clear that a Council Recommendation is a weak instrument to prevent abuses towards women in non-standard work and self-employment. Nevertheless, it could be an interesting starting point in order to implement safeguards at the EU level. ● On the other hand, the Directive proposal on «work-life balance for parents and carers» could be more hard-hitting and effective, though its scope is necessarily limited to dependent work. The contractual pattern of self-employment makes the application of measures and instruments intended for dependent work rather difficult.

Considering the Italian social security system, the Commission proposal for a Council Recommendation seems to be rather soft, being already in force a stronger level of protection concerning maternity and paternity (Garofalo, 2018a). However, in relation to the above mentioned Directive proposal [COM(2017) 253 final], a fair balance between work and life still has to be found in Italy, and the lack of accessible services such as childcare, assistance for disabled and ageing people has a direct effect on women, their labour market participation and their propensity to have children (Fili, 2017).

Another important aspect of social security systems concerns healthcare. The EU Commission Recommendation 2017/761 referred to before sets forth that «everyone has the right to timely access to affordable, preventive and curative health care of good quality» (Article 16) and that «everyone has the right to affordable long-term care services of good quality, in particular home-care and community-based services» (Article 18).

The Commission proposal for a Council Recommendation cited above, explicitly prescribes that Member State should provide access to adequate sickness and healthcare benefits to all workers and self-employed.

It is important to highlight that the UK National Health Service was created through a 1946 provision, based on the recommendations of Sir William Beveridge's Report, and also other European countries were influenced by that model of universal, publicly financed, health insurance.

Nevertheless, the level of protection is different among the EU Member States still nowadays, and the huge progress made in improving access to healthcare between 2005 and 2009, dramatically halted following the financial and economic crisis (Theodoropoulou, 2018; EU Commission EXPH, 2016; European Commission, 2016; Thomson S. et al., 2015).

There remain the problems of the economic protection for independent contractors for the duration of the incapacity for work caused by sickness or accident, although non-standard employees are granted higher levels of protection [2018/0059 (NLE), p. 77-78].

In Italy, there has been an attempt to set mandatorily social protection measures for independent contractors in case of serious illness causing a relevant income reduction (Law n. 81/2017, art. 6). Nevertheless, this attempt did not come to fruition, whereas there have already been implemented forms of basic, publicly financed, in-cash benefits for work incapacity for “coordinated and continuous collaborators” (Garofalo, 2018).

Generally speaking, it is a fact that the lack of access to health coverage is partly offset by private insurances, determining an increase in the gap between the poor and the rich inside the heterogeneous categories of salaried work and self-employment.

According to data supplied by the EU Commission [2018/0059 (NLE)], in the EU two million people on non-standard contracts and about 12 million self-employed contractors could be at risk of not being covered by sickness benefits, with relevant variations among Member States.

4. Pensions and Old-age Benefits

Research has demonstrated that only a small proportion of platform workers are currently paying into a pension, and where and when old-age benefits are available, it is typically because workers also had employment outside the platform economy (European Parliament, 2017b).

The European Pillar of Social Rights [COM(2017) 251] also takes into account «old age income and pensions» (Principle n. 15): «a) Workers and the self-employed in retirement have the right to a pension commensurate to their contributions and ensuring an adequate income. Women and men shall have equal opportunities to acquire pension rights. b) Everyone in old age has the right to resources that ensure living in dignity».

Even if pension systems vary across EU Member States (PENSIONSEUROPE, 2019), it is a fact that in the last decades, early retirement policies have been phased out and replaced by initiatives aimed at promoting longer and healthier working lives.

Against this background, people in non-standard employment or in self-employment are often mandatorily and formally covered by social protection against old-age, but they are not able to achieve effective coverage because they cannot fulfil the criteria to access benefits. This state of affairs may be due to rules governing the contributions and entitlements which are more difficult to meet for people in non-standard employment or self-employment. Additionally, in some cases, it may also be more difficult for them to fulfil the requirements laid down for standard employees, because temporary employees and independent contractors are more frequently affected by unemployment, making it more difficult for them to accumulate necessary qualifying periods for unemployment insurance and for pensions (European Commission, 2018).

In the Council Recommendation Proposal «on access to social protection for workers and self-employed» [COM(2018) 132 final] we cannot find the word “pensions”, but the more vague “old-age benefits”, which is included in the list of social protection areas.

At any rate, the principle of transferability could be an important instrument to create a social protection net for the weakest workers in the labour market. It refers to the possibility to transfer accrued entitlements to another scheme and to make qualifying periods in previous employment status (or in concomitant employment statuses) count towards the qualifying periods in the new status.

Currently, there is no requirement in EU law to ensure the transferability of occupational pension rights, but Directive 2014/50/EU on the portability of supplementary pension rights encourages Member States to improve it in favour of dependent workers. Accordingly, the above mentioned Council Recommendation proposal introduces the principle of transferability of entitlements, which should really contribute to effective coverage for all workers.

In Italy, there are three measures that are inspired by the principle of transferability: «*ricongiunzione*» (Laws No. 29/79 and No. 45/90), «*totalizzazione*» (Legislative Decree No. 42/2006), and «*cumulo*» (Law No. 232/2016, art. 1, c. 195). These three measures aimed at counterbalancing fragmented careers, which characterize precarious workers, creating a legal fiction concerning the continuity of contributions needed to meet pension requirements (Cinelli, 2018; Persiani-D'Onghia, 2018; Pessi, 2016).

Finally, it is a fact that non-standard and self-employed workers are exposed to low incomes and a high risk of poverty during their working life, that is likely to manifest in old age. Moreover, older women face a higher risk of poverty than men, because the average pension income for women is much lower than for men. Gender discrimination during

working life necessarily has got a deep impact on the retirement period (European Commission, 2018).

To conclude, it is important to underline that, generally speaking, platform work has low rates of pay, usually below the level of the equivalent work in more traditional forms of employment and often below the hourly rate of any minimum wage arrangements. Evidence also suggests that workers in the platform economy set aside limited savings to be paid into pensions or insurances.

One reason for low pay could be the lack of job opportunities, another that EU-based workers may find themselves competing with workers from low-wage economies in the developing world.

The high rates of labour turnover in the platform economy could be explained by the insecurity of platform work combined with the low rates of pay. That is why data show that quite a large number of people try out platform work briefly, but, if possible, do not go on to work regularly in this way (European Parliament, 2017b).

Therefore, in-work poverty turns into “in-pension poverty” and, given the scale of the phenomenon, the issue of social protection is not only a problem for the individuals concerned, but might contribute to a significant financial burden for society, if not dealt with promptly.

In Italy, there are various measures aimed to protect retired people from poverty, which include raising the lowest pensions, providing minimum monetary support (so called «*integrazione al minimo*» Law No. 638/1983, art. 6, and «*pensione di cittadinanza*» Law No. 26/2019), or guaranteeing a last resort pension scheme, even to those who did not meet the minimum contribution requirements necessary to receive a pension («*assegno sociale*» Law No. 335/1995) (Cinelli, 2018; Persiani-D’Onghia, 2018; Pessi, 2016). It remains to be seen if the level of these last resort pensions is adequate to lift the poor out of the condition of hardship.

5. Social Exclusion between Unemployment and In-work Poverty

Article 3 of the EU Treaty states that the EU’s aim is to promote the well-being of its peoples, social justice and protection, equality between women and men, solidarity between generations and protection of the rights of the children and to combat social exclusion and discrimination. Article 9 of the TFUE sets that «the Union shall take into account requirements linked to the promotion of a high level of employment, the guarantee of adequate social protection, the fight against social exclusion, and a high level of education, training and protection of human health».

Moreover, the subsequent article 151 prescribes that «the Union and the Member States (...) shall have as their objectives the promotion of employment, improved living and working conditions, so as to make possible their harmonisation while the improvement is being maintained, proper social protection, dialogue between management and labour, the development of human resources with a view to lasting high employment and the combating of exclusion».

These principles, carved in the fundamental treaties, highlight how important is for EU institutions and Member States to face social exclusion because poverty and social deprivation have led to an increase in uncertainty and insecurity in the whole communities.

Social hardship is easily connected not only to unemployment but also to in-work poverty, given the growth of the working poor, a new alarming category in which a lot of non-standard and self-employed workers are included.

The instruments to face and tackle these phenomena are different and the European institution actions are clearly illustrated in the Europe 2020 Strategy [COM(2010) 2020] (see *CARCHIO*, in this book).

Furthermore, the European Pillar of Social Rights [COM(2017) 251] lays down a specific provision concerning unemployment and poverty.

Principle No. 13 is entitled “Unemployment benefits” and sets forth that «the unemployed have the right to adequate activation support from public employment services to (re)integrate into the labour market and adequate unemployment benefits of reasonable duration, in line with their contributions and national eligibility rules. Such benefits shall not constitute a disincentive for a quick return to employment».

The EU Court of Justice held that «just as an employed worker may involuntarily lose his job following, for example, his dismissal, a person who has been self-employed may find himself obliged to stop working. That person might thus be in a vulnerable position comparable to that of an employed worker who has been dismissed. In those circumstances, there would be no justification for that person being ineligible for the same protection, as regards retention of his right of residence, as that afforded to a person who has ceased to be employed» (EUCJ, 20.12.2017, case C-442/2016, *Gusa vs. Minister for Social Protection, Ireland*).

According to data supplied by the EU Commission [2018/0059 (NLE)], in the EU eight million workers employed on non-standard contracts and about 17 million independent contractors could be at risk of not being covered by unemployment benefits, with significant cross-country differences and, in 2017, the self-employed did not have any access to unemployment protection in eleven Member States. The Council

Recommendation proposal «on access to social protection for workers and self-employed» [COM(2018) 132 final] expressly mentions «unemployment benefits» in the list of branches of social protection. However, the wording «on a voluntary basis» is used, taking into account that the unemployment risk is more difficult to evaluate and control in case of self-employment and is more intimately related to entrepreneurial risk.

For these reasons, more flexibility is given to Member States in implementing the scheme through the possibility to extend coverage to the self-employed on a voluntary basis. This state of affairs also reflects the heterogeneity of the self-employed and would respect their freedom of choice.

Currently, the social protection against unemployment is differently set among the EU countries, or even not covered at all (Eurofound, 2017). So, in many Member States, access to benefits in case of unemployment would be an important step forward to a decent work standard.

Non-standard workers and self-employed people are exposed to greater economic uncertainty due to the individual nature of risk. Only the richest people can deal with these risks on an individual basis, while most individuals are exposed to a significantly higher risk of poverty in most Member States.

The data [2018/0059 (NLE)] show that the risk of being poor among non-standard employees and the self-employed is higher in all countries, as compared to workers with a permanent and full-time job. The European Pillar of Social Rights [COM(2017) 251] proclaims the principle of “fair wages” and “minimum income”. Pursuant to principle No. 6 «workers have the right to fair wages that provide for a decent standard of living» and «in-work poverty shall be prevented». It is interesting to note a similarity between the second paragraph of the above-mentioned principle and Article 36 of the Italian Constitution. Both provisions focus on the idea that an “adequate minimum wage” shall be ensured «in a way that provides for the satisfaction of the needs of the worker and his/her family». That means that a non-contractual element, the family, becomes part of those interests related to the employment contract.

Under Principle No. 14, the idea of a “minimum income right” is clearly expressed: «everyone lacking sufficient resources has the right to adequate minimum income benefits ensuring a life in dignity at all stages of life, and effective access to enabling goods and services. For those who can work, minimum income benefits should be combined with incentives to (re)integrate into the labour market».

These are significant statements that could have serious consequences on the social systems of the EU countries. On the one hand, we cannot

ignore that any taxed-funded safety net system of last resort necessarily contributes to higher public expenditure. In most EU countries, social assistance, minimum income and/or universal minimum healthcare benefit packages are granted even if there is a lack of social contributions, creating problems concerning the sustainability of the social security systems (Eurofound, 2017).

In Italy, a “citizenship income” has been recently granted (pursuant to Law No. 26/2019); it is a controversial form of basic income that will have a serious impact on the state coffers. Minimum income policies are set in other Member States and are always accompanied by a lively debate.

Alleviating poverty is one of the key concerns of welfare states and assessing the success of these policies in reaching the objective is a key question for policymakers and policy analysts. Minimum income schemes are accused of missing their objective to reduce poverty and exclusion for three main reasons: because the amounts are not adequate to lift the poor out of a condition of poverty; because they do not cover those in need; and because they do not reach the people they target. There is a strong problem of effectiveness concerning this kind of measures (European Parliament, 2017a).

Yet the reference made in Principle No. 14 to the incentives to re/integrate the poor into the labour market is important to link passive policies (income support) to active policies (job search support). A general issue emerging from the EU debate is that the measures introduced should be part of a comprehensive anti-poverty strategy intended to promote active inclusion (see CARCHI 2019, in this book). That means not only providing resources but also reducing individuals' need for help, especially by supporting their access to the labour market. An active and inclusive approach can surely create employment opportunities and promote the integration of those individuals excluded from the labour market and at a high risk of falling into poverty and social hardship. Yet it is also crucial to guarantee adequate income for those people in vulnerable situations, for whom a return to work is not possible or no longer an option. This specific target group needs, first of all, to be supported by good-quality social services (e.g. housing, healthcare, education and childcare).

Too often, the active inclusion approach has meant the introduction of measures narrowly focused on employment, increasing conditionality and sanctions, in which to take up a public work is a counterpart for receiving minimum income, even when there are clear indications that these workfare measures do not increase the chances of the poorest to return to the labour market (European Commission, 2019).

In this regard, Italian law stands at the forefront, considering that Law n. 81/2017 sets forth that public and private employment offices and agencies should provide specific employment services not only to those seeking a job as a salaried worker but also to those willing to work as independent contractors. The aim is to facilitate access to job-related information, making the labour market more transparent and competitive and bearing in mind that even the self-employed need help and assistance.

6. Conclusions

Social security measures are intended to protect people against the financial implications of social risks and to function as a buffer during economic downturns. For these reasons, the social security system plays an essential role for competitiveness and sustainable growth, on the one hand, facilitating labour market participation, even a better allocation of the labour force, and, on the other hand, preventing or alleviating poverty and social exclusion (ILO-OECD, 2018).

Globalisation, technological developments and demographic aging have driven changes that are not yet properly addressed by EU institutions and Member States. The result is that an increasing number of individuals and families have insufficient social coverage simply because of the traditional approach of the social security systems, which were not tailored to the specificities of workers in non-standard employment. Women and young people are generally more fragile in the labour market and more exposed to non-standard and less protected jobs, so they are severely affected by the transformations referred to above.

In the long run, negative consequences are also foreseeable in relation to the sustainability of the traditional social security systems. Workers will ask for safety nets, but if they do not pay enough contributions, they will not be able to meet their requests. This possibility can widen the distance between the poor and the rich in our societies, an aspect which is dangerous, as Chancellor Bismarck has taught us.

In addition, the ageing of the European population represents a time bomb for the financial sustainability of welfare systems. In the EU between 2023 and 2060 larger cohorts will retire, but they are replaced by smaller ones of younger workers and labour migrants from third countries [SWD(2016)51final].

On a final note, it is clear that the legal framework in which platform workers' needs are emerging is not strong and sound enough, compelling those involved to survive in a "non-comfort zone" and the social security

systems to meet the challenges to be fairer to these growing number of individuals, who can be seen as “children of a lesser God”.

The initiatives which are undertaken by EU institutions and international organizations (the ILO, OECD) show that the levels of attention and alarm are high with regard of these issues. The collaborative/platform economy pushes for the removal of national boundaries, increasing the need for coordination between social protection systems among EU Member States. As one might argue, the world has never been so small.

Recognising the importance of these challenges, the G20 Ministerial Declaration “Towards an Inclusive Future: Shaping the World of Work”, committed to «shaping the future of work by harnessing opportunities of structural change for new and better jobs and reducing risks through a focus on policies for skills development, effective social protection for all, and job quality», identifying «gaps in social protection resulting in part from the rise in non-standard forms of employment and the growing platform economy» (G20, 2017, p. 3 and 6) as two of the critical challenges requiring an effective response. These deliberations also build on the G20 Policy Recommendations for Promoting More Equitable and Sustainable Social Protection Systems, adopted in 2016 (G20, 2016), as well as on the G20 Framework on Promoting Quality Jobs (G20, 2015) (ILO-OECD, 2018). Adapting social protection systems to ensure that all workers, including those in non-standard work and self-employed, benefit from adequate levels of protection is the aim of the more recent initiatives, but, realistically, the main problem concerns the financial resources because of the costs (and the sustainability) of social rights (AIDLASS, 2015). As it is in the field of health and safety at work (see CAFFI 2019, in this book), talking about social security systems means facing the harsh reality. In other words, the situation in which those who economically exploit the work of others avoid responsibilities and the (social and economic) costs of the resulting job insecurity is not only unfair but also unsustainable. It is time to rethink and reshape the role and the burden of the contribution from each entity making use of precarious work (Garofalo, 2018b). Raising the inadequate level of contributions for non-standard and self-employed workers without affecting the public welfare systems could be key to striking a balance between social security and sustainability.

References

- Ales E. (2016), Diritti sociali e discrezionalità del legislatore nell'ordinamento multilivello: una prospettiva giuslavoristica, in AA.VV., Lavoro, diritti fondamentali e vincoli economico-finanziari nell'ordinamento multilivello, Atti delle giornate di studio di diritto del lavoro - AIDLASS, Foggia, 28-30 maggio 2015, Giuffè, Milano, 241, <http://www.aidlass.it/wp-content/uploads/2016/06/AIDLASS-2015.pdf>
- Barnard C. and Blackham A. (2015), Self-Employed. The implementation of Directive 2010/41 on the application of the principle of equal treatment between men and women engaged in an activity in a self-employed capacity, European Commission – European network of legal experts in the field of gender equality, Brussels.
- Berg J. (2016), Income Security in the On Demand Economy: Findings and Policy Lessons from a Survey of Crowdworkers, ILO, Genève, https://www.ilo.org/travail/%20whatwedo/publications/WCMS_479693/lang-en/index.htm
- Carinci F., Menegatti E. (2015), Labour Law and Industrial Relations in Italy, Wolters Kluwer, Milano.
- Chieco P. (2016), Crisi economica, vincoli europei e diritti fondamentali dei lavoratori, in AA.VV., Lavoro, diritti fondamentali e vincoli economico-finanziari nell'ordinamento multilivello, Atti delle giornate di studio di diritto del lavoro - AIDLASS, Foggia, 28-30 maggio 2015, Giuffè, Milano, 5, <http://www.aidlass.it/wp-content/uploads/2016/06/AIDLASS-2015.pdf>
- Cinelli M. (2018), Diritto della previdenza sociale, Giappichelli, Torino.
- Degryse C. (2016), Digitalization of the economy and its impact on labour markets, Working paper 2016.02, ETUI - European Trade Union Institute, <https://www.etui.org/Publications2/Working-Papers/Digitalisation-of-the-economy-and-its-impact-on-labour-markets>
- ETUI – European Trade Union Institute (2016), Shaping the new world of work. The impacts of digitalisation and robotisation, Conference 27-19 June 2016, <https://www.etui.org/Events/Shaping-the-new-world-of-work.-The-impacts-of-digitalisation-and-robotisation>
- Eurofound (2013), Self-employed or not self-employed? Working conditions of 'economically dependent workers', Dublin.
- Eurofound (2017), Exploring self-employment in the European Union, Luxembourg.
- European Commission (2016), Expert Panel on Effective Ways of Investing in Health, Access to health services in the European Union, (Commission decision 2012/C 198/06)

- European Commission (2016), Strategic Plan 2016-20 - Directorate General for Health and Food Safety, Ref. Ares(2017)6260978 - 20/12/2017.
- European Commission (2018), Pension adequacy 2018, vol. 1, Brussels.
- European Commission (2019), Peer Review on “Minimum income benefits – securing a life in dignity, enabling access to services and integration into the labour market” – Synthesis Report, Brussels
- European Parliament (2017a), Minimum Income Policies in EU Member States, edited by Directorate General for Internal Policies – Policy Department, Brussels.
- European Parliament (2017b), The social protection of workers in the platform economy, edited by Directorate General for Internal Policies – Policy Department, Brussels.
- Ferrera M., Fargion V., Jessoula M. (2012), Alle radici del Welfare all’italiana. Origini e futuro di un modello sociale squilibrato, Collana storica della Banca d’Italia, Marsilio, Venezia, <https://www.bancaditalia.it/pubblicazioni/collana-storica/alle-radici-del-welfare-all-italiana/Alle-radici-del-welfare.pdf>
- Filì V. (2017), Un reddito minimo di maternità come antidote alle discriminazioni e alla bassa natalità, in Bonardi ●. (edited by), Eguaglianza e divieti di discriminazione nell’era del diritto derogabile, EDIESSE, Roma, 319 - 336.
- Floridi L. (edited by) (2015), The ●nlife Manifesto. Being human in a hyperconnected era, Springer ●pen, eBook, www.springer.com/in/book/9783319040929.
- Garofalo D. (2018b), Lavoro, impresa e trasformazioni organizzative, in AA.VV., Frammentazione organizzativa e lavoro: rapporti individuali e collettivi, Atti delle giornate di studio di diritto del lavoro - AIDLASS, Cassino, 18-19 maggio 2017, Giuffè, Milano, 17, <https://www.aidlass.it/wp-content/uploads/2017/04/GAROFALO-RELAZIONE-AIDLASS-9-5-2017.pdf>
- Garofalo D. (edited by) (2018a), La nuova frontiera del lavoro: autonomo – agile – occasionale, ADAPT University Press, Bergamo (IT).
- Graeber D. (2018), Bullshit Jobs: A Theory, Simon & Schuster, NY (NY, US).
- Harari Y. N. (2018), 21 Lessons for the 21st Century, Spiegel & Grau - US, Jonathan Cape - UK, Giunti Editore/Bompiani - IT.
- IL● (2016), Non-standard employment around the world: understanding challenges, shaping prospects, International Labour ●ffice, Genève (CH).

- IL●●ECD (2018), Promoting adequate social protection and social security coverage for all workers, including those in non-standard forms of employment, Paper presented at the 1st Meeting of the G20 Employment Working Group, ● - 22 February 2018 Buenos Aires, Argentina, <https://www.ilo.org/>
- Livi Bacci M. (2015), *Il pianeta stretto*, Il Mulino, Bologna.
- McAfee A., Brynjolfsson E. (2011), *Race against the Machine*, Digital Frontier Press, Massachusetts (US).
- McAfee A., Brynjolfsson E. (2014), *The second Machine Age*, US.
- ECD (2019), *Measuring the Digital Transformation: a Roadmap for the Future*, ●ECD iLibrary.
- PENSI●NSEUR●PE (2019), *PensionsEurope ●overview: Cross-Border Pension Funds, 2019*, www.pensioseurope.eu
- Persiani M., D'●nghia M. (2018), *Fondamenti di diritto della previdenza sociale*, Giappichelli, Torino.
- Pessi M. (2016), *Lezioni di diritto della previdenza sociale*, Wolters Kluwer – Cedam, Milano.
- Rasnača Z. (2017), Bridging the gaps or falling short? The European Pillar of Social Rights and what it can bring to EU-level policymaking, in Working paper 2017.44, ETUI - European Trade Union Institute, in <https://www.etui.org/Publications2/Working-Papers/Bridging-the-gaps-or-falling-short-The-European-Pillar-of-Social-Rights-and-what-it-can-bring-to-EU-level-policymaking>
- Rifkin J. (2011), *The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy and the World*, Palgrave Macmillan, US.
- Rifkin J. (2014), *The Zero Marginal Cost Society: The Internet of Things, The Collaborative Commons, and the Eclipse of Capitalism*, Palgrave Macmillan, US.
- Rifkin J. (2015), *La fine del lavoro*, Mondadori, Milano.
- Schwab K. (2016), *The fourth Industrial Revolution*, World Economic Forum, NY (NY, US).
- Signorini E. (2018), *Il diritto del lavoro nell'economia digitale*, Giappichelli, Torino (IT).
- Theodoropoulou S. (2018), Drifting into labour market insecurity? Labour market reforms in Europe after 2010, in Working paper 2018.03, ETUI - European Trade Union Institute, in <https://www.etui.org/Publications2/Working-Papers/Drifting-into-labour-market-insecurity-Labour-market-reforms-in-Europe-after-2010>
- Thomson S., Figueras J., Evetovits T., Jowett M., Mladovsky P., Maresso A., Cylus J., Karanikolos M., Kluge H. (2015), *Economic crisis, health*

- systems and health in Europe: impact and implications for policy. Maidenhead: Open University Press.
- Tullini P. (edited by), (2017), *Web e lavoro. Profili evolutivi e di tutela*, Giappichelli, Torino (IT).
- Valenduc G., Vendramin P. (2016), *Work in the digital economy: sorting the old from the new*, in Working paper 2016.03, ETUI - European Trade Union Institute, in <https://www.etui.org/Publications2/Working-Papers/Work-in-the-digital-economy-sorting-the-old-from-the-new>

CHAPTER VI

SOME REFLECTIONS ON THE UTILIZATION OF ARTIFICIAL INTELLIGENCE IN LIBERAL PROFESSIONS

GIORGIA ANNA PARINI

1. Introduction

The law is currently facing various challenges related to technological innovation, in particular the increasing utilization of forms of Artificial Intelligence (Turing, 1950, pp. 443-450): a lawyer considering this trend will be confronted with various problems when evaluating the ability of the legal order to offer new remedies (Santosuosso, 2013, p. 146).

Without neglecting the complex ethical issues raised by this phenomenon, this quickly and consistently evolving scenario impacts on different branches of the law, including, but not limited to, civil liability law, insurance law, data protection and privacy law, intellectual property law, and, in a broader sense, contract law, labour law and transportation law. In particular, the suitability of the laws regulating civil liability and insurance contracts is disputed.

Machine learning has perhaps the most significant and disruptive impact on the law as we know it. The ability of Artificial Intelligence (AI) systems to evolve and learn on the basis of their experience, and to adopt autonomous decisions, sometimes in an unpredictable way, raises issues – also in terms of legal liability – which should be solved to meet the need for legal certainty.

These topics are receiving increasing attention from European lawmakers. In addition to regulating those individual sectors impacted by AI (through Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery; Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety; Directive 1999/44/EC of the European Parliament and of

the Council of 25 May 1999 on certain aspects of the sale of consumer goods and associated guarantees) the European Parliament adopted Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics. This instrument essentially aims at establishing uniform and tailored rules for a phenomenon having ethical and legal relevance.

At the same time, the considerable use of autonomous and intelligent machines raises concerns for their direct and indirect effects on labour and society as a whole. Machines are not employed only in the production of goods – thus replacing human beings – but they are more and more involved in the provision of services. In the latter field, machines are precious for their ability to quickly process data and – thanks to the Web and big data analysis – to keep themselves updated, gaining knowledge well beyond human capacity.

It should be noted that the widespread usage of AI systems does not only support professionals in repetitive tasks but even replaces them entirely. This aspect requires some reflection, especially in respect of the performance of activities which have traditionally been reserved to “protected professions”, with further problems related to contractual process and liability (Parisi, 1987, *passim*; Tosi, 1993, *passim*; Tosi, 2005, *passim*; Tosi, 2006, *passim*; Clarizia, 2007, *passim*).

2. The Contractual Process and the Consent Dogma

Prior to any consideration of the legal issues raised by the provision of intellectual services by a machine, it is necessary to clarify some aspects related to the contractual process and the parties involved.

For years, increasing use of technological tools has been reshaping contractual relationships, since negotiations now take place online and the identification of the contracting parties can be difficult (Finocchiaro, 2018, p. 441 *ss.*). Parties often hide their identity, a crucial aspect to understand applicable legislation. People negotiating online could also be minor, and this circumstance may affect the validity of the contract. Furthermore, depending on the subjects operating online, contracts can be divided into the following categories: professionals and consumers (B2C) and contracts between professionals (B2B); contracts concluded between consumers (C2C); contracts concluded between professionals and the public administration (B2A/B2G) and contracts concluded between peers (P2P) (Roppo, 2013, pp. 167-186).

Concurrently, the contractual process is influenced, putting further strain on legal scholars, who are left wondering whether the consent rule

can still be deemed valid, and whether Articles 1326 et seq. of the Italian Civil Code can still apply (Pasquino, 1990, p. 697 ss.; Nepor, 1999, p. 217 ss.). This state of affairs has led distinguished jurists to classify online contracts as consent-free and as a sum of mere unilateral decisions (Irti, 1998, p. 347 ss.; Irti, 1999, 273 ss. Contra, Oppo, 1998, p. 525 ss.).

This conclusion is far-fetched, however, since online negotiation takes place within the limits of the traditional agreement process. Even if a subject's will is verbal, it still takes place *per facta concludentia*, for example by pointing and clicking in a typical e-commerce scenario. By way of pointing and clicking, one party makes a public, fully comprehensive offer, while another party accepts that offer.

The contract can then be concluded in the different ways regulated by Article 1327: for example, the accepting party can pay the contract fee immediately. Otherwise, when contractual obligations regard the proposing party only, Article 1333 will apply.

We have to consider the protections provided for by Article 11 of Directive 2000/31/EC on electronic commerce, whenever the recipient of the service places his order through contracts governed by family law or by the law of technological means. In more complex cases, a machine will directly conclude or negotiate a contract, an example being software programmed to order goods under certain conditions. Some scholars have attributed at least a part of the consent process to these machines (Nervi, 2002, p. 114 ss.; Cavaliere, Iaselli, 2013, p. 1571 ss.).

However, this argument is not persuasive, since consent stems exclusively from the user, who made a contractual decision in advance and started the process, providing the Artificial Intelligence tool with all the commands and options.

The theory of the machine acting as a representative of the user must equally be rejected, since no substitution takes place in the contractual process (Finocchiaro, 1997, pp. 60-78). The AI system, indeed, does not manifest a will of its own; above all, it is not a legal subject and, as such, cannot legally act or be held liable. Therefore, no formal/substantial contractual party dichotomy exists (Borruso, 1988, p. 259), as the machine is rather a medium for someone else's will, *id est a sui generis nuncio* – without the legal personality or the ability to act – with no role in the consent process. Therefore, any consideration on the validity of the consent or the capacity of the subject must be referred to the user.

Similar cases are not irrelevant, in light of the ever-growing usage of the Internet of Things and of IP-address devices with the ability to navigate the Internet and order goods after the user has depleted its stock. Smart contracts, boosted by blockchain technology, must also be taken

into consideration. Smart contracts are the product of algorithms automatically executing a given task – under certain conditions and predefined rules – according to an if-then mechanism (Szabo, 1997, *passim*; Raskin, 2017, pp. 305-341; Cuccuru, 2017, pp. 107-119; Di Sabato, 2017, pp. 378-402). Again, automatic processes are triggered by a contractual decision taken in advance. Therefore, “smart contracts” are not contracts, but rather the implementation of previous agreements (Caggiano, 2018, pp. 1152-1157).

However, in the future, increasingly sophisticated AI mechanisms, with the ability to learn from experience and interact with the outside world in increasingly independent terms, are likely to be more difficult to govern under the traditional rules. It will become harder to rationalize the user’s liability and their obligation to enforce a contract concluded by a machine, acting under its strategy and in a somehow unpredictable way.

In similar cases, the user’s freedom of contracting is affected in a peculiar fashion. A user choosing these sophisticated AI tools will become a contracting party and agree to a contract, although the terms and conditions are partly out of his control. However, his obligations under the contract will be valid and enforceable, since the protection of the legitimate expectations of the other party is paramount.

It is necessary to adjust the principle of legitimate expectation, regarded as a form of protection for the person receiving the declaration and adhering to the principle of self-responsibility of those who, with their conduct, determined the establishment of this expectation (Ruscello, 2017, p. 128).

3. Legal Requirements to Practice Protected Professions and the Widespread Use of Artificial Intelligence

As said above, many AI mechanisms can provide answers to specific queries, thus ensuring the automation of certain services. These mechanisms include so-called “chatbots”, i.e. robots which communicate using a chat function and can understand, interpret, and contextualize human language, thus dealing with questions. More specifically, it is increasingly common to use AI tools to provide services which have traditionally been performed by professionals. The user exploiting AI tools to provide these services can be someone with no sector-specific competence, and therefore not a professional. There are many examples, including Eliza, a chatbot simulating a dialogue with a Rogerian psychologist; or Woebot, the Facebook chatbot. Created by Alison Darcy – a Stanford University psychologist – Woebot assists users using cognitive behavioural therapy

(CBT) methods. Similarly, the creation of accounting chatbots or AI-based invoice systems is increasingly common.

Without prejudice to the fact that the user remains the only contracting party, with AI systems being mere executors of the contracts, it is still dubious whether this kind of provision of services is lawful under Italian law. In Italian legislation, liberal professions and contracts for the provision of intellectual services are governed by Art. 2229 et seq. of the Italian Civil Code (Santoro Passarelli, 1968, p. 24 ss.; Lega, 1974, passim; Ibba, 1982, p. 354; Perulli, 1996, p. 351; Anastasi, 1991, p. 3; Musolino, 2009, p. 407 ss.; Salomone, 2010, passim).

The contract for the provision of intellectual services is dealt with through a specific set of rules, due to the nature of such services and, specifically, their intellectual character. Special expertise is thus required from the professional involved (Riva Sanseverino, 1963, p. 191 ss.).

In this contract, the service is performed by a self-employed, independent professional. Furthermore, in order to practice some professions – so-called “protected professions” – it is necessary to be a member of a professional association. These registered professionals are subject to the control and the disciplinary jurisdiction of their respective association. This system ensures public protection of the customer and makes the admission to a professional association dependent upon specific prerequisites, especially of a technical nature (Riva Sanseverino, 1963, p. 194 ss.). This is true even if the enrolment in a register is no longer the *conditio sine qua non* to ensure one’s expertise (Mazzariol, 2013, p. 423).

Whoever practices a protected profession without having the legal requirements to do so not only faces criminal sanctions (Article 348 of the Italian Penal Code) but loses his/her right to be paid any professional fee. According to Article 2231 of the Civil Code, any contract concluded under these conditions will be null and void for the violation of mandatory provisions (Carnelutti, 1953, p. 313 ss.; Lega, 1959, p. 17).

However, there will be a violation of mandatory legal provisions only in the event of services involving registered professionals. Moreover, contracts for the provision of AI services are based on personal trust (*intuitu personae*) (Cataudella, 1972, p. 631), *id est* on the customer’s confidence in a single professional. Therefore, under Article 2232 of the Italian Civil Code, the professional must perform his contractual task personally; he can use substitutes or associates – under his direction and responsibility – only when this is allowed by the contract or by custom, or by the type of task (Giacobbe, 1987, p. 1074). These substitutes and associates must fulfil the same legal requirements in place if they needed to perform the task on their own: relying on non-registered associates is

tantamount to performing a special activity without being admitted to the relevant professional association.

When applying these legal rules to the circumstances discussed in this paper, it is necessary to identify the activities for which people need certain professional requirements. This is possible by looking at applicable legislation.

Undoubtedly, this makes the widespread usage of AI tools subject to legal constraints. Providing specific services without having the relevant legal requirements is not allowed, even when dealing with AI tools. In such a case, the contract would be null and void, and no professional fee is due. However, many of these services are offered for free, at least apparently, thus diminishing the implication of the contractual violation, but not the criminal consequences of practicing a protected profession illicitly.

In reality, however, those who provide these services, while not demanding a fee, obtain indirect benefits. Firstly, there is an increase in the number of users. Secondly, they come in possession of a series of information – i.e. users' preferences – having significant commercial value, thus obtaining economic advantages, albeit indirect ones (Resta, Zeno-Zencovich, 2018, pp. 411-440).

Even when the use of a machine as a substitute for a professional is lawful, it still appears inappropriate. Intellectual services, in addition to knowledge and data processing, can also require a degree of creativity and discernment, which is unlikely to be found in AI mechanisms. At least for the time being, AI tends to be rigid and hardly flexible.

Furthermore, a client assisted by a professional will be, in the end, better protected, since professionals are compelled to be covered by an insurance (D.P.R. 7 August 2012, n. 137, article 5). Should the client be damaged by a professional's contractual failure, it would be easier for him to obtain compensation.

Instead, it is not inappropriate to use AI tools in support of a professional, helping the latter to perform the most repetitive tasks and focus on more intellectually stimulating activities. The entire activity of AI would remain under the supervision of the registered professional. AI could not even be regarded as an associate to the professional, since it is not an individual, but rather a mere supporting tool. Even in this case, AI undeniably has an impact on the labour market, which will require a response, especially in the long run.

4. Artificial Intelligence as a Substitute for Lawyers

What has been said above applies also to the legal profession, since AI tools have become a familiar presence even within law firms. A common example is the IT systems for contract drafting and analysis. Also in this field – especially in North America – AI mechanisms do not merely support the professional in performing his task but replace him, with obvious legal implications.

In Italy, under Article 2, paragraph 3 of Law n. 247 of 31 December 2012, outlining a “New Regulation of the Legal Profession,” in order to practice as a lawyer, one must be a member of the local professional association. Therefore, activities that can be performed only by qualified lawyers cannot be carried out by unqualified subjects, let alone by a chatbot or any other AI system. Otherwise, the aforementioned criminal penalties will apply.

Under Article 2, paragraph 5 of the foregoing provision, “the assistance, representation, and defence in any judicial proceedings or ritual arbitration are the preserve of lawyers, with the exceptions provided by the law”. This includes any activity to be performed in court or any form of arbitration supervised by members of the bar.

Furthermore, Article 2, paragraph 6 of the cited Professional Law adds that “besides the cases requiring sector-specific legal competence – the latter being entrusted to other professionals by law and subject to a professional regulation – any activity related to legal advice, even outside jurisdictional proceedings, whenever performed in a consistent, systematic and organized way, must be carried out by a lawyer”. The perimeter of private activities is thus expanded.

This makes the lawfulness of AI tools such as DoNotPay, a widely known application created by a Stanford student, debatable. DoNotPay is a chatbot-based system supporting different activities, including appeals against “tickets”.

For example, an AI mechanism could be used to draft an appeal against an administrative penalty of 2,000,00 euros for speeding over 60 km/h, as provided by Article 142, paragraph 9 bis of the Italian Highway Code (Decree n. 285 of 30 April 1992).

As said above, Article 2, paragraph 5 of the Professional Law limits to lawyers the defence in legal proceedings. However, for appeals against administrative penalties, the combined interpretation of Article 204 bis of the Highway Code and Article 7, paragraph 8 of Decree n. 150 of 1 September 2011 allows the involved person to file an appeal and defend himself or herself in the court of first instance.

In light of these provisions, this activity does not require a lawyer or another registered professional; therefore, it could be performed by an AI system. Confirming this is the fact that users can access the portal: <http://pst.giustizia.it/PST/> to file these appeals, without the support of a lawyer.

Instead, the contractual analysis is the only task performed by Kira, Canada's automatic learning software which identifies, extracts, and analyses the text of contracts. Kira could also be used in Italy since contractual drafting and analysis is not a prerogative of lawyers and is not included in the exhaustive list of their activities.

According to an established approach, practicing a protected profession, in the context of legal assistance, is reserved to members of the bar only within the limits of representation, assistance, and defence of the parties in court and, in any case, of direct collaboration with the judge in the trial. For all other cases, assistance and legal advice are not the preserve of the lawyers admitted by the local professional association (Trib. Padova, Sez. II, 12 January 2015, in *plurisonline.it.*; Cass. civ. Sez. Unite, 3 December 2008, n. 28658, in *plurisonline.it.*)

As for Ross, the software used in the United States, apparently it does not replace the lawyer – and thus does not raise the issues outlined above – but it only supports them in some tasks, for streamlined and quicker research.

Ross is therefore only a tool helping the professional perform his task, without actually replacing him. It must be reiterated that this mechanism has a profound impact on the labour market, with a robot taking the place of a trainee or a junior lawyer in research activity, which is yet another case of automation.

5. Contractual Remedies and Liability Aspects in Tasks Performed by Artificial Intelligence Mechanisms

The breach of the contract resulting from the fact that the performance of a task by an AI mechanism is automatic lowers the risk of non-performance and the resources needed for the performance itself. However, it does not come without risks and, in case of non-fulfilment, all the remedies provided by the law for a breach of contract will be available.

As said above, AI systems are not legal subjects and therefore cannot bear any liability. The only liable party will be the contracting party, *id est* the natural or legal person bound by the contract and making use of a robot or software in the fulfilment of the contractual obligation. The general provisions of Article 1218 et seq. of the Italian Civil Code will

therefore apply. These provisions, despite having been in force for a long time, are quite flexible and provide for a reversal of the burden of proof: the creditor does not need to prove the subjective element of the breach, which is presumed.

The cited Resolution of the European Parliament is therefore erroneous in labelling the current legal framework as clearly inadequate in regulating contractual liability. According to the Resolution, the traditional legal rules cannot apply to machines, which are programmed to choose their contracting parties, negotiate contractual terms, stipulate contracts and take decisions on their implementation. Therefore, for European lawmakers, new, more suitable and up-to-date norms are needed, to match the innovations and the technological development impacting on the market.

It is true that the consequences of AI operations could go beyond what was originally planned and foreseen. However, Article 1225 of the Civil Code could be referred to, in order to limit the debtor's liability. This article stipulates that "if a contractual default is not due to the will of the debtor, compensation will be limited to the damages which could arise when the obligation came into existence".

Moreover, such a case could involve other subjects, including maintenance workers, programmers, etc. For example, an AI mechanism could be unable to perform a task due to a programming defect; this would allow the responsible party to receive, in turn, compensation by the programmer.

In terms of extra-contractual liability, a study of every single case will be required, in order to identify the subject to be held liable for the AI operation. This evaluation will be more complicated when damage is caused by highly autonomous robots, which can learn in unique ways from their different, individual experiences (Boscarato, 2011, p. 383 ss.). These robots interact with the environment in singular, unpredictable ways. Absent any ad hoc provision on this matter, it is necessary to adapt the general rules and choose – for every single case – the connecting factor which is more suitable in this rapidly evolving scenario. The owner of the robot could be held liable under Article 2043 of the Civil Code; however, this would complicate the position of the damaged party, due to the need of proving the negligence of the damaging party. According to some scholars, Article 2050 of the Civil Code could apply, when the task performed can be classified as a "dangerous activity". At least in some cases, Article 2051 of the Civil Code, regulating the liability arising from the custody of goods, could be referred to, thus applying Article 2052 of the Civil Code (Santosuosso, Boscarato, Caroleo, pp. 492-516). Finally, for learning robots, even the *culpa in educando* by a teacher, regulated by

Article 2048 of the Civil Code, was considered (Santosuosso, 2016, p. 338 ss.).

Moreover, should the AI system cause damage for being defective, its manufacturer will be held liable, since robots can be regarded as products, despite their “hybrid” nature (Cordiano, 2018, p. 633), and even the maker of a single component or the programmer will take their share of responsibility. However, according to the legislation in force, a manufacturer can be held accountable only for some given type of damage. Furthermore, the damaged party could find it hard to prove that an algorithm is defective (Alpini, 2018, p. 10).

As said above, the European Parliament adopted different proposals in response to the growing usage of autonomous AI systems. This has been done by assigning ad hoc strict liability or risk management-based liability, introducing a compulsory insurance regime for some kinds of robots, establishing a compensation fund to complement the insurance benefits, and attributing new legal status to robots and software agents, so that the most autonomous ones can be regarded as ‘electronic persons’.

Like what happened, under some respects, to animals, a *tertium genus* of subjects would, therefore, come into existence – in addition to natural and legal persons – and be held liable for damage (Parini, 2012, p. 603).

Undoubtedly, this state of affairs triggers some reflections on the nature of these intelligent machines, which make autonomous decisions and for which some human beings have even nurtured affection. An example of this is Aibo, the dog-like robot produced by Sony. In 2018 a funeral was held in a Buddhist temple in Japan for a hundred dog robots, as they were damaged and no longer repairable.

Nonetheless, the proposed solution looks disproportionate in comparison to its stated aim. Furthermore, a recognized legal subject will also have rights. In order to solve the liability problem and ensure that a third party can receive proper compensation, an insurance regime would suffice, as long as insurance schemes keep up with technological evolution.

In order to address such complex problems with a comprehensive approach, it will eventually be necessary to make IA systems conditional on some rules. These systems should not only abide by rules similar to those imagined by Asimov, but also to an ethics code so that they can make choices according to a value hierarchy (Boscarato, 2011, pp. 383-420). However, to define which choice is just and which commands should be given by the machine is an arduous task, as shown by the “trolley dilemma,” the famous mental experiment based on an ethical dilemma. The experiment shows that moral choices made under critical or

at least uncertain circumstances can be different as different people are involved (Foot, 1967, p. 5 ss.; Costantini, Montessoro, 2016, pp. 95-114).

6. Conclusions

In conclusion, the widespread usage of AI systems performing tasks which have traditionally been carried out by liberal professionals is faced with some legal limits. They are well known to legal scholars, who have been trying to identify which activities are the prerogative of subjects having the requirements established by relevant legislation. In this respect, the use of AI mechanisms raises issues which are not new, though they take place in a different context.

At any rate, even when the employment of AI is lawful, it undoubtedly has an impact on society, work, and the labour market, heralding an incoming “revolution” in the field of the provision of services, similarly to what happened in the production of goods. In the latter field, the diminution of the human component was already a *fait accompli*.

The opportunities and the new problems created by technological evolution also affect the law. Technological innovation is becoming disruptive in many sectors, and legal tech is transforming the methods of traditional practice and the way of working (Goodenough, 2015, pp. 3-17). Nowadays, a lawyer requires exceptional expertise in IT tools and digital technologies.

Legal categories need to be reshaped, in order to protect the rights of the various individuals involved in the ever-growing usage of AI, which is continuing at an unprecedented and rapid pace.

For sure, the current scenario is imposing on legal scholars an effort to identify the rules applicable to each case. These rules were drafted and enacted in an environment which was different from the contemporary one. Despite that, they are still able to address the current challenges. Even if it was enacted many years ago and under very different circumstances, the 1942 Civil Code is kept alive and vital by its excellent drafting (Ruffolo, 2018, pp. 31-49).

European legislation would increase legal certainty just the same. Its role could be allocating liability among the subjects involved in the tasks performed by an AI system, while establishing applicable rules and widely-accepted definitions.

To the best of our knowledge, ad hoc regulation is also lacking in other European countries. Also, in this case, legal scholars must evaluate existing rules and assess their suitability to regulate the matter, protecting the interests of those involved in dealing with a trend affecting and

relating individuals across the world. This is essential for any new legislation, in order to ensure uniformity.

In this sense the content of the resolution of the European Parliament, concerning robotics is pivotal. In Point C of the introduction, it is stated that: «whereas there is a need to create a generally accepted definition of a robot and AI that is flexible and is not hindering innovation».

References

- Aa.Vv., (2018), *Intelligenza artificiale e responsabilità*, in U. Ruffolo (edited by), Milano, Giuffrè.
- Alpini, A. (2018), *L'impatto delle nuove tecnologie sul diritto*, in "Comparazione e diritto civile", pp. 1-13.
- Anastasi, A. (1991), voce *Professioni intellettuali – Dir. lavoro*, in *Enc. giur.*, Roma, Treccani ed., XXIV.
- Benini, M.E., Colicchia, C., Fazio, F., *The Education towards a Legal Career in Italy Today: an Innovative Path*, in A. Santosuosso, ●.R. Goodenough, M. Tomasi (edited by), *The challenge of innovation in law the impact of technology and science on legal studies and practice*, Pavia, Pavia University Press, pp. 63-84.
- Bertolini, A. (2016), *Robotic prostheses as products enhancing the rights of people with disabilities. Reconsidering the structure of liability rules*, in D. Ferri, A.G. Giannoumis (edited by), *Fostering Accessible Technology through Regulation*, Oxford, Routledge, pp. 38-58.
- Bertolini, A. (2014), *Robots and liability: justifying a change in perspective*, in F. Battaglia, N. Mukerji, J. Nida-Rumelin (edited by), *Rethinking responsibility in science and technology*, Pisa University Press, Pisa, pp. 143-166.
- Bertolini, A. (2013), *Robots as Products: The Case for a Realistic Analysis of Robotic Applications and Liability Rules*, in "Law, innovation and technology", pp. 217-247.
- Biasotti, M.A., Romano, F., Sagri, M.T. (2002), *La responsabilità degli agenti software per i danni provocati a terzi*, in "Informatica e diritto", n. 2, pp. 157-167.
- Borruso, R. (1988), *Computer e diritto*, II, Milano, Giuffrè.
- Boscarato, C. (2015), *Robotics, Innovation and the Law*, in A. Santosuosso, ●.R. Goodenough, M. Tomasi (edited by), *The challenge of innovation in law the impact of technology and science on legal studies and practice*, Pavia, Pavia University Press, pp. 221-240.
- Boscarato, C. (2014), *Robotics, Innovation and the Law*, in A. Santosuosso, ●.R. Goodenough, M. Tomasi (edited by), *The challenge of innovation*

- in law. *The Impact of Technology and Science on Legal Studies and Practice*, Pavia, Pavia University Press, pp. 221-240.
- Boscarato, C. (2011), *Who is responsible for Robot's actions? An initial examination of Italian law within a European perspective*, in B. Van Berg e L. Klaming (edited by), *Technologies on the stand: legal and ethical questions in neuroscience and robotics*, Wolfpublischer, Nijmegen, pp. 383-420.
- Caggiano, I.A. (2018), *Il contratto nel mondo digitale*, in "Nuova giur. civ. comm.", II, p. 1152-1157.
- Carnelutti, F. (1953), *Nullità del contratto di patrocinio per difetto del titolo professionale*, in "Riv. dir. proc.", I, pp. 313-350.
- Cataudella, A. (1972), *Intuitus personae e tipo negoziale*, in *Studi in onore di F. Santoro Passarelli*, Napoli, esi, pp. 624-646.
- Clarizia, R., (2007), *i contratti informatici*, in *Trattato dei contratti*, Giappichelli, Torino.
- Cordiano, A. (2018), *Sub art. 115*, in E. Capobianco, L. Mezzasoma, G. Perlingieri (edited by), *Codice del consumo annotato con la dottrina e giurisprudenza²*, Napoli, Esi, pp. 627-646).
- Costantini, F., Montessoro, P. (2016), *Il problema della sicurezza tra informatica e diritto: una prospettiva emergente dalle "Smart Cars"*, in "Inf. dir.", pp. 95-114.
- Cuccuru, P. (2017), *Blockchain e automazione contrattuale. Riflessioni sugli smart contracts*, in "Nuova giur. civ. comm.", II, pp. 107-119.
- Davola, A., Pardolesi, R. (2017), *In viaggio con il robot: verso nuovi orizzonti della r.c. auto ("driveless")?*, in "Danno resp.", pp. 616-629.
- Di Sabato, D. (2017), *Gli smart contracts: robot che gestiscono il rischio contrattuale*, in "Contr. impr.", pp. 378-402.
- Dore, G. (2013), *I doveri di informazione nella rete degli scambi commerciali telematici*, in "Giur. Merito", pp. 2569-2583.
- Finocchiaro, G. (2018), *Il contratto nell'era dell'intelligenza artificiale*, in "Riv. trim. dir. proc. civ.", pp. 441-460.
- Finocchiaro, G., (1997), *I contratti informatici*, in *Tratt. dir. comm. e dir. pub. ec.*, in F. Galgano (edited by), CEDAM, Padova, pp. 60-78.
- Foot, P. (1967), *The Problem of Abortion and the Doctrine of Double Effect*, in "Oxford Review", n. 5, pp. 5-15.
- Giacobbe, G. (1987), voce *Professioni intellettuali*, in *Enc. dir.*, Giuffrè, Milano, XXXVI.
- Goodenough, (2015), *Getting to Computational Jurisprudence 3.0*, in A. Santosuosso, R. Goodenough, M. Tomasi (edited by), *The challenge of innovation in law. The Impact of Technology and Science on Legal Studies and Practice*, Pavia, Pavia University Press, pp. 3-17.

- Koops, B.J., A. Pirni (2013), *Preliminary Considerations. Special Issue Ethical and Legal Aspects of Enhancing Human Capabilities through Robotics*, in “Law, Innovation and Technology”, 5(2), pp. 141-146.
- Ibba, C., (1982), *Professione intellettuale e impresa*, in “Riv. dir. civ.”, IV, pp. 354-373.
- Irti, N. (2016), *Un diritto incalcolabile*, Torino, Giappichelli.
- Irti, N., (1999), «È vero ma...» (Replica a Giorgio Oppo), in “Riv. dir. civ.”, I, pp. 273-278.
- Irti, N., (1998), *Scambi senza accordo*, in “Riv. trim. dir. proc. civ.”, pp. 347-364.
- Lega, C. (1974), *Le libere professioni intellettuali*, Milano, Giuffrè.
- Lega, C. (1959), *Sulla nullità del contratto di lavoro stipulato da professionista non iscritto all'albo*, in “Dir. lav.”, II, p. 17-34.
- Malerba, A., (2014), *Is AI a Driving Force of Innovation in Law? The If and How of a Historical Opportunity*, in A. Santosuosso, ●.R. Goodenough, M. Tomasi (edited by), *The challenge of innovation in law the impact of technology and science on legal studies and practice*, Pavia, Pavia University Press, pp. 221-240.
- Mazzariol, R. (2013), *Attività di psicoanalista e professioni intellettuali «protette»: spunti per una riflessione critica*, in “Nuova giur. civ. comm.”, II, pp. 423-430.
- Musulino, G. (2009), *Contratto d'opera professionale. Artt. 2229 – 2238 c.c.*, in *Commentario Schlesinger*, Milano, Giuffrè.
- Nepor, S. (1999), *Internet e la legge*, Milano, Giuffrè.
- Nervi, A., (2002), *L'impiego del computer nel procedimento di formazione della volontà*, in V. Ricciuto e N. Zorzi (edited by), *Il contratto telematico*, Padova, Cedam, pp. 114-130.
- ppo, G. (1998), *Disumanizzazione del contratto?*, in “Riv. dir. civ.”, I, pp. 525-546.
- Palmerini, E., Bertolini, A., Battaglia, F., Koops, B.J., Camevale, A., Salvini, P. (2016), *RoboLaw: Towards a European framework for robotics regulation*, in “Robotics and Autonomous Systems”, n. 86, pp. 78-85.
- Palmerini, E., Stradella, E. (2013), *Law and Technology. The Challenge of Regulating Technological Development*, in RoboLaw Series 1, Pisa, Pisa University Press, 2013.
- Parini, G.A. (2012), *Morte dell'animale di affezione e tutela risarcitoria: è ancora uno scontro tra diritto e sentimento?*, in “Nuova giur. civ. comm.”, I, pp. 603-615.
- Parisi, F., (1987), *Il contratto concluso mediante computer*, Padova, Cedam.

- Pasquino, V. (1990), *La vendita attraverso reti telematiche. Profili civilistici*, in “Dir. informazione e informatica”, pp. 697-710.
- Perulli, A. (1996), *Il lavoro autonomo*, in *Tratt. Cicu – Messineo*, I, Milano, Giuffrè.
- Pimi A., Lucivero, F. (2013), *The “Robotic Divide” and the framework of recognition: re-articulating the question of fair access to robotic technologies*, in “Law, Innovation and Technology”, 5(2), pp.147-171.
- Raskin, M. (2017), *The law and the legality of smart contracts*, in “Georgetown Law Technology Review”, pp. 305-341.
- Resta, G., Zeno-Zencovich, V. (2018), *Volontà e consenso nella fruizione dei servizi in rete*, in “Riv. trim. dir. proc. civ.”, pp. 411-440.
- Riva Sanseverino, L. (1963), *Lavoro autonomo*, in *Del lavoro autonomo*, in *Comm. Cod. civ.* Scialoja – Branca, Bologna – Roma, Zanichelli ed.
- Roppo, E. (2013), *Behavioural Law and Economics, regolazione del mercato e sistema dei contratti*, in “Riv. dir. priv.”, pp. 167-186.
- Ruffolo, U. (2018), *Self driving car, auto driveless e responsabilità*, in U. Ruffolo (edited by), *Intelligenza artificiale e responsabilità*, Milano, Giuffrè, pp. 31-49.
- Ruscello, F. (2017), *Istituzioni di diritto civile*, Bari, Cacucci.
- Salomone, R. (2010), *Le libere professioni intellettuali*, Padova, Cedam.
- Santoro Passarelli, F., (1968), voce *Professioni intellettuali*, in *Noviss. dig. it.*, Torino, Utet, XIV.
- Santosuosso, A. (2016), *Diritto scienza e nuove tecnologie*², Padova, Cedam.
- Santosuosso, A. (2015), *Technological Innovation in Law: Just an Option or a Strict Necessity?*, in A. Santosuosso, R. Goodenough, M. Tomasi (edited by), *The challenge of innovation in law. The Impact of Technology and Science on Legal Studies and Practice*, Pavia, Pavia University Press, pp. 19-34.
- Santosuosso, A., Boscarato, C., Caroleo, F. (2012), *Robot e diritto: una prima ricostruzione*, in “Nuova giur. civ. comm.”, II, pp. 492-516 ss.
- Sartor, G. (2016), *L’informatica giuridica e le tecnologie dell’informatica. Corso d’informatica giuridica*, Torino, Giappichelli.
- Sartor, G., Omicini, A. (2016), *The autonomy of technological systems and responsibilities for their use*, in *Autonomous Weapon Systems. Law, Ethics, Policy*, Cambridge, Cambridge University Press, pp. 39-74.
- Stradella, E. (2019), *La regolazione della Robotica e dell’Intelligenza artificiale: il dibattito, le proposte, le prospettive. Alcuni spunti di riflessione*, in “Riv. dir. media”, pp. 1-20.

- Szabo, N. (1997), *Formalizing and Securing Relationships on Public Networks*, in “First Monday”, v. 2, n. 9.
- Tosi, E. (1993), *I contratti di informatica. Tipi contrattuali, formazione e responsabilità*, Milano, Giuffrè.
- Tosi, E. (2005), *Il contratto virtuale. Procedimenti formativi e forme negoziali tra tipicità e atipicità*, Milano, Giuffrè.
- Tosi, E. (2006), *Diritto privato dell'informatica e di internet*, Milano, Giuffrè.
- Turing, A. (1950), *Computing Machinery and Intelligence*, in “Mind: new series”, n. 239, pp. 443–450.

CHAPTER VII

SMART CONTRACTS, LEGAL-TECH PROFESSIONS AND CIVIL LAW ISSUES

GIULIA CASTELLANI

1. Introduction

The applications of artificial intelligence are spreading in the most diverse operating environments, leading to an apparent change in the surrounding reality, a revolution that has already involved everyone's life. As far as we are concerned, innovation and technology have also entered the legal field, affecting, in particular, the law of contract. AI does represent a challenge for society as well as for the law (Costantini, 2017, p. 17 ff.). AI applications in the legal field undoubtedly constitute an intriguing issue that entails numerous implications. The application of IT and technology to the contract represents an opportunity to confront the traditional legal categories and to understand whether the phenomenon can be traced back to them. Yet, and as has also been highlighted by case law, the progress of technology leads one to question the possibility of a “gene mutation of the contract” intended to become “a rather heteronomous instrument” (Caggiano, 2018, p. 1152).

So-called smart contracts are concluded in the context referred to above. This fitting expression was introduced by Nick Szabo, an American computer scientist of Hungarian origins, in the mid-nineties (Szabo, 1997, passim; Szabo, 1997a, passim; Szabo, 1998, passim). However, their evolutionary path has remained unsearched until the development of blockchain technology, which can serve as their digital support (Cuccuru, 2017, p. 107-119).

The expression “smart contracts” generally refers to “intelligent software”, namely IT protocols through which the elements of a contractual relationship are formalized and translated into a cryptographic code, that is the IT language. They are concerned with software capable of autonomously executing the terms of the contractual agreement encoded within them,

once the predetermined conditions have been satisfied. Therefore, it is the program that applies the agreed terms according to the if-then causal scheme, automating the execution of the contract: the occurrence of a certain condition (the 'if' component) will necessarily lead to the occurrence of the intended effect (the 'then' component).

It has been oddly highlighted how smart contracts originated from vending machines, of which they would represent a modern and digital reinterpretation. Even in vending machines, once the money has been entered by the user and the code corresponding to the desired product has been inserted, the latter will be automatically supplied by the machine. The first vending machine seems to date back to Heron of Alexandria, a mathematician, engineer and inventor who lived in ancient Greece. He seemed to have invented the machine for the automatic dispensation of sacred water (or wine) in Egyptian temples.

Notwithstanding the name, therefore, smart contracts are not necessarily contractual arrangements in a technical sense; rather, they represent an instrument aimed at the negotiation and automatic implementation of the terms of a contract.

In North American literature, smart contracts have been differentiated from "self-driving contracts", that is contracts in which it is the creation of contractual clauses to be automated, rather than the performance of the contract (Casey and Niblett, 2017, p. 104; Caggiano, 2018, p. 1154-1155). In the context of self-driving contracts – which are frequently applied in the financial field and on which the Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 has also intervened – software contribution can be seen even in the drafting and implementation of contractual content. Case law has had the chance to intervene also in this regard, to highlight how software merely represents the means of transmission of the intention of the contracting parties, which has indeed already been formed in the subjective sphere of the contracting parties themselves, at least in its essential aspects. Of course, the theme seems to complicate when considering the existence of software characterized by cognitive and interaction skills, which are able to learn autonomously and make decisions, and feature unpredictable behaviour.

One of the best-known expressions of smart contracts is the one which employs so-called blockchain technology, on which the now-famous Bitcoin software is also based. The latter identifies a peer-to-peer digital platform, with no intermediaries and devoid of central authority, and, as such, decentralized, which is intended to carry out privity formation, formalization, and implementation.

The blockchain represents the most famous example of distributed ledgers technology (DLT). In particular, the blockchain represents a type of technology aimed at managing transactions, and it is characterized by the establishment of a shared network register or a public database shared between the users of a network (the “miners”). This register is organized in blocks, each of which can be regarded as the representative of a certain number of transactions, whose origins and time of execution will result stably and fixedly, as certified through an asymmetric key cryptography mechanism and a timestamp (Manente, 2018, p. 212, note n. 3; Parola, Merati and Gavotti, 2018, p. 681, note n. 2-3). Within this de-materialized environment, each block will, in turn, be connected to the previous one, by virtue of a particular logarithmic operation, thus forming a chain of blocks (hence the name blockchain). Before being added to the chain, each ‘block’ will be checked, validated and encrypted by some of the network nodes (the miners), by solving a determined and complex arithmetic operation. To this purpose, huge machines will be needed, empowered with incredible computing abilities. As a result, each “node” can then access the chain of blocks and consult it.

One of the main advantages of blockchain technology, at least according to the intentions of its creators, would be represented by the autonomy and the release of such a system by a central authority responsible for keeping and regulating the register. Decentralization and disintermediation, typical of blockchain technology, is also intended to characterize smart contracts.

This decentralized architecture, with intent to simplifying processes and reducing costs, certainly contributes to making smart contracts a particularly attractive instrument also in legal tech. This is especially true in all those sectors characterized by the presence of intermediaries, from whom users could free themselves, with considerable advantage in terms of cost saving. A practical application is, for example, represented by the UjoMusic platform, which allows users to listen to music and use distributed logs to pay the artists directly, without having to turn to an intermediary.

This software, which automates the performance of the contract, would reduce the share of disputes.

The rapid diffusion of this technology has led to questions at EU level about the need for uniform legislation, which guarantees a linear approach to the various problems arising from the application of these instruments. Thus, some initiatives have been devised, aimed at encouraging the study of this phenomenon and cross-border cooperation. Reference can be made to the EU Blockchain Observatory and Forum, launched by the European

Commission with the support of the European Parliament, which brings together 22 Member States. They have been joined by five more Member States – to sign a declaration creating the “European Blockchain Partnership” and to the recent Resolution adopted by the European Parliament on 3rd October 2018, entitled “Distributed ledger technologies and the blockchain: building trust with disintermediation”. Through the latter, the European Parliament takes into consideration smart contracts, calling the Commission to promote the development of technical standards in cooperation with relevant international organizations (such as ISO, ITU and CEN-CELENEC) and to conduct an in-depth analysis of the existing legal framework in individual Member States in relation to the enforceability of smart contracts. Concerning our legal system, special mention is due to the introduction of a specific provision on technologies based on distributed registers and smart contracts, following the conversion of Decree Law n. 135 of 14 December 2018, (the so-called “Simplification Decree”). Blockchain and smart contracts have thus become officially part of our legal framework. Concurrently, the *Agenzia per l’Italia Digitale* (AgID) has been set up for drafting the details of these technologies in order to make them fully operational.

It will be discussed, however, how the decentralization provided by these new instruments can at the same time raise doubts and problems of governability and supervision.

Further, it will be necessary to point out how this “waterproof” system, in which intermediaries are lacking, risks precluding any external intervention. The implications of the situation are evident when it comes to verifying the conformity to the laws of the pacts incorporated in a smart contract, rather than its compliance with interests worthy of protection. The attempt to facilitate the freedom of contract to its maximum potential through smart contracts could thus run the risk of overcoming the limit of lawfulness and worthwhileness.

Furthermore, the use of computer language – instead of a language available to anyone – and the circumstance of being in an embryonic state from a legal point of view, so as not even to identify any commercial practice, nor a *lex mercatoria*, lead to a number of questions.

2. Smart Contracts and Traditional Legal Categories

First, smart contracts urge the interpreter to examine and understand their essential characteristics to verify if they can be somehow traced back to the traditional legal categories. Smart contracts will give the opportunity to return to issues already widely discussed by the doctrine and case law –

such as the arrangements of “contracts without agreement”, rather than the nature of performance – which deserve reconsideration in light of the advance of technology.

Regarding the very nature of intelligent software, it can be encompassed the viewpoint of those who deny that, despite the name, smart contracts have contractual connotation. At least in light of the notion of a ‘contract’ accepted by the continental experience of civil law – an agreement which creates rights and obligations between the contracting parties – the configurability of “contracts” in the technical sense should be excluded. Smart contracts will instead represent an instrument for the negotiation, formation and/or automatic implementation of contractual relationships or para-contractual relationship: a way for the establishment and implementation of agreements, rather than contracts strictly speaking (Cuccuru, 2017, p. 110-111; Allen and Widdison, 1996, p. 25 ff.; Surden, 2012, p. 629; Raskin, 2017, *passim*). In other words, the contract is and remains constituted by the agreement between the parties, containing its essential elements. However, smart contracts will constitute the vehicle for the intentions of the parties.

As mentioned, smart contracts consist of a set of contractual provisions translated into an algorithm, which configure the terms and conditions desired by the parties, according to the if-then logic. These “contracts” will operate according to the rules set in themselves so that the provisions incorporated in the smart contract will be automatically and necessarily performed at the occurrence of the events predetermined by the contracting parties themselves (Cuccuru, 2017, p. 111).

For instance, we can consider purchasing a license for reproduction and distribution of the protected work. A will draft a smart contract, in which the license will be configured as the variable x and will be intended for x to be transferred at the occurrence of a given event y (i.e., payment of the consideration). A will then register the protocol in a blockchain. When B decide to purchase x , B itself will have to interact with the protocol created by A, accepting all the conditions of the swap and transferring the sum y . Then, the algorithm of the smart contract will grant x to B, and will automatically and simultaneously, transfer the sum y to A, eliminating the time gap between the two performances and leaving no room for the eventual default of one of the parties. At the same time, it would also exclude the risk of online fraud, as it is not possible for A to hold back the sum y , without transferring the promised good.

In this connection, it is sufficient to think about the employment of smart contracts in the hypothesis of the sale of a car by instalments. It is the development of a contractual algorithm that allows the car engine to

start up once the last instalment has been paid. In other words, once the previous instalment is paid, the engine will then be started.

However, it has been highlighted how countless variables can be included in the smart contract, to reduce the risk of contingencies and ensure the maintenance of the contractual balance (Di Sabato, 2017, p. 387 and p. 398).

Smart contracts may also be programmed to take into account, in addition to events already included in the algorithm – for example, the expiry date of the payment term – also external elements, such as an interest rate or index of stock prices. These external elements are referred to as “oracles”, which form the link between the physical world and the decentralized smart contracts system, allowing one to monitor specific external data which are, however, taken into consideration as relevant information. The mechanism of oracles has been highlighted by case law, but it could present the disadvantage of introducing a degree of uncertainty in the smart contracts system, given the risk of tampering with or malfunctioning of external sources of information.

Smart contracts represent extremism of contractual automation. The management of the entire contractual relationship, from the formation to the implementation of the performances deducted there, is entrusted to software, without any verbal agreement between the parties, or any contact between them. The debate on the basis of an automatic negotiation relationship and in particular on “exchanges without agreement” is ever more timely (Sartor, 2002, p. 465 ff.; Finocchiaro, 2002, p. 55 ff.; Di Sabato, 2017, p. 392 ff.; Finocchiaro, 2018, p. 441 ff.).

As is known, the spread of markets characterized by automatism and information technology has led the authors to underline the crisis of speech and dialogue, intended as a means to achieve the bargain, and therefore the decline of the contractual agreement, aimed in turn as a linguistic dialogue between the contracting parties (Irti, 1998, p. 347 ff.). Likewise, it is known the lively discussion on the subject, which is sometimes characterized by the use of particularly critical tones (Oppo, 1998, p. 525 ff.; Irti, 1999, p. 273 ff.; Bianca, 2000, *passim*; Irti, 2000, p. 601 ff.). This state of affairs is certainly not the place to take a position in the broad debate on the subject of “contracts without agreement.” It is believed, however, that it is possible to agree that language represents only one of the possible means that can be used by the parties. The intention of the contracting parties can also be expressed through different and new tool for communication. In particular, the agreement can also be formed thanks to the employment of new technologies and the use of computer language.

In this perspective, therefore, we can agree on the fact that agreement and dialogue do not represent a “monad”. This is made all the more evident if we consider not only our legal framework and the specific provisions set out in Articles 1321, 1327 and 1333 of the Italian Civil Code (Gemma, 2007, p. 255; Raskin, 2017, p. 322), but also, in a broader horizon, the principles of European contract law (PECL). See in particular Articles 2:101 and 2:103 where the contract is identified with the expression “sufficient agreement.” Furthermore, see Article 2:204 (according to which: “Any form of statement or conduct by the offeree is an acceptance if it indicates assent to the offer”) and Article 2:211 (pursuant to which: “The rules in this section apply with appropriate adaptations even though the process of conclusion of a contract cannot be analyzed into offer and acceptance”).

These provisions contribute to highlighting the centrality of the agreement between the contracting parties even in the absence of any dialogue. It follows that even in the hypothesis where the contract is concluded through automation mechanisms – as is the case with smart contracts – the agreement can still be found, even if it is an agreement without any dialogue, though rich in language (Casey and Niblett, 2017, *passim*; Caggiano, 2018, p. 1154-1155). Certainly, there will be the further problem of identifying the constituent elements of the contract: from the identification of the contracting parties to the determination of where the formation of the contract takes place; from the attribution of the intentions, to the configurability of vices of consent (Finocchiaro, 2018, p. 441 ff.).

A further profile to consider is represented by the applicability to smart contracts of the *ad substantiam* or *ad probationem* formal requirement. It has been reviewed by the authors on the blockchain system, which employs the asymmetric key cryptography mechanism and could also allow the requirement of the written form to be recognized to the smart contract (Finocchiaro, 2018, p. 456-458; Parola, Merati, and Gavotti, 2018, p. 686-687).

Within the framework of our legal system, a starting point for reflection is undoubtedly represented by the recent conversion law of the Decree Law n. 135 of 2018, in which it can be found a provision regarding technologies based on public registers and smart contracts.

As far as we are concerned, it is worth pointing out that the provision pursuant to art. 8 *ter* highlights the fact that smart contracts, after establishing the digitized identification through a procedure – whose guidelines must be set by the *Agenzia per l'Italia digitale* – and of which the contracting parties will be able to fulfil the requirement of the written form. Therefore, this software, in compliance with the elements that will

be outlined by *AgID*, will allow putting into place agreements that meet the formal condition. This state of play opens the way for countless opportunities. Without prejudice to the principle of freedom of contract, however, there are a number of regulatory provisions requiring the formation of the contract in written forms. Concerning all these hypotheses, the suitability of smart contract to fulfil the requirement of the written form is thus confirmed.

Continuing with the analysis, it has been stressed by case law that the hallmark, compared to “traditional contracts”, is given by the flow of information and not by the autonomy of some elements not under the contracting parties control (Capaccioli, 2016; Kolvart, Poola and Rull, 2016, p. 133-147). Moreover, while the “traditional contracts” leave the road open to a possible failure by one of the contracting parties, in smart contracts non-performance would no longer be possible since the performance itself is automatic. The performance of a contract, as will be seen below, as well as a “due action,” is now also being configured as an “automatic act.”

Turning then to the different positions of case law on the nature of the performance, it seems that the “non-negotiating theories”, supporting the irrelevance of the *animus solvendi*, can thus find maximum expression with regard to the figure of the smart contract (Nicolò, 1958, p. 554 ff.; Caringella and De Marzo, 2008, p. 268-272; Ruscello, 2017, p. 322-323). On the contrary, with reference to smart contracts, it will be left out of consideration not only the *animus solvendi*, but any other debtor. In this perspective, performance will also become technically as well as legally binding. Therefore, through smart contract technology, the contractual terms will become self-executing.

3. Contractual Risk Management and Liability

The impact of technology on the law and the drafting of contracts could, therefore, prove to have disruptive effects. And this is true both for the transnational dimension of contracts and for the presence of self-executing provisions. The employment of smart contracts, characterized by the automation of the implementation of their clauses, could allow, at least in the intentions, more efficient management of the execution of the contract itself, minimizing the risk of default (and therefore of the dispute), and the risk of contingencies.

In the horizon of smart contracts, as seen, the concept of performance changes. If the traditional contract remains subject to uncertainty, as the contracting parties can decide not to perform the contract when they are

willing to face the legal consequences of their default, the structure of smart contracts does not seem to leave room for voluntary non-compliance with the contractual terms (Lessig, 2001, p. 246 ff.; see also Cuccuru, 2017, p. 112). Therefore, technological strictness affects the freedom of the contractors, including the possibility of not performing, that is so compressed in such a way as to exclude unwanted behaviour and to inevitably lead to the agreed one. Litigation and disputes would thus be limited.

At the same time, the certainty in the management of contractual relationships offered by smart contracts has been interpreted in a functional perspective also with regard to the possibility of neutralizing, or at least reducing, the risk of contingencies (Di Sabato, 2017, p. 398 ff.; Alpini, 2018, p. 7-9). The software executing the contractual relationship could also be in charge of managing possible contingencies, in so far as any subsequent event is incorporated into the program as a circumstance followed by a specific event.

In this way, moreover, it would be possible to limit the onset of litigation, since the contracting party knows that it will necessarily follow a given event upon the occurrence of a particular circumstance and cannot contest the actual existence of the circumstance itself (Di Sabato, 2017, p. 398 ff.). It has been highlighted how the software does not choose, but rather reacts to the impulse created by the occurrence.

Any objection will still be possible, but in any case, it will not be a barrier to the occurrence of the programmed effect, as this is governed by the computer program according to the if-then causal scheme. In the automated execution, it is thus created a situation similar to that deriving from the *solve et repete* clause since only a limited margin of evaluation rests upon the parties. The contracting parties, adopting the smart contract, will accept this way of execution, renouncing the self-protection instruments placed at their disposal by the law.

Smart contracts seem to meet the need for certainty and “predictability” of contractual relationships (Irti, 2015, p. 10 ff.). Concerning their scope, all those agreements that require certain flexibility or discretion must be regarded as excluded.

However, the strictness and rigor of smart contracts, which are the prerogatives of this IT instrument, may at the same time represent a significant limitation. In this perspective, it is inevitable, from a lawyer point of view, the onset of several questions: if the contract is interpreted by the software, which mathematically cannot fail, will the interpretation of a smart contract always be certain and objective? Once the smart contract is integrated into the blockchain, could the parties agree to modify

it? What if smart contracts have an unlawful subject matter or, broadly, one that is not worthy of protection? Could some control occur in this event? These are aspects to which we will have the opportunity to go back in the following, after having highlighted that questions arise even when liability is at stake: what if a smart contract were to contain incorrect instructions? Again, what would happen if there was a malfunction in the computer protocol? And what if the automatic implementation of a smart contract caused damage to third parties? The questions could also continue.

It is clear that contractual liability and tort liability represent a field of particular interest. Smart contracts are an expression of artificial intelligence. Due to the technological progress and the spread of increasingly sophisticated software capable of learning autonomously, it seems we cannot limit ourselves to mere contributory liability among the subjects who are somehow involved in the use of a smart contract (Matthias, 2004, p. 181-183 and c. p. 182).

In this sense, the legal analyst will necessarily face a fundamental choice; considering software as an advanced technological instrument – whose activity will always remain attributable to people – or regarding it as a “subject”, to which the activity carried out can be attributed, insofar as it deals with algorithms with cognitive and learning capabilities. The latter in the past could appear as science fiction (Palmerini and Bertolini, 2016, p. 239 ff.; Santosuosso, 2016, p. 321 ff.; Santosuosso, Boscarato, and Caroleo, 2012, p. 494 ff.; Boscarato, 2011p.at 383 ff.).

The interest for the topic has also received further feedback following the European Parliament's enactment of the Resolution of 16 February 2017, with recommendations to the Commission on the civil-law and ethical aspects of robotics. On this occasion, the Parliament urged the Commission to adopt a regulatory intervention aimed at solving problems relating to the traceability of activity and liability.

The Resolution, acknowledging technological progress and the fact that robots less and less can be considered to be as mere instruments, highlights the need to create a new category with specific characteristics. In particular, with reference to liability, it suggests providing strict liability and a compulsory insurance scheme, as well as the creation of a fund to guarantee compensation in the absence of insurance. Indeed, the EU Parliament calls on the Commission to assess, in the long term, the establishment of a legal and specific status for robots (so that at least the most sophisticated ones can be regarded as electronic human beings taking responsibility for their actions), and the possible recognition of the

electronic personality for those robots which make independent decisions or interact independently with third parties.

Despite this resolution deals with the so-called smart robots, and therefore does not specifically involve those forms of artificial intelligence not referable to this definition, since they lack a “physical body, it represents an opportunity for reflection and a further piece in the lively debate that is developing on the matter. It is clear that today liability represents a still open question, for which a new and renewed approach will be necessary, on behalf of the legal experts (Bertolini, 2016, *passim*).

4. The Automation of Intersubjective Relationships and the Overcoming of Professionals and Qualified Workers

The suggestions provoked by the employment of these new technologies seem to go so far as to hypothesize complete automation of those intersubjective relationships which are relevant from a legal perspective. For example, the issue of the applicability of smart contracts and blockchain to temporary employment contracts has been addressed, to guarantee traceability and to prevent undeclared work (Pinna and Ibbá, 2017, p. 1 ff.).

Still, a “wedding smart contract” was even assumed (Caracciolo, 2017, p. 55 ff.). Certainly, we find ourselves in front of an idea at least bizarre and that borders on illegality. However, it can still be considered to be symptomatic of the belief among the advocates of smart technology; supposed ability and benefit in avoiding the recourse to professionals and third-party intermediaries (e.g. lawyers, notaries, accountants, consultants in general, but also religious authorities; Remus and Levy, 2016, p. 47 ff.; Nasri, 2018, p. 485 ff.; Restuccia, 2017p. 53 ff.; Laurini, 2010, p.237 ff.).

Undoubtedly, the development of new technologies and informatics implies an economic, sociological and perhaps even anthropological change, bringing to the attention of the interpreter the need for an analysis and a rethinking of the role of professionals, as cultural intermediaries. This is true not only regarding smart contracts. The rapid spread of technology and the trust placed in it, pose the question of whether it can replace man, even affecting intellectually complex activities. This is especially true in those areas in which the consideration of human contribution is increasingly blurred as regarded as an added value, that is a contribution made not only of technicality (as for computers) but also of inventiveness, critical approach and flexibility.

It should be added that the spread of p2p platforms has pushed its upholders to identify in them the maximum expression of those hyper

liberalist theories that invoke a free market, capable of self-regulating, and that so far have instead assumed the need to provide for limitations and public regulations (Lessig, 1999, 134 ff.).

One must question whether technology can be configured as a “demiurge” capable of solving all problems. And, in particular, with regard to smart contracts, it is necessary to ask whether the adoption of these instruments can effectively allow intermediation in online relations to be overcome, with particular regard to the role of legal professions.

Consequently, inevitable questions arise: are the decentralization and the “disintermediation” characterizing the system of smart contracts and the blockchain the most genuine expression of greater warranty for users? Again, will the adoption of such schemes eliminate the need for intermediaries? Or, should it still be necessary to have recourse to a professional who acts as a trusted intermediary, to whom to assign the task of transposing the intentions of the contracting parties into code and guaranteeing compliance with the legal system?

5. The Limits of Smart Contracts and the Need for Greater Safeguards

Smart contracts, by requiring the transposition of the terms of the contractual agreement into a digital language, clearly suggest a preliminary question of comprehensibility and translatability. It is undoubted that most people certainly do not have a computing and programming background to allow them to write an agreement in bit language and to be able to read the terms of contract thus arranged. The importance of ensuring a correct translation of the intention of the parties is made even more evident when we consider that the smart contract, once launched in the blockchain, will become unchangeable.

It follows that the negotiation and arrangement of smart contracts will necessarily and mostly require the support and intervention of those who can write and read algorithms. In this perspective, therefore, far from eliminating the need to turn to intermediaries and professionals in general, the technical and digital inexperience of the contracting parties will result in precisely the opposite effect, reintroducing intermediation in this type of relationship (albeit under a different role). Computer programmers and engineers will thus become indispensable, representing a link between the language of the parties and its transposition into a smart language (Manente, 2018, p. 217-218).

The considerations above, contrary to the intentions of the supporters of smart contracts, led to the inference that intermediation cannot be

eliminated. Instead, it could be drawn a change in the role of the intermediary during the contract. The professional will be called upon to intervene no longer concerning the implementation phase of the contract, but with regard to the draft phase of the agreement itself (Cuccuru, 2017, p. 114). However, this will inevitably mean that the related costs will also shift from the implementation level to the drafting of the digital contract.

At the same time, the revisiting of intermediation in the abovementioned terms – that seems not possible to disregard anyway – will come along with the inevitable risk of undermining those requirements of certainty and predictability that should instead characterize smart contracts. The latter assumption moves from the concern that programmers and computer engineer, when implementing the contractual agreement in bit language, may not provide a precise and correct translation of the intention of the contracting parties, leading the smart contract to unexpected results or anyway different from the animus of the parties. Some legal phrases (such as the notion of good faith) would seem to elude IT rigor and can hardly be translated into an algorithm.

Programmers and IT engineers, lacking legal competences, could not be aware of the need to guarantee the application of public policy rules, or that regulations designed to protect certain “weaker” parties (such as, for example, consumers), might fail to meet their goals (Fairfield, 2014, p. 35 ff.).

In particular, the notarial case law that dealt with smart contracts and the blockchain has provided an answer to the question: “who guarantees the correctness of the data entered?”. In the horizon outlined above, innovation and progress cannot disregard the adjusting function carried out by the notary, who, in a technologically advanced context, will need a background that is no longer just juridical, but also technological. In general, however, it does not seem possible to exclude the legal professionals and qualified intermediaries. These are the ones that can continue to play a role of balancing contractual positions, thus making the function of the legal professionals essential, as trustworthy intermediaries. We are facing a function – that of rebalancing the contractual asymmetries and compliance with the law – which, unless it is carried out by a notary or by a wise and up-to-date lawyer, will risk being held by others, easily an entrepreneur, who will offer less warranties of impartiality for the benefit of other and different interests (Nastri, 2018, p. 487; Alpini, 2018, p. 9).

To prefigure a scenario in which contracts can magically self-execute turns out to be excessively optimistic (and perhaps simplistic) also from another point of view. Rigidity and decentralization – those of smart

contracts and blockchain should be a strong point – when brought to their extreme, seem to entail dangers. There is the risk of setting up an “online environment” which is self-referential and detached from any external judgment, even if it is a legitimate intervention as it is aimed at correcting malfunctions and safeguarding the imperative rules of a legal order. Moreover, it should be added that the if-then scheme does not seem to be reconciled with the employment of complex contract architectures (as characterized by multilateral parties, containing terms or conditions which are precedent or subsequent, etc.).

The irreversibility of automated relationships would also seem to preclude the parties from resorting to self-help instrument against illegitimate, voidable, or otherwise unfair agreements. It is, therefore, necessary to question the legitimacy of a system in which the possibility of resorting to correction instruments in the hypothesis of malfunctions of the agreement is ex-ante excluded. One may wonder, in other words, if automation, predictability, and efficiency are values that can go so far as to justify a drastic reduction in the possibility of any post-negotiation revision of the agreement.

There is no doubt that both the requirements of governability and controllability of agreements concluded with smart technology are subject to these considerations. The advantages of automation can only clash with the need for justiciability of the agreement by courts and arbitrators. Decentralization will counteract the need to ensure external control over the instructions formalized in a smart contract. That is when the future circulation and practical success of smart contracts may depend on the balance of these two formats.

6. Conclusions

In conclusion, there is no doubt about how smart contracts and blockchain technology encompass an innovative potential, perhaps not yet fully explored. The questions are still many.

The benefits of such instruments can be identified in the greater efficiency of the contractual settlement, due to the disintermediation, the simplification of the negotiation and implementation of the agreement, the predictability and the reduction of the dispute rate.

An interesting and further approach is also represented by the alleged capability of these technologies when employed in the labour market, to guarantee transparency and deal with phenomena such as the “gangmaster system” (“*caporalato*” in Italian, Pinna and Ibba, 2017, p. 4). This is a

matter of particular importance, considering the serious implications and illegality connected to this activity.

At the same time, attempts were made to highlight some limits of smart contracts; these limits are due precisely to the smart contracts' own structural characteristics. And this is true especially in consideration of the (IT) language used, an unintelligible language that is not accessible to most people. A conscious interaction with the smart contracts necessarily imposes the involvement of professional figures, capable of codifying the contractual intentions of the parties. Far from completely overcoming the involvement of intermediaries, their participation will come along with a series of costs that will thus reduce the economic incentive envisaged by the supporters of smart contracts. The framework will be further complicated when considering the risks associated with the configuration of smart contracts as instruments that are not refractory to any form of external judgment, so as to make doubts about the legitimacy of such instruments. The problems of governability are clearly visible.

According to the author, it seems impossible to hypothesize a total overcoming of the role and function of the intermediary and of the legal professional (be it a lawyer, a notary or a consultant). Surely, the usefulness and the potential of these new technologies cannot be underestimated, since they are abstractly capable of removing some competence from the professionals. The challenge for the various professionals and qualified intermediaries, however, will be to participate in the evolution underway, making sure that new technologies do not simultaneously mark the end of their role and their function. It will be necessary for these professionals to adapt to the new challenges of the society, continuing to offer support, protection, and security in the management of contractual relationships.

In this perspective, it will, therefore, be possible to speak of legal tech, as the new frontier of legal professions. A horizon in which it will be reasonable to imagine the progressive spread, alongside smart contracts, even of professionals whose background will be not only legal but also technological. Cultural renewal will thus require, from the professionals involved from time to time, an enlargement of their areas of expertise, also extending to the IT sector. In this way, smart contracts, an expression of artificial intelligence, can be considered to be an instrument at the disposal of human intelligence, rather than its surrogate.

Ultimately, it is clear that the impact of technology on society and the economy is overbearing and it is equally undoubted as the so-called disruptive technologies are carriers of great possibilities. The resounding spread of innovation in our everyday life will also involve a simultaneous change in the way we communicate, relate and work. In this framework,

therefore, the law will certainly not prevent the diffusion of new technologies, but will have to regulate the developments, not renouncing its role as a regulator of society and the market. In this regard, it seems possible to recall the very current words of an illustrious exponent of the Italian legal science, according to whom the establishment of a market without rights is a contradiction, as is the right without economics (Messinetti, 2002, p. 650; Ruscello, 2017, p. 7 ff.).

References

- Allen, T. and Widdison, R. (1996), *Can Computers make contracts?* in “Harvard Journal of Law and Technology”, v. 9, n. 1, pp. 25-52.
- Alpini, A. (2018), *L’impatto delle nuove tecnologie sul diritto*, in “Comparazione e diritto civile”, pp. 1-13.
- Bertolini, A. (2016), *Insurance and risk management for robotic devices: identifying the problems*, in “Global Jurist”, pp. 1-24.
- Bertolini, A., Salvini, P., Pagliai, T., Morachioli, A., Acerbi, G., Trieste, L., Cavallo, F., Turchetti, G., Dario, P. (2016), *On Robots and Insurance*, in “International Journal of Social Robotics”, v. 8, pp. 381–391.
- Bianca, C.M. (2000), *Diritto civile. Il contratto*², Giuffrè, Milano.
- Boscarato, C. (2011), *Who is responsible for Robot’s actions? An initial examination of Italian law within a European perspective*, in B. Van Berg and L. Klaming (edited by), *Technologies on the stand: legal and ethical questions in neuroscience and robotics*, Wolfpublisher, Nijmegen, pp. 383-420.
- Capaccioli, S. (2016), *Smart Contract: nuovi orizzonti del fintech*, in “Quotidiano Giuridico”.
- Caringella, F. and De Marzo, G. (2008), *Manuale di diritto civile*, v. 2, Giuffrè, Milano.
- Casey, A.J. and Niblett, A. (2017), *Self-Driving contracts*, in <http://ssm.com>, pp. 100-132.
- Costantini, F. (2017), *Intelligenza artificiale e diritto civile. Verso una “artificial intelligence forensics”?*, in G. Costabile, A. Attanasio and M. Ianulardo (edited by), *IISFA Memberbook 2017 Digital forensics: Condivisione della conoscenza tra i membri dell’IISFA Italian Chapter*, IISFA, Roma, pp. 17-39.
- Cuccuru, P. (2017), *Blockchain ed automazione contrattuale. Riflessioni sugli smart contract*, in “Nuova giur. civ. comm.”, 1, II, pp. 107-119.
- Di Sabato, D. (2017), *Gli smart contracts: robot che gestiscono il rischio contrattuale*, in “Contratto e impresa”, 2, pp. 378-402.

- Fairfield, J.A.T. (2014), *Smart contracts, bitcoin bots, and consumer protection*, in “Washington and Lee Law Review Online”, v. 71, n. 2, pp. 35-50.
- Finocchiaro, G. (2002), *La conclusione del contratto telematico mediante i “software agents”: un falso problema giuridico?*, in “Contratto e impresa”, 2, pp. 500-509.
- Finocchiaro, G. (2018), *Il contratto nell’era dell’intelligenza artificiale*, in “Riv. trim. dir. proc. civ.”, 2, pp. 441-460.
- Gemma, A. (2007), *L’accordo telematico*, in R. Clarizia (edited by), *I contratti informatici*, Utet, Milanofiori Assago, pp. 237-280.
- Kolvart, M., Poola, M. and Rull, A. (2016), *Smart contracts*, in T. Kerikmäe and A. Rull (edited by), *The Future of Law and eTechnologies*, Springer, Cham.
- Irti, N. (1998), *Scambi senza accordo*, in “Riv. trim. dir. proc. civ.”, 2, pp. 347-364.
- Irti, N. (1999), *È vero, ma...* (Replica a Giorgio Oppo), in “Riv. dir. civ.”, I, pp. 273-278.
- Irti, N. (2000), *Lo scambio dei foulards (replica semiseria al prof. Bianca)*, in “Riv. trim. dir. proc. civ.”, 2, pp. 601-604.
- Laurini, G. (2010), *Il notariato di domani: identità e innovazione*, in “Notariato”, pp. 237-238.
- Lessig, L. (1999), *Code and other laws of cyberspace*, Basic Books, New York.
- Lessig, L. (2001), *The future of ideas: the fate of the commons in a connected world*, Random House, New York.
- Manente, M. (2018), *Blockchain: la pretesa di sostituire il notaio*, in “Notariato”, 3, pp. 211-219.
- Matthias, A. (2004), *The responsibility gap: Ascribing responsibility for the actions of learning automata*, in “Ethics and Information Technology”, 6, pp. 175-183.
- Messinetti, D. (2002), *La manualistica e le nozioni fondamentali del diritto*, in “Riv. dir. civ.”, 5, pp. 649-667.
- Nasri, M. (2018), *Nuove tecnologie: l’ultima domanda*, in “Notariato”, 5, pp. 485-488.
- Nicolò, R. (1958), voce *Adempimento*, in *Enc. dir.*, Giuffrè, Milano, I.
- Oppo, G. (1998), *Disumanizzazione del contratto?*, in “Riv. dir. civ.”, 5, pp. 525-546.
- Palmerini, E. and Bertolini, A. (2016), *Liability and risk management in robotics*, in R. Schulze and D. Staudenmayer (edited by), *Digital Revolution: Challenges for Contract Law in Practice*, Nomos, Baden Baden.

- Parola, L., Merati, A.T. and Gavotti, G. (2018), *Blockchain e smart contract: questioni giuridiche aperte*, in "I contratti", 6, pp. 681-688.
- Pinna, A. and Ibba, S. (2017), *A blockchain-based decentralized System for proper handling of temporary employment contracts*, in <https://arxiv.org/pdf/1711.09758.pdf>.
- Raskin, M. (2017), *The law and legality of smart contracts*, in <http://ssrn.com>, pp. 305-341.
- Remus, D. and Levy, F. (2016), *Can Robots Be Lawyers? Computers, Lawyers, and the Practice of Law*, in <http://ssrn.com>, pp. 1-75.
- Restuccia, D. (2017), *Il notaio nel terzo millennio, tra sharing economy e blockchain*, in "Notariato", 1, pp. 53-55.
- Ruscello, F. (2017), *Istituzioni di diritto civile*, Cacucci Editore, Bari.
- Santosuosso, A., Boscarato, C. and Caroleo, F. (2012), *Robot e diritto: una prima ricognizione*, in "Nuova giur. civ. comm.", 7-8, II, pp. 494-516.
- Santosuosso, A. (2016), *Diritto, scienza, nuove tecnologie*², Cedam, Padova.
- Sartor, G. (2002), *Gli agenti software: nuovi soggetti del cyberdiritto?*, in "Contratto e impresa", 2, pp. 465-499.
- Surden, H. (2012), *Computable Contracts*, in "UC Davies Law Review", 46, pp. 629-700.
- Szabo, N. (1997), *Formalizing and securing relationships in Public Networks*, in "First Monday", v. 2, n. 9, in <https://firstmonday.org/ojs/index.php/fm/article/view/548/469-publisher=First>.
- Szabo, N. (1997a), *The Idea of Smart Contracts*, in <http://szabo.best.vwh.net/idea.html>.
- Szabo, N. (1998), *Secure Property Titles with Owner Authority*, in <http://szabo.best.vwh.net/securetitle.html>.

CONTRIBUTORS

Stefano Caffio. Stefano has worked as a labour inspector for Italy's National Labour Inspectorate since 2008. After receiving his PhD in Labour Law from the University of Bari in 2006, he has collaborated with the ILO, carrying out research in the field of social dialogue.

Claudia Carchio. Claudia completed his PhD in Labor Law at the University of Udine. She currently works as a lawyer and she is a member of Udine's Bar Association.

Giulia Castellani. Giulia obtained a PhD in European Private Law at the University of Verona. She has also spent a number of research stays abroad, namely in Spain and France. Giulia conducts research in family and succession law. She has taken part in many conferences and international seminars and she is member of CEDIFAM, a research center set up at Department of Law of Verona. Giulia is also a civil lawyer, thus dealing with contracts and obligations and civil liability.

Federico Costantini. Federico is Researcher and Adjunct Professor of Legal Informatics at the University of Udine, Italy. His studies are focused on legal issues related to data protection, Artificial Intelligence and distributed system technologies.

Valeria Filì. Valeria is Full Professor of Labour Law at the University of Udine. Her areas of research and teaching are labour law, employment law, industrial relations law, social security law and anti-discrimination law.

Giorgia Anna Parini. Giorgia is a Postdoctoral Fellow at the University of Verona. In 2010, she obtained a PhD from the University of Padua. She is the author of two monographs and several articles published in law journals. She has been a speaker at various conferences in Italy and in Europe (especially Spain and Portugal).

Giuseppe Antonio Recchia. Giuseppe is a researcher in Labour Law at the Department of Political Science, University of Bari. He has authored a monograph and published numerous papers in law journals and books. His research focuses on trade union law and industrial relations, anti-discrimination law, business conversion and on its effects on the employment relationship, as well as on the gig economy.