

LABOUR AND SOCIAL SECURITY IN THE THIRD MILLENNIUM – THE TOUCHSTONE OF THE KNOWLEDGE SOCIETY

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Abstract

‘The end of the world’ has been predicted in many ways: one claimed the conscious robots would turn against the humans. ‘The end of the world as we know it’ is less murderous, yet worrying enough, because it means a radical change in one of man’s defining features: labour, with the Fourth Industrial Revolution as one of its causes. Structural challenges to the labour environment and tools set the background for this development. Labour’s fundamental components like who is performing it; how its results impact on the human being that performs it; and what laws must govern the interactions among labourers and society are all subject to change hereafter. The increasing role of technology, knowledge-based economy, and the continuous diversification of man’s needs and aspirations to safeguard the paramount human dignity outline the mandatory demand of adapting the labour law and social security law to these developments. Automation and robotisation are unavoidable and are to be implemented by continuously observing said needs and aspirations. Competence and ever higher levels of professionalism are mandatory for present and future lawyers and legislators in this domain.

Keywords: artificial intelligence, automation, globalization, labour law, social security, robots.

1. Introduction

Several assumptions envisaged the Third Millennium as including the world’s end to be caused by cosmic facts, like the alignment of planets, on May 5, 2000; or by technology faults like the infamous Y2K, also called ‘the millennium bug’, which was supposed to crash computers and any other electronic devices in the first seconds of the year 2000; or by the prophecy of the widely publicized, and equally widely misinterpreted, Mesoamerican Long Count calendar that on December 21, 2012 a worldwide change was to happen, either cataclysmic, or just transformative, so that a ‘New Age’ would begin. Moreover, the „*Rise of the Machines*” blockbuster, released in 2003, emphasized what the first instalment of *The Terminator* series had

anticipated in 1984, with conscious robots murderously turning against the humans and establishing their domination over mankind, even if the end-goal of this struggle was far from being clear.

On a less cinematic plan, a cursory examination of how, and whether, the end of the world should happen, would reveal competing outlooks between religious interpretations like what many see in *The Book of Revelation* of the New Testament; and less faith-related writings of authors more concerned by the future of the world rather than by its termination. In modern times, this latter category of works exceeds the science-fiction genre as intellectual products based on proven data and trends strive to outline possible, and probable, courses of developments; it is no coincidence that these writings first appeared basically in the wake the First

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Industrial Revolution in the 18th century, even if examples may be found earlier¹.

Science and technology are unanimously recognized as major drivers for the progress of human society: ever since our ancient predecessors tied a roughly polished piece of flint to a stick in order to better dig the ground, or to hunt, even kill another being, man's life took a most important step towards a new stage. One is at pains nowadays to consider this a technological breakthrough, and even less a result of applied science. However, a long and slow string of events of similar nature recorded moments in the evolution of the hominis' brain cells that triggered a dramatic change in the size of the brain and, later, supposedly in its 'wiring', which was an even more consequential mutation for the human being's cognitive capacity². All these happened some 300,000 years ago, apparently at roughly the same time when usage of fire became a daily habit.

Around 230,000 years had to pass until another development shaped 'the Cognitive Revolution' and marked 'the beginning of history'; and then, a 'shorter' period of 58,000 years was needed for the Agriculture Revolution to take place.³ The record of the sequence of every and all epoch-making moments that followed reveals that the closer in time to the present day, the shorter the periods between them; truly, humankind seems to hurl itself at increasing speed on the time-flow, driven by the unescapable urge of gaining more knowledge in a seemingly geometrical ratio - and often without giving

full consideration to what the consequences of this acquired knowledge are.

Ethics and morals deal with the causes of this questionable behaviour. History is witness to statements that highlight prescient warnings, and regrets, either explicit, or implicit, related to inventions that had been meant to be useful to humanity's progress, but turned to be key factors in jeopardizing it, to the extreme limit of ending its very existence. One only needs to remember Alfred Noble's remarks on his invention of the dynamite and Oppenheimer's quote of the Bhagavad Gita: '*Now I become Death, the destroyer of worlds.*' In both cases, what had made these brilliant scientists reconsider their breakthrough inventions and discoveries could do next to nothing from preventing their use to purposes and with results they tried to prevent from coming to pass. However, as it is well known, those dramatic developments did have positive effects, albeit less than perfect, with the partly successful attempts to reach international agreements on limiting, sometimes utterly banning, the misuse of the research results.

Man's quest for knowledge bears on deeper philosophical issues like Gaugin's masterpiece *Where do we come from? What are we? Where are we going?* presents in powerful, yet enigmatic and thought-provoking ways. It may be that the second and third questions are what makes humanity advance, the obsession of the end of the road notwithstanding; because it is the journey, i.e., what one does, that allows for

¹ Around 1771, Louis-Sébastien Mercier, a French author, wrote *L'An deux mille quatre cent quarante*, which depicts an Earth-based utopian society venerating science in the 25th century. It is considered among the first writings that placed a future society on Earth, not on some imaginary planets.

² Anneline Pinson *et alii*, *Human TKTL1 implies greater neurogenesis in frontal neocortex of modern humans than Neanderthals*, in *Science*, September 9, 2022, Vol. 377, Issue 6611, <https://www.science.org/doi/10.1126/science.abl6422>, *apud* Carl Zimmer, *What Makes Your Brain Different From a Neanderthal's?* The New York Times, September 8, 2022, <https://www.nytimes.com/2022/09/08/science/human-brain-neanderthal-gene.html>

³ Yuval Noah Harari, *Sapiens – A Brief History of Humankind*, Vintage, 2015, pp. IX-X.

the finding the answers to these questions. And it is the realization of this quest that makes humans strive for accomplishing their becoming dignified, respected beings, while simultaneously respecting others and fulfilling their destiny.

The lines above may seem hardly suited for a paper that addresses the relationship among labour, social security, and knowledge-based society. The explanation is to be found in the increasingly complex interactions among knowledge, which is the eternal foundation of human society, so much so that it has become its *defining* characteristic; labour, which is the means of both acquiring knowledge and putting it to use, irrespective of it being manual, or intellectual; and security, which is a *sine qua non* condition for progress and prosperity of the human society and which has itself developed to become the overall *social* feature, since humans are *social beings* by their very nature. All these components of the everyday life develop along the fourth dimension, which is time; and time is 'distributed' in sequences, which are more or less definite. When keeping in mind what Heraclitus said: '*panta rei*' ('everything flows', to be completed with 'and nothing stays'), and relating this constant to the ever more speeder ratio of change, one arrives at the conclusion that humans need to adapt ever faster to equally fast changing new circumstances throughout their existence to extents unbeknown so far.

2. Challenges of the advance of technology...

The knowledge-based society as heralded by the Fourth Industrial Revolution is under the pressure of the unknow; it is not by chance the Future of Life Institute chose its mission to be *Steering transformative technology towards benefitting life and away from extreme large-scale risks*.⁴ Last March, it released an open letter that read, *inter alia*: '*Should we automate away all the jobs, including the fulfilling ones?*'⁵. An apparent prescient answer had been provided: '*Nobody knows for sure what sort of impact machine learning and automation will have on different professions in the future, and is extremely difficult to estimate the timetable of relevant developments, especially as they depend on political decisions and cultural traditions as much as on purely technological breakthroughs.*'⁶

In 1959, a researcher published a paper widely considered to be the 'birth certificate' of '*machine learning*', which is '*the field of study that gives computers the ability to learn without explicitly being programmed*', and which, in time, became a field of the AI; both terms are now understood and used interchangeably and there is a general acceptance of their presence and impact in most, if not all, domains of human life – and this makes it mandatory to realize '*the social, societal, and ethical implications*' of machine learning and/or AI.⁷

Some implications are addressed later in this paper. At the same time, mapping those '*relevant developments*' would go far beyond its scope; suffice to note that the combined actions of the sides of the triangle

⁴ The Future of Life Institute, <https://futureoflife.org/>, accessed on April 25, 2023.

⁵ Quoted in ***, *How to worry wisely about artificial intelligence*, The Economist, April 20, 2023, <https://www.economist.com/leaders/2023/04/20/how-to-worry-wisely-about-artificial-intelligence>.

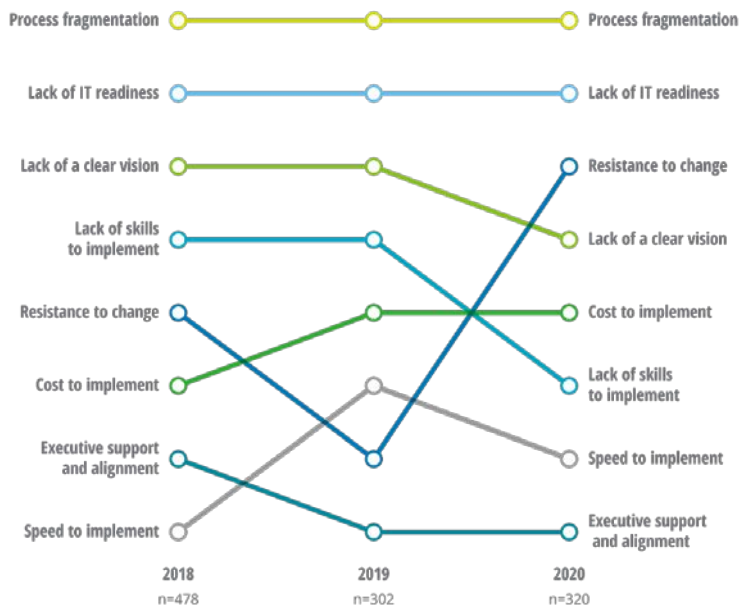
⁶ Yuval Noah Harari, *21 Lessons for the 21st Century*, Jonathan Cape, Penguin Random House, 2018, p. 33.

⁷ Sarah Brown, *Machine learning, explained*, MIT, April 21, 2021, <https://mitsloan.mit.edu/ideas-made-to-matter/machine-learning-explained>. See also *What is machine learning?*, IBM, <https://www.ibm.com/topics/machine-learning>.

made of *'political decisions, cultural traditions and technological breakthroughs'* focus on *professions*, which means basically the receiving parties of the impact of machine learning and automation. At this stage of the technological evolution, those parties are overwhelmingly represented by human beings, commonly known as 'employees', or 'labourers', or 'workers', largely irrespective of their hierarchical status in their organizations – for top managers themselves are not spared by this impact. Moreover, it is the decisions made by the latter group that play the decisive role in implementing the Robotic Process Automation (RPA), as the dedicated studies call it.

Indeed, the 2020 Deloitte's annual survey of executives⁸, reveals that, of all respondents *'78 per cent are implementing Robotic Process Automation and 16 per cent plan to do so in the next three years'*. Integrating automation and Artificial Intelligence (AI) successfully and... intelligently calls for several conditions to be met – like acknowledging that transformation is needed and a comprehensive strategy to implement 'the art of the possible' and promote change across the board, to prevent the fragmentation of the process. It also listed obstacles to the process (see the figure below).

Top barriers to scaling intelligent automation



Source: Deloitte analysis.

Deloitte Insights | deloitte.com/insights

⁸ Justin Watson *et alii*, *Automation with intelligence*, Deloitte Insights, November 25, 2020, <https://www2.deloitte.com/us/en/insights/focus/technology-and-the-future-of-work/intelligent-automation-2020-survey-results.html>.

It is noteworthy that, out of eight obstacles the ‘*lack of IT readiness*’ stayed on the same level, while ‘*resistance to change*’ shot up between 2019 and 2020: it was the only hindrance to record this evolution. Meanwhile ‘*the clear vision*’ seemed to have become ‘clearer’ and the ‘*lack of skills to implement*’ was apparently lessened – perhaps due to appropriate training and/or hiring the necessary human resources. Be that as it may, half of the entries in that graph are directly human-related, meaning that employees and employers alike were the main ‘builders’ of those barriers.

The survey covered the period when the pandemic was raging, and one may easily suppose that implementing the RPA was regarded with a lot of suspicion, particularly by the employees who were already severely constrained by lockdowns, interdictions, and related burdens in many economies. One remembers the wide-ranging debates on the immediate and medium-term consequences the pandemic on the overall status of labour, from the labour-place itself, with the impact of the ‘remote labour’ phenomenon, to the doubts haunting the fate of offices and the surge of ‘gig-workers’⁹. In this respect, a McKinsey report identified

three areas that ‘*not only emerge from the COVID-19 crisis but thrive in the post-pandemic world*’ and enumerates: ‘*Temporary changes in response to crisis* [...]’; ‘*Permanent changes to the day-to-day work* [...]’; ‘*New types of work*’¹⁰.

Automation and robotization have become every-day words and are increasingly perceived as an unavoidable, if inextricable, trend: quoted among the reasons are ‘*the covid-19 [that] has created social changes which look likely to endure*’, such as ‘*the “Great Resignation”, in which millions around the world have quit their jobs, may in part be a consequence of lockdowns creating new opportunities for home working*’; and ‘*that the bots are getting better. Instead of just moving goods in warehouses to human “pickers”, who then put items into bags for home delivery, they are learning to do the picking and packing for themselves.*’¹¹

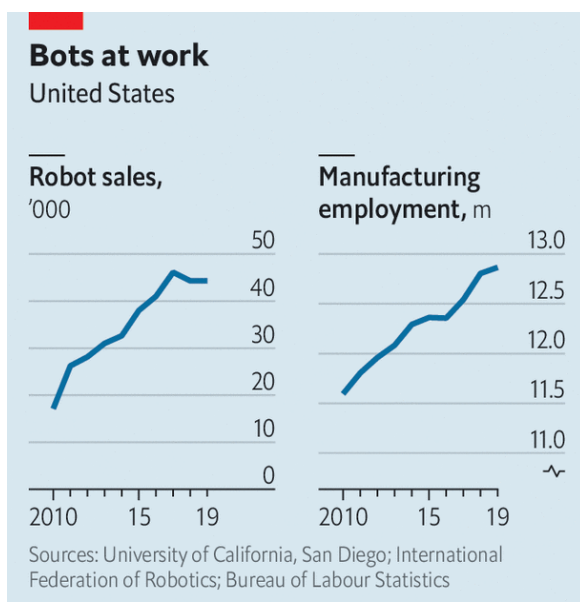
However, it looks that the advent of a ‘machine-ruled’ world, which sometimes has a doomsday spin, is not that imminent, nor is its ominous feature unavoidable. Data published a little more than a year ago introduce a different picture¹²:

⁹ See, *inter alia*, Claudia-Ana Moarcăș, *The Contemporary Architecture of The Labour Relationship: Experiences and Challenges*, in AUBD 2/2022, pp. 41-56; Claudia-Ana Moarcăș *Impactul pandemiei asupra sănătății și securității lucrătorului. Viitorul muncii (The impact of the pandemic on the employee’s security and health. The future of work)*. Remarks at the Craiova conference on “Sistemul juridic între stabilitate și reformă” (The judicial system between stability and reform), October 15, 2021.

¹⁰ Marino Mugayar-Baldocchi, Bill Schaninger, Kartik Sharma, *The future of work: Understanding what’s temporary and what’s transformative*, McKinsey & Company, May 17, 2021, <https://www.mckinsey.com/capabilities/people-and-organizational-performance/our-insights/the-organization-blog/the-future-of-work-whats-temporary-and-whats-transformative>.

¹¹ ***, *Covid has reset relations between people and robots*, The Economist, February 25, 2022, <https://www.economist.com/science-and-technology/covid-has-reset-relations-between-people-and-robots/21807815>.

¹² *Ibidem*.



The Economist

A recent study that covered over 800 companies with around 11.3 million employees found they ‘will need new workers to help them implement and manage AI tools. Employment of data analysts and scientists, machine learning specialists and cybersecurity experts is forecast to grow 30% on average by 2027’; and among the domains that are expected to witness the highest growth-rates the report listed ‘education, agriculture and digital commerce and trade’¹³. Likewise, the International Federation of Robotics noted that ‘even South Korean firms, by far the world’s keenest robot-adopters, employ ten manufacturing workers for every industrial

robot [...]. In America, China, Europe and Japan the figure is 25-40 to one.’¹⁴

... to all components of the human life

As far back as some 40 years ago, Charles Handy noted ‘new patterns of work [...] on their way whether we like them or not’ and added: ‘By early 1980s, the direction of some of those patterns of work was becoming clearer’; among them ‘labour’ and ‘manual skills’ were yielding to knowledge as the basis for new businesses and new work’; and ‘the one-organization career was becoming rarer, job-mobility and career changes more fashionable’.¹⁵ This

¹³ ***, *The Future of Jobs Report 2023*, World Economic Forum, April 30, 2023, <https://www.weforum.org/reports/the-future-of-jobs-report-2023/>. See also the many-authored paper: *The AI Index 2023 Annual Report*, AI Index Steering Committee, Institute for Human-Centered AI, Stanford University, Stanford, CA, April 2023, https://aiindex.stanford.edu/wp-content/uploads/2023/04/HAI_AI-Index-Report_2023.pdf.

¹⁴ ***, *Don't fear an AI-induced jobs apocalypse just yet*, The Economist, March 3, 2023, <https://www.economist.com/business/2023/03/06/dont-fear-an-ai-induced-jobs-apocalypse-just-yet>.

¹⁵ Charles B. Handy, *The Future of Work: A Guide to a Changing Society*, B. Blackwell Publication, January 1, 1984, p. ix-x.

reference is meant to both reveal the relatively early beginning of the structural changes in the patterns of work, and their steady advancement as the progress of technology was increasingly influencing the very basics of human life. It may seem superfluous to emphasize that technological breakthroughs, in particular, and technological progress, in general, are indestructibly related to the human drive to well-being, prosperity, and safety; it is also difficult to ignore the relentless tidal wave of information, especially of the fake- and deep-fake kind, that has nurtured the post-truth concept to an almost unthinkable extent. Reality has never been a concept to be taken lightly, and thousands of years of philosophical thinking attest this elementary fact; however, the dignity and fulfilment of man's aspirations and ideals are crucial factors that determine this reality, the spectacular expansion of 'virtual reality' notwithstanding.

The pace of change of, and challenges to, this reality seems more often than not breath-taking. Only two years and several months ago the world was in turmoil because of the pandemic, and the brief above-mentioned reminders of what happened then point to the lasting, and yet, unfinished effects of those developments. The increasing demand for AI-related professional skills is one of them, while the general impact it is supposed to have on society is clearly more complex: according to the head of the New-York based Future Today Institute, *'artificial intelligence could go in one of two directions over the next 10 years: in an optimistic scenario, [...] (t)he technology serves as a tool that makes life easier and more seamless, as AI features on consumer products can anticipate user needs and help accomplish virtually any*

task.'; whereas the *'catastrophic scenario involves less data privacy, more centralisation of power in a handful of companies and AI that anticipates user needs - and gets them wrong or, at least, stifles choices.'* The scientist reckons the first scenario has only a 20% chance¹⁶.

However, it would be wrong to be overwhelmed and subdued by the complexity of the challenges AI and automation rise in front of us. One should remember that there were times when the speed of trains traveling at some 20 km/h was deemed fatal for the passengers; and the Luddites movement seemed to threaten the course of the First Industrial Revolution. If history is any guide for the topic of this paper, the slim chances of the above-mentioned optimist scenario are likely to be wide of the mark. Answers to such concerns have been given already and the increasing number of studies bearing on the impact of the Fourth Revolution on society at large, and on business and growth is testimony to that.

3. New rules and updated ones

Initiatives and decisions aiming at regulating the use of technology in terms of addressing its disruptive effects on society are increasingly sought and efforts in this direction are neither easy, nor necessarily consistently structured. Harari's confession about the unknown impact of some basic components of technology on professions, as mentioned at the beginning of this paper, may be substantiated by recalling that there was no knowing of what Guttenberg's printing machine was to cause – just like it is only now, around three decades since the internet and the World Wide Web entered our daily life, that we begin to realize how

¹⁶ Quoted in Anthony Zurcher, *AI: How 'freaked out' should we be?*, BBC, March 16, 2023 <https://www.bbc.com/news/world-us-canada-64967627>.

deeply they have changed this life across the board. The Internet of Things is a continuously expanding reality, and trivial things like programming the coffee-maker to start working autonomously are simultaneous to labourers wondering whether the shift to robots at their working-place shall cause them lose their and their family's livelihood. To put it otherwise, it seems odd to dedicate no small amount of energy and intellectual efforts to address the consequence of such a deeply structural, all-encompassing transformation as caused by the expanding use of AI only; however, the option of 'wait-and-see' proves to be a hardly commendable, not least because said transformations occur at so wide a scale, in terms of sheer numbers of individuals that are exposed to their impact; and because their comprehensive scope in terms of domains of human activity. Moreover, the consequences taking shape already most probably belong to the category of long-term effects, which renders them a disquieting no-return feature.

It is well-known, if not necessarily usually observed, that new challenges can hardly be successfully addressed by resorting to old methods. The knowledge-based society might be considered a figment of one's intellectual imagination: society has *always* been based on knowledge, as even during the so-called Dark Ages there were those who *knew* how to organize their lives, even as they brutally took advantage of others. The obvious stark difference is provided by the width and contents of knowledge; and the quest for knowledge has been the defining feature of man's evolution since the very beginning. There is no natural barrier between human knowledge and human society and one cannot advance when the

other regresses; one would surmise there is no way that society could ever be taken over by machines.

And yet, these statements seem less obvious when one considers, for instance, that the famous Three Laws of Robotics that Isaac Asimov posited in his fascinating books have never been seriously considered in real life; yet, even he felt the need to eventually add the Zero Law, which allowed his humanoid robots to pass judgments and choose between saving *one* human and protecting *humanity*. This literary sci-fi divagation aside, the mandatory requirement of issuing regulations to be implemented on the internet and AI is a high-profile exercise. Papers and books of respected authors have been multiplying of late in this respect and, in the wake of the spread of the ChatGPT-4 – the latest of generative AI-tools – Garry Marcus and Anka Reuel noted that '*One of the key issues with current AI systems is that they are primarily black boxes, often unreliable and hard to interpret, and at risk of getting out of control.*'; moreover, they argued: '*In the past year alone 37 regulations mentioning AI were passed around the globe; Italy went so far as to ban ChatGPT. But there is little global coordination. Even within some countries there is a hodge-podge, such as different state laws in America, or Britain's proposal to eschew a central regulator, leaving oversight split among several agencies. An uneven, loophole-ridden patchwork is to no one's benefit and safety.*' In their view, the foundation of an international agency for artificial intelligence is urgently needed, to the likes of the International Civil Aviation Organization '*in which member countries make their own laws but take counsel from a global agency.*'¹⁷

¹⁷ *The world needs an international agency for artificial intelligence, say two AI experts*, The Economist, April 18, 2023, <https://www.economist.com/by-invitation/2023/04/18/the-world-needs-an-international-agency-for-artificial-intelligence-say-two-ai-experts>.

The relationship between the on-going transformative process of AI and of the implementation of AI-related tools in ever more domains, as well as the attempts to regulate their use are most visible in the communication sector, not least because of the intimate link between this technology and the cognitive component of our nature. This relationship is equally relevant in another defining domain for the human being, which is labour, in its entirety: *who* is performing it; *where* it is done; *how* it is developing; and *what rules* are to be followed when about its organization, its conditions, and, most important of all, the achievement of its ultimate goal in terms of human dignity, respect and prosperity.

4. Labour law and social security

In the 1960s, Herbert Simon, the 1978 Nobel-prize winner for economy, anticipated that machines shall develop to the extent that would enable them to perform whatever man would do in twenty years¹⁸; although this has not quite come to pass, the impact of AI on virtually anything is no longer imaginary, as briefly reviewed above; likewise, *‘Many projections see this industry growing over the next ten years, from an estimated global market size of USD 2.4 billion in 2021 to over USD 11 billion by 2031’*¹⁹.

The questions bearing on how labour and social security are influenced are increasingly intense, not least because there are instances when the use and, more

gravely, abuse, of advanced technology and/or AI tools may lead to consequences that are most harmful to society and its members. Discrimination in hiring and salaries, disregard of suitable working conditions, lack of transparency and participation in the decision-making processes that are relevant to employees’ rights, surveillance at the working-place, including under teleworking circumstances are several aspects where over-reliance on AI tools are conducive to predominantly negative consequences and call for appropriate regulations and rules to be conceived and implemented. Moreover, one of the most worrying possible developments that would harm the well-being and prosperity of labourers may be found when resorting to AI and its tools with a view to obtaining increased profits at the expense of social security-related aspects of the employees, under the pretext of lowering production costs; in this respect, a working paper published by the International Labour Office (ILO) warned that *‘even if a Universal Basic Income were introduced, the existence of managerial prerogatives would still warrant the existence of labour regulation since this regulation is about much more than protecting workers’ income’*²⁰

Awareness of these challenges resulted, *inter alia*, in a proposal the ILO Director-General had put forward in 2013, which paved the way to the ‘Centenary Declaration on the Future of Work’ that was adopted in 2019²¹. A year later, the

¹⁸ Quoted by Victor Storchan in introducing *Sam Altman: la loi fondamentale de l’IA*, Le Grand Continent, April 14, 2023, <https://legrandcontinent.eu/fr/2023/04/14/sam-altman-la-loi-fondamentale-de-lia/>. The sentence needs to be completed with his emphasis that this might be true technologically speaking only.

¹⁹ K. Portillo Chavez, J. Bahr, T. Vartanian, *AI has made its way to the workplace. So how have laws kept pace?*, OECD, AI Policy Observatory, December 6, 2022, <https://oecd.ai/en/wonk/workplace-regulation-2022>.

²⁰ Valerio De Stefano, *Negotiating the Algorithm: Automation, artificial intelligence and labour protection*, International Labour Office, Geneva, 2018, https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_634157/lang--en/index.htm.

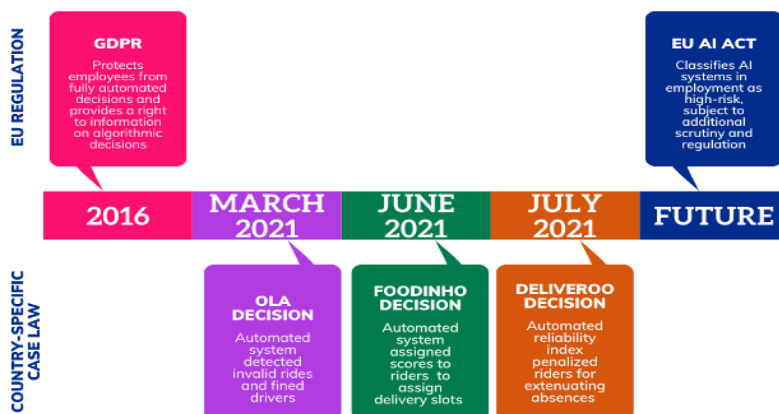
²¹ See ILO: *The future of work*, <https://www.ilo.org/global/topics/future-of-work/lang--en/index.htm>.

European Trade Union Institute recalled ‘(the) *European Commission recently stating that ‘artificial intelligence with a purpose can make Europe a world leader’.* For this to happen, though, the EU needs to put in place the right ethical and legal framework [...] that [...] must be solidly founded on regulation – which can be achieved by updating existing legislation – and that it must pay specific attention to the protection of workers. Workers are in a subordinate position in relation to their employers, and in the EU’s eagerness to win the AI race, their rights may be overlooked. This is why a protective and enforceable legal framework must be developed, with the participation of social partners.’²² In this respect, several domains ought to be considered²³:

•safeguarding worker privacy and data protection;

- addressing surveillance, tracking and monitoring;
- making the purpose of AI algorithms transparent;
- ensuring the exercise of the ‘right to explanation’ regarding decisions made by algorithms or machine learning models;
- preserving the security and safety of workers in human–machine interactions;
- boosting workers’ autonomy in human–machine interactions;
- enabling workers to become ‘AI literate’.

Earlier, in 2016, the EU had adopted the General Data Protection Regulation²⁴ that is a most important legislation on privacy and a consistent implementation of human rights under the circumstances as created by the new technologies. (see below an image of the process and components of this regulation²⁵).



²² Aida Ponce Del Castillo, *Labour in the Age of AI: why regulation is needed to protect workers*, The European Trade Union Institute, Foresight Brief #8, February 8, 2020, <https://www.etui.org/publications/foresight-briefs/labour-in-the-age-of-ai-why-regulation-is-needed-to-protect-workers>.

²³ ***, *Is specific labour protection needed in the digital age?* – Eurofound, 15 December 2021, <https://www.eurofound.europa.eu/data/digitalisation/policy-pointers/is-specific-labour-protection-needed-in-the-digital-age>.

²⁴ Please see <https://gdpr-info.eu/>.

²⁵ K. Portillo Chavez, J. Bahr, T. Vartanian, *op.cit.*

The complexity of the unavoidable endeavour of building the knowledge-based economy and society is joined by the equally mandatory demand that relevant laws and regulations bearing on labour and social security be prepared and enforced under the new circumstances as sketched in previous pages. Like the general option of addressing both existing legislations, and updating it, the tasks of training and developing the intellectual capabilities of the present-day society to manage the emerging challenges of this reality need to find the right course of action in universities and post-graduate education without any further delay. As mentioned in more than one occasion, this situation appears whenever an epoch-making change occurs, in whatever decisive domain: if it were to extrapolate Schumpeter's cycle of 'creative destruction' to training and education, it would follow that the expected Ai-generated radical transformation of labour should call for abandoning whatever legacies related to the 'old' circumstances and replace them with new rules, and law, and practices – sometime, even with little, or no regard at all to the historical and cultural heritage, in the name of the alleged 'unifying, levelling effect' of transborder integration and globalization.

A closer look at what society has achieved in its continuous drive to adapt to new circumstances that itself created unquestionably denies the soundness of this option. It is true that momentous transformations are most probably going to a radical impact on our life as we know it. No rocket-scientists are needed to realize the unparalleled communication leap that humanity took 20 years ago only – that means less than the time needed for

obtaining a university degree – when the first smartphone was invented: and by November 2022, data read that around 6.84 billion smartphones were in use – i.e., 85% of the 8 billion global population²⁶, albeit grossly unevenly distributed all over the world; and similar developments may be found elsewhere. However, there is a continuum in this process that underpins the human nature itself and cannot undo the values of dignity and mutual respect unless society embarks heedlessly on the way to chaos and self-destruction – and therefore questions the very supreme goal, and right, of finding happiness and accomplishment.

Returning to the specific domains of labour and social security, it is to be expected that their normative framework be aimed first and foremost at strengthening their structural roles of being the touchstones of the knowledge-based society, rather than weakening, even voiding them of this mission, whatever the alleged reasons. Multidisciplinary dialogues among experts in labour law, social security, AI, management, human resources, education and training would be welcome to address these issues *sine ira et studio*.

5. Instead of conclusions

The present and the future of the labour law are not only linked, they are also complementary to each other. This seems to be a common, self-evident assertion, very much like the statements that the present is the result of the past and that whoever ignores one's own history would risk to have no future. However, it is generally agreed that self-evident findings are not less relevant: like Schumpeter warned, '*nothing is so treacherous as the obvious*'²⁷.

²⁶ ***, *Number of smartphone mobile network subscriptions worldwide from 2016 to 2022, with forecasts from 2023 to 2028*, Statista, <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>.

²⁷ Joseph A. Schumpeter, *Capitalism, Socialism and Democracy*, Routledge, 2010, p. 272.

In the interconnected world of labour, jobs and qualifications that shall be characteristic to the post-pandemic age, a mix of professional abilities are needed, because new technologies lead to new jobs that differ from classic ones, as they are to rely on knowledgeably operating electronic means. At the same time with the division of labour between man and Artificial Intelligence the transition to future occupations and the image of future professions shall raise significant challenges to labourers, employers, and governments alike.

The post-pandemic age shall need to put forward a legal framework for digitalization, and mainly for platform labour and cross-border workers. The ILO Global Commission on the Future of Work calls member states to set up an international system to govern digital platforms. The initiative focuses on: (i) remuneration, labour conditions, data protections and intimacy; (ii) fair and transparent, not 'masked' contracts; (iii) social protection, mainly paid leaves and pensions; and (iv) the freedom of association, representation of employees, and consultations. We posit that the bi- and/or tri-partite social dialogue should play a major role in reaching an agreement on this issue.

Under these circumstances, the impact of the normative process on labour relations, that is to say of labour law on economic life, cannot be contested, nor can it be ignored. Labour legislation is a fundamental tool of economic policy including the amount of salaries, the possible income redistribution by possible social security means (mainly pensions and unemployment benefits), stimulating labour force to get involved in production, the overall benefits of the labour market, securing and operation of employment services, immigration policies a.s.o.

The modern economy is more reliant on the cognitive component than on materials and physical labour. In order to cope with challenges issuing from the new forms and organisation of economy, employers have to create jobs as needed in a dynamic society that is based on knowledge and progress of production means and goods. This calls for substantial investments in education and science, as well as in employment policies. Results of research, in general, and of technological advancement, in particular, are ever more rapidly associated with growing crisis phenomena in all directions and with ever wider enlargement of their scope, because of deepening globalization-stimulated interaction. Indeed, to some extent, one may talk about the butterfly effect being turned into an everyday reality.

To conclude, present-day society facing unprecedented diversification of challenges in the labour domain and, implicitly, in social life, makes it mandatory to be creative, flexible, and open to conceptual and institutional, and equally teaching, innovation; and this attitude, which is itself a challenge, needs to be built even as it focuses on the Man's personality and becoming with a view to reaching full accomplishment in all the fields of this social life. The school, in the high sense that is provided by the functional and semantic coincidence with the *academia* of the ancient Greeks, is called to fulfil the noble and not-at-all simple task of permanently preparing the members of human society for the future – as well as for its present: as Pope John Paul II said: '*the future starts today, not tomorrow*'.

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