

THE PRECARIZATION OF WORK IN THE DIGITAL AGE AND ITS IMPACT ON LABOR-ENVIRONMENTAL BALANCE

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ABSTRACT

This article aims to address the impact of Industry 4.0 on the fundamental right to a balanced work environment, which is essential to save the health and safety of workers, as well as analyze how the Brazilians Judiciary and Legislative Powers have faced this theme. To this end, it was adopted the bibliographic research and the use of the deductive method, seeking to demonstrate how transformations occurred in the labor field due to the Industrial Revolutions. Subsequently, approached the capitalism hyper late and how this was (and has been) felt by the working class. While it is not possible to attribute all the ills of the labor-environmental balance to Industry's emergence, it is certain that the technological innovations resulting from the latter have intensified and accelerated the process of precarious to fundamental worker rights. The research showed that, although new and sophisticated forms related to the incidence of technology mark the work, they have not, for the most part, led to the improvement of working environment conditions, especially in relation to the journey, pointing that Brazilian jurisprudence and ordinary legislation need to consider this reality to be adequate to the constitutional guidelines.

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Keywords: fundamental rights of the worker; Industry 4.0; precarization of labor-environmental balance.

*A PRECARIZAÇÃO DO TRABALHO NA ERA DIGITAL E SEU
IMPACTO NO EQUILÍBRIO LABORAL-AMBIENTAL*

RESUMO

Este artigo tem por escopo versar sobre o impacto da Indústria 4.0 no direito fundamental ao ambiente laboral equilibrado, o qual é imprescindível para salvaguardar a saúde e a segurança do trabalhador; bem como analisar como os Poderes Judiciário e Legislativo brasileiros têm enfrentado essa temática. Para tanto, adotou-se a pesquisa bibliográfica e utilizou-se do método dedutivo, buscando demonstrar as transformações ocorridas na seara laboral em razão das Revoluções Industriais. Posteriormente, abordou-se o capitalismo hipertardio brasileiro e como este foi (e vem sendo) sentido pela classe trabalhadora. Embora não se possa atribuir todas as mazelas do equilíbrio labor-ambiental ao surgimento da Indústria 4.0, o certo é que as inovações tecnológicas advindas desta última têm intensificado e acelerado em demasia o processo de precarização dos direitos fundamentais do trabalhador. A pesquisa possibilitou constatar que, embora o trabalho seja marcado por novas e sofisticadas formas relacionadas à incidência da tecnologia, estas não têm, em sua maioria, levado à melhoria das condições do ambiente laboral, em especial quanto à jornada, apontando que a jurisprudência e legislação ordinária brasileiras precisam considerar essa realidade para mostrarem-se adequadas às diretrizes constitucionais.

Palavras-chave: *direitos fundamentais do trabalhador; Indústria 4.0; precarização do equilíbrio labor-ambiental.*

INTRODUCTION

The transformations in labor relations resulting from the industrialization process have brought about numerous consequences to the labor-environmental balance, aggravated during its historical path, which is currently marked by increasingly sophisticated and rapidly improved automation. It is in this context that safeguarding workers' fundamental rights from precarization is not an easy task, since it requires updating the ordinary legislation or, at least, a systematic and expanded understanding of the current legal system.

Firstly, the Industrial Revolutions will be addressed to demonstrate the impact of the aforementioned industrialization process and explain about their consequences in themes such as the worker's health and safety in the factory environment and in their new implanted forms.

By means of this explanation, then it will be possible to understand why only in the 1988 Brazilian Constitution there was a concern with the *jusfundamentalidade* of worker protection in the face of automation, which is essential to guarantee other rights enshrined as fundamental, such as the healthy and safe working environment.

Next, the effects of automation from Industry 4.0 on labor relations will be addressed, with an emphasis on those that reflect labor-environmental balance, and, for that purpose, one will consider, for example, the following question by Schwab (2016, p. 57): "Is this the beginning of a new and flexible work revolution that will empower any individual who has an internet [sic] connection and that will eliminate the shortage of skills? Or will it trigger the onset of an inexorable race to the bottom in a world of unregulated virtual sweatshops?" Such an investigation will make it possible to ascertain whether we are facing the precarization of the work environment, with a certain emphasis on the workday theme.

Thus, to achieve the objectives set, the deductive approach method will be used, since, initially, one will discuss about some modifications promoted by the Industrial Revolutions in the labor field, to later enter into the *jusfundamentalidade* of the balanced work environment and the protection to workers in the face of automation, with the purpose of analyzing whether in fact there is observance of such rights in the Brazilian context, marked by Industry 4.0 or its precarization; besides, a parallel with foreign legislation and jurisprudence will be made when addressing the understanding of the Brazilian Legislative and Judiciary Powers of the current issues, which

involve the theme of automation. Bibliographic and documentary research techniques will be used.

1 INDUSTRIAL REVOLUTIONS AND THEIR IMPACTS ON WORKER'S HEALTH AND SAFETY

The world of work has been constantly modified throughout history by the forms of administration of production and human labor that emerged in the development of capitalism, such as the Taylorism, Fordism, Toyotism and Industry 4.0 models, which influenced (and continue to influence) issues related to worker's health and safety and, consequently, the work environment balance. This is because the worker's physical, psychological and social health is impacted by the conditions and organization of work (DIAS, 2015, p. 193).

The First Industrial Revolution emerged in England in the mid-eighteenth century as a result of a growing movement of urbanization, in which factories were installed in urban agglomerations, expanding later throughout Europe. Modern industrialization replaced the model of artisanal and manufacturing work, causing profound social and economic changes (COSTA; ALMEIDA, 2017, p. 50).

During this period, the agricultural revolution played an important role in industrialization in England, since, with the advance of agricultural methods, there was an expansion of production and the supply of raw materials to the expanding industry. With the evolution of the capacity to use the soil, due to the introduction of technological innovations, the workers, who had previously seen themselves in a "colonist system relationship," were driven away from the countryside by the "landowners," which led to a considerable increase in the labor force in the urban area (GUIMARÃES, 2016, p. 34-35, our translation).

Thus, there was a considerable number of workers without work, forced to migrate from the countryside to the cities, where they also found themselves replaced by machines. This, added to a liberal economic narrative of the business community, which aimed at maximizing profit, led to the initiation of excessive ways of work utilization (GUIMARÃES, 2016, p. 35).

This alteration brought about by the advent of the manufacturing environment caused changes to the workers, who saw intensification of exploitation of their labor – through a new system, marked by hierarchy,

extension of the work rhythm controlled by machines –, their subordination – represented, for example, by stipulation of an exhaustive working day, punctuality, work control –, as well as the “expropriation of the intellectual portion” of their work (COSTA; ALMEIDA, 2017, p. 50, our translation). This transformation, at the same time that changed the form of working, worsened its conditions and made its environment more precarious.

Although the “mechanization of work” has led to an increase in consumption through productivity and a decrease in price, this has also led to the mentioned intensification of the production rate, illnesses and increase in accidents at work, given the exhaustion, unhealthy environments and insufficient instruction in handling machinery. The great availability of manpower allowed workers to be objectified and discarded, especially in the event of accidents at work or illnesses, and as there was no protective legal system, whether of a labor nature or related to social security, they were helped only by the charities (COSTA; ALMEIDA, 2017, p. 50).

For Guimarães (2016, p. 35-36, our translation), the legal regulation of the new “salaried employment relationship” did not consider the worker subjection to the owners of the means of production, since it allowed the provisions of the employment contract to be freely stipulated, in compliance with the autonomy of the will. This model inevitably gave rise, and under the argument of freedom, to numerous abuses being committed against the worker, such as being subjected to work environments marked by terrible lighting and air circulation, with no safety, with deafening noises (COSTA; ALMEIDA, 2017, p. 50), exploitation of child and female labor, negligible salaries, the aforementioned excessive working hours – which corresponded to twelve to sixteen hours a day –, among other problems. The idea of health, in this context, was linked only to the search for survival, which gave rise to workers’ organized movements, aiming to ensure the right to life by reducing the working day (DIAS, 2015, p. 194), and, yet, against the Industrial Revolution (MARTINEZ; MALTEZ, 2017, p. 21-59).

Friedrich Engels (1975, p. 32-33) asserts that, before the introduction of machinery, workers had, for the most part, a life considered reasonable, decent and balanced, better than the conditions introduced by the Industrial Revolution, since before they did not have to exhaust themselves at work and had time for extra-work activities and rest, and the work they performed came at least as necessary for their needs.

The continuous development of technology, resulting from the

combination of technique with science and its contribution to industry, made countless discoveries and scientific and technological creations possible, causing industrial advances, and also advances in other fields. These elements expanded issues such as the replacement of human labor by “other forces of nature” and the diminishing importance of the first, under the valuation aspect arising from the First Industrial Revolution. The transformations resulting from new energies and technologies created the inevitability of adapting working conditions (GUIMARÃES, 2016, p. 37, our translation).

The industrialization process also required development of forms of work organization aimed at enhancing production. Based on this perception, Frederick Taylor developed the model of organization known as Taylorism, which, through the division and repetition of activities, “reduced work to a set of simple tasks, making the workforce fast and productive”. It is in this context that, at the end of the nineteenth century and the beginning of the twentieth century, the Second Industrial Revolution emerged (MARTINEZ; MALTEZ, 2017, p. 21-59, our translation).

In the same period, the Fordism production model, developed by Henry Ford, also arises from the use of electricity and conveyor belts in the automobile sector, based on the creation of a series production method that enabled the improvement and solidification of Taylor’s proposal. In addition to accelerating production through a change in the organization of work, Fordism enabled the administration not to be centered on work individual management, and it started to be performed collectively. The model in question represented the form of labor organization in which large-scale production is ensured “by the production chain and intensive labor control, and expansion of the market and profits by the project which aimed to increase consumption by coupling salaries to productivity” (GUIMARÃES, 2016, p. 37-39, our translation).

In addition to increasing productivity, the Fordism model made the work even more exhaustive and fragmented, which, due to the atrocious pace of production, once again triggered an increasing number of accidents and other damages to the worker’s health (MARTINEZ; MALTEZ, 2017, p. 21-59).

Social and economic factors led to the rupture of the Fordism model, which was associated with the ideas of freedom and solidarity and, also, with the fact that this model was no more able to meet the needs arising from technological complexity; intellectuality to perform activities became

imperative, thus requiring this skill from the worker (GUIMARÃES, 2016, p. 39-40).

This scenario led to the reformulation of the system, represented by what was called the “flexible accumulation regime,” which is supported by the “flexibility of work processes, labor markets, products and consumption patterns,” characterized by the emergence of new sectors of production, markets, ways of providing financial services and, above all, “highly intensified rates of commercial, technological and organizational innovation” (HARVEY, 2008, p. 140, our translation). Such a model emerged in the mid-twentieth century, which used to be called the Third Industrial Revolution (GUIMARÃES, 2016, p. 41), with the Internet as one of the landmarks and, consequently, globalization. The changes promoted by such a change in the production process and in the work environment led to new ways of working and exploiting them, which range from “the appropriation of the worker’s creative and intellectual knowledge and its objectification in machines, software and projects, to precariousness working conditions via structural flexibility and unemployment strategies” (GUIMARÃES, 2016, p. 41-43, our translation). It can be said that the Third Industrial Revolution comes from a Toyotism system of production, a Japanese model (ANTUNES, 2011, p. 32), having Eiji Toyoda as one of its precursors, whose objective was to eliminate losses and qualitative productivity (MARTINEZ; MALTEZ, 2017, p. 21-59).

According to Antunes (2011, p. 33-34, our translation), while the “Fordism verticalization” promoted, in some cases, the “vertical integration” in factories, Toyotism carried out, as the automakers increased the spaces of productive performance, “horizontalization,” which caused automakers’ production field to decrease, so that the manufacture of basic items was delegated to outsourcing and subcontracting, and the procedures and methods of this model – such as “kanban,” “just in time,” Quality Control Circle, “total quality control, elimination of waste, flexibility, participatory management” – extended to the entire chain of suppliers, then spreading.

For the aforementioned author, compliance with the Toyotism model required the “flexibility of workers” through flexible rights, which made it possible to use the workforce based on the “needs of the consumer market,” so that the aforementioned model was sustained by a minimum number of workers, which was increased according to, for example, overtime, temporary workers, or subcontracting. The extension of the Toyotism model to other countries, albeit in an adapted and transformed way, constituted an

unquestionable “acquisition of capital against labor” (ANTUNES, 2011, p. 34, 39, our translation).

Unlike Taylorism, which greatly affected the worker’s physical health, Oliveira (1997, p. 632-633) points out that the new managerial patterns arising from the Japanese model also impacted the worker’s psychosocial health, citing, for example, what has been experienced in Japan, when the stress of workers “under lean management practices” resulted in what has been called *Karoshi*, that is, death from exhaustion, from overwork.

According to Antunes (2013, p. 21), although there was a degradation of work in the era of “Taylorism-Fordism,” in that period the work was contractual and regulated and, despite presenting “a more objectified and reified conformation, more mechanical,” it was, on the other hand, equipped with regulations and rights at least to those with more qualification. This, however, does not extend to Toyotism, responsible for the destruction of social labor rights.

However, it is paramount to emphasize that the model implemented with the Third Industrial Revolution underwent changes in sophistication and integration that led to the advent of the Fourth Industrial Revolution – also designated, according to Feliciano and Pasqualetto (2019, p. 13), as Industry 4.0, revolution related to “artificial intelligence,” “Internet of things” and “full automation of production lines” – with the turn of the last century as a time frame, which has been changing society and the global economy as a result of a digital revolution. With the digital age, according to Schwab (2016, p. 19-21), “digital businesses” generate more wealth with a very small number of workers, which, in certain cases, can reach a negligible or non-existent cost for maintenance and development of its activities. Furthermore, this “informational revolution” created what Supiot (2017) calls a connected worker, who needs to carry out the established targets, responding promptly to the signals received by him.

As Leme points out, the creation of the “Internet of things” enabled the “networked interconnection of household objects and items”. Thus, according to the author, the control previously exercised by the “production conveyor belt supervised by a hierarchical superior” in “cognitive capitalism,” is now performed by a “software algorithm,” so that whoever is at the “production conveyor belt,” in this new form, is the worker. This new work methodology is inserted in what she calls computer neo-Fordism or neo-Taylorism, in which the individual has become an “programming object, just a number, shifting from the working human being” (LEME, 2019,

p. 71-72, our translation), a perception that meets the constant element in the work of Prassl (2018), entitled “Humans as a service: the promises and perils of work in the gig economy”.

These historical episodes related to the prelude to automation in production processes brought about, albeit in a different way and intensity, gradual changes both in the context of production and in the relationships existing in such environments, leading to the concern that workers would have to be protected in the face of automation, according to the automation in Brazil, discussed below.

2 CONSECRATING WORKER PROTECTION IN FACE OF AUTOMATION, WORKING DAY AND SAFEGUARD OF THE BALANCED WORK ENVIRONMENT AS FUNDAMENTAL RIGHTS IN THE BRAZILIAN SCENARIO: A NECESSARY RELATIONSHIP

According to Antunes (2006, p. 16-18), in Brazil capitalism had a hyper-late development, which only took off from the twentieth century. This is because Brazilian industrialization only advanced as from 1930, and the productive restructuring of capital only occurred in the mid-1990s, with the introduction of numerous forms arising from the flexible accumulation and the Japanese model, causing what the author called “organizational lyophilization”.

Therefore, it can be sustained that the Brazilian constitutional texts prior to 1988 did not register the concern about the effects of automation,³ and only with the promulgation of the Constitution of the Federative Republic of Brazil in force there was, in its article 7, XXVII, concern about providing for the protection to the worker on account of automation as a fundamental right; however, it was established that the protection will take place “as established by law” (BRASIL, 1988) not yet approved, in spite of more than three decades after its promulgation.

Thus, even though the Brazilian Constitution places the aforementioned right in the list of fundamental rights – which are, based on article 5, § 1 of CRFB/1988, endowed with immediate applicability, however showing gradations in their intensity (SARLET, 2001, p. 29-30) –, it is clear that the satisfactory implementation of the expected effects of the highlighted constitutional rule depends on ordinary regulation.

³ In this study, the simplification of Martinez and Maltez regarding the term automation is adopted to encompass automatization (MARTINEZ; MALTEZ, 2017, p. 21-59).

Regarding the repercussion of worker protection before automation, two arguments stand out. One of them is that automation has caused structural unemployment, which has been aggravated throughout history in all the forms installed by the Industrial Revolutions. The other is that it has been found that the introduction and development of new forms of automation in industrial relations have generated, in some cases, precarization of work, leading to the impact on the work environment and, consequently, on the workers' health and safety.

As Martinez and Maltez (2017, p. 21-59) rightly address, automation can, in certain situations, be used to enable a balanced work environment and, consequently, lead to the protection of basic worker rights, linked to it. However, this is not the scenario that is most present, since unpreparedness of the State and the business community is observed, for example, when the subject refers to the work relations marked by automation. As Pinto asserts (2013, p. 181), organizational and technological innovations generate disbelief regarding improvements in the work environment, since flexibility, especially in the workday, is carried out through precarious employment contracts and outsourcing; there is creation of types of autonomy and leadership that lead to egocentricity; team work gives way to self-exploitation; profit sharing is preceded by psychological and physical hostilities; gratification compensates for moral harassment, making human creativity to retrograde to a simple form of survival instead of being freed.

Oliveira (1997, p. 626, our translation) argues that technological and organizational innovations implemented in Brazil, based on the Japanese management model – improved due to the advent of Revolution 4.0 –, reflect “Total Quality Programs” that carry in their formulation changes in the qualification of those who work, also requiring an increase in their intervention in the production processes, changes that “presuppose workers’ greater participation and involvement, requiring their own identification with the company’s objectives”. Such occurrences, added to the fact that modernity is accompanied by a pressure for quality and fast pace, has a major impact on workers’ health.

The need for observance and consideration of the aspect explained is essential, since the duty of labor-environmental balance also stems from a constitutional provision, because when the Brazilian Constitution establishes that everyone has the right to a balanced environment, it is alluding to the integrality of its aspects, that is, also that of work place, where the human being usually spends most of his/her productive life (PADILHA, 2015, p. 105). This allegation finds support in its article 225,

head provision, which addresses the environment in general, combined with article 200, VIII, which, when disposing about the duty of the Unified Health System to collaborate to safeguarding the environment, states that it includes work.

Furthermore, it is imperative to say that, although it is not expressed in the list of “Fundamental Rights and Guarantees” in Title II of CRFB/1988, the balanced working environment is part of the fundamental rights class, thanks to the material opening of the constitutional catalog. The balanced working environment is supported by article 5, § 2 of the Constitution, which allows sustaining “the open and inclusive nature of the constitutional catalog of rights” and realize that the said opening encompasses “both rights expressly enshrined in other parts of the CF [...] and rights deducted from the constitutional system” (SARLET; GOLDSCHMID, 2015, p. 26-27, our translation).

In this way, the balanced work environment is seen as a fundamental right as it is indispensable for a healthy quality of life, as expressed in article 225, head provision, of CRFB/1988, which is directly related to the right to health, especially the worker’s health, provided for in article 6 of the Constitution.

In addition, articles 6, 7, XXII, and 200, VIII of the Constitution, together, make it indisputable that the healthy working environment is the worker’s fundamental right.

Bearing in mind that the safeguard of the working environment, the environmental labor law, is a consequence, in part, of the encounter and the relationship of issues shared between the branches of labor law and environmental law (PADILHA, 2015, p. 106- 107), it should be noted that, in addition to health, the human person aspires for quality of life at work, and, for this, the balance of that space that is deeply linked to the protection to the dignity of the person working is crucial.

What was previously presented is in line with what is explained by Ney Maranhão (2016, p. 83-84), for whom the work environment has at least three essential elements, namely: the environment (a phenomenal scenario before which one performs some work), man (central figure of the relationship that will be addressed below), and technique (formula established to achieve an intended end). This triad, according to the author, is easily associated with factors of production related to items indispensable to the production of goods and the generation of services, that is, land (corresponding to the environment), capital (referring to the technique), and work (related to the man, as a worker).

The aforementioned author (MARANHÃO, 2016, p. 84-85, our translation) emphasizes that man is the central figure of the “relational structure of production,” since, although any scenario can become the locus of execution of a work activity, only when the human being is present, as a worker, these spaces really become a working environment, that is, “only the conjunction of environmental and technical elements with human labor action is able to give rise to the work environment”.

Thus, as highlighted by Alvarenga (2017, p. 68, our translation), the work space “as a space for building well-being and dignifying working conditions, considers man the first value to be preserved before the means of production”.

Therefore, the balanced work environment is a fundamental right, since it depends on the enjoyment of other fundamental rights, such as the right to life, health, safety, the human person’s dignity and the personality rights of the man who works. Thus, without a work environment that provides the worker with them, it can be said that there is an emptying of the “notion of labor-environmental balance” (COSTA; ALMEIDA, 2017, p. 61-62, our translation).

Benjamin (2012, p. 130, our translation) presents the right to a balanced environment as a “reflex-right,” arguing that article 225, head provision, of the Brazilian Constitution, would be the “mother of all environmental rights” of the Constitution, mentioning, for example, the safeguard of the worker’s health, which refers to the work environment. This is because, for the author, the foundations of the aforementioned constitutional provision “are not isolated,” since “they are linked, in an umbilical way, to the very protection to life and health, to the safeguard of the human person’s dignity and to the ecological functionalization of the property”.

In view of the importance of the theme in the context of the new forms of work brought by Industry 4.0, the intrinsic relationship between the themes of the healthy and safe working environment and the duration of work is highlighted, since, according to Delgado (2017, p. 975, our translation), “greater or lesser spacing of the workday (and weekly and monthly work duration) acts directly on the deterioration or improvement of the company’s internal working conditions,” as it compromises or improves “a strategy for reducing risks and harms inherent to the service provision environment”.

At this point, it is emphasized that the rules related to the duration of work have as main scope to safeguard the workers’ physical integrity,

protecting them from exhaustion, which is, in certain situations, the cause of stress that can cause deterioration to the body, illnesses and even accidents at work (BARROS, 2016, p. 436).

Since the extent of existing contact with certain activities or environments is a decisive issue for characterizing the devastating effects of the respective environments or activities on the working human being, the decrease in the “working day and the weekly duration of work in certain activities or environments constitutes important prophylactic measure in the context of modern occupational medicine,” so that the legal rules related to the duration of work “are no longer – necessarily – strictly economic rules,” since they can assume, in certain situations, “the determining function of occupational health and safety rule, therefore assuming the character of public health standards” (DELGADO, 2017, p. 974, our translation).

In this sense, the Brazilian Constitution establishes, in its article 7, that workers’ rights are “normal working hours not exceeding eight hours per day and forty-four hours per week, with the option of compensating working hours and reducing the length of workday through an agreement or a collective bargaining covenant” (item XIII), as well as the “reduction of employment related risks, by means of health, hygiene and safety rules” (item XXII) – (BRASIL, 1988, our translation). Therefore, considering that the workday has a direct impact on the worker’s safety and health in the workplace, such rights are intrinsically related.

A systemic and updated view is essential when such aspects are evidenced, due to modifications caused by Industry 4.0 in the conception of the work environment and for the correct understanding of protection attributed to work by the constituent legislator when such elements occur. Technological innovations and the computerization process of the execution of work activities, arising from automation, have brought about profound changes in the theme of work, so that its environment is no longer restricted to the company’s internal conditions, since the work environment is transported to external and sometimes distant areas due to the most diverse ways of performing the activities, reflecting both in the duration and intensity of work and in issues relevant to ergonomics.

However, given the concept presented about the balanced work environment and its status as a fundamental right, is it possible to sustain that there is its observance, considering the new morphology of work? Is Brazil prepared to deal with Industry 4.0 without causing the workers’ such fundamental right to deteriorate? With the introduction of new ways of

working, what has been evident in the worker's safety, life and physical and psychological health?

3 WORK ENVIRONMENT BALANCE IN THE CONTEXT OF AUTOMATION

In order to understand the impacts of automation on the worker's fundamental right to a balanced work environment, it is necessary to go through some factual and normative issues related to the advent of Industry 4.0. As already highlighted, Martinez and Maltez (2017, p. 21-59, our translation) argue that automation is a "multifaceted phenomenon," presenting both positive – such as making it possible to protect workers from performing tasks that are harmful to their health and safety – and negative aspects, such as structural unemployment.

As Oliveira (1997, p. 626, our translation) rightly points out, "the introduction of new technologies represents a significant increase in productivity at work, with the supposed elimination of painful or heavy tasks, leading to a new man/machine relationship". In fact, Industry 4.0 leads to the creation of what Antunes (2006, p. 25, our translation) calls the "new proletariat," that of the "cyber era," composed of workers looking for an increasingly *virtual type* of work in a deeply *real world*" which has been called "cybertariat" by Huws (2003).

It is based on the perception of this complexity that Schwab (2016) does not treat automation – with an emphasis on that related to the Fourth Industrial Revolution – neither as something negative nor as something positive, but rather mentions the paths that can be taken and the probable results, even addressing the unfavorable aspects related to the fact that the new forms of work, such as the "human cloud platform," open space for the non-recognition of the employment bond and, consequently, for the non-incidence of labor rules, leading to the precarization of work, translated into harmful impacts on the work environment and, therefore, on the workers' health and safety.

From this point of view, there would be not only structural unemployment, but also the transformation of relationships, in which the workers would no longer be apparently involved in an employment relationship, and the protection present in the labor legal system would not be applicable to them, thereby affecting the safeguard of their social and environmental rights, that is, a domino effect, enabling the occurrence of what Antunes

(2020, p. 11, our translation) calls “digital slavery”.

Therefore, under the allegation that the employment relationship does not exist – in some cases, it actually exists –, there would be absence of the obligation regarding some questions aimed at protecting the worker’s rights to a balanced work environment, health, safety and life, such as the limitation of working hours, just to cite an example, so that the transfer of the burden of economic activity developed by the business sector to the one who works would occur, increasing the profit margin of the first and causing the latter’s abandonment.

What is certain is that the Fourth Industrial Revolution established what Antunes (2013, p. 21, our translation) calls “a new era of structural precarious work,” marked, for example, by the corrosion of regulated and contracted work, prevailing in the twentieth century, which was replaced by new types of informal work, such as “atypical, precarious and ‘voluntary’” work, leading to the loss of workers’ rights; constitution of cooperatives misrepresented, that is, whose scope is to aggravate even more the disrespect to workers’ rights through the reduction of the remuneration and the intensification of the exploitation of the latter’s workforce, and false entrepreneurship, which, indeed, covers the salaried work, allowing innumerable ways of making working hours, salary, function or organization more flexible.

In addition, there are cases in which the employment relationship is present, but there is not enough and/or adequate ordinary regulation to address its peculiarities, greatly impacting worker’s basic rights, as it happens in certain cases of teleworking, for instance. This is due to the fact that there is no clear and efficient regulation about the control and mode of the execution of services through teleworking, which makes it impossible, in a certain point, to guarantee the fundamental right to a balanced work environment, which is, partially or totally, depending on the situation, transferred to outside the company’s premises, however, not releasing the employer from that duty.

For Druck (2013), in the current scenario, one of the effects of precarization of working conditions for those who are still considered employees is the intensification of work, resulting from the extension of the working hours at the work place and at the worker’s home – in which there is no limit –; use of “versatility”; performance of extra hours and activities without due remuneration; computerization – which increases productivity, requiring workers to behave following the machines pace –; agglomeration

of tasks and occupations given the reduction in manpower in companies; unattainable goals, or even “workaholics,” that is, compulsive workers. The author also stresses that in addition to the work intensification, new forms of violation of the work environment are added, such as moral harassment – which even leads to the onset of mental illness –, dismissal resulting from an accident at work, or occupational disease.

Still regarding this context, complementary forms of precarization can be added, presented by Druck (2013, p. 61-62, our translation), which are intrinsically related to the labor-environmental imbalance in the automation era, which are: weakening of requirements of safety at work; “dilution of responsibilities between stable and unstable”; the deconstruction of the process of “individual and collective identity,” when the worker’s objectification is done, through a method of being “disposable,” of insecure, devalued and precarious bonds; weakening of the representation and organization of the unions, reflecting negatively on the “worker policy,” which has already been aggravated by the impacts of outsourcing.

The finding that countless ways of precarization of work are accentuated and improved by the emergence of Industry 4.0 leads to the question of how this issue has been faced by the Brazilian Legislative and Judicial Powers, since this understanding is indispensable to verify how concrete the fundamental right to a balanced working environment is, thus requiring that it be presented by mentioning the new devices introduced by the sophisticated Fourth Industrial Revolution.

To this end, one retakes the idea of Schwab (SCHWAB, 2016, p. 56-57, our translation) with regard to the human cloud platforms that are increasingly used by employers or entrepreneurs. In a synthetic explanation, the platform would divide professional activities into different projects and assignments that would be “launched in a virtual cloud of potential workers, located anywhere in the world,” featuring an “economy on demand,” in which the workers – designated service providers, as they do not have an employment relationship – perform specific tasks. The author also stresses that the benefits of the “digital economy” for companies are evident, since human cloud platforms see the workers as self-employed workers, and they are, commonly and currently, released from the duty to bear fundamental rights, such as health and safety conditions at work, and, consequently, to observe labor standards.

Part of the doctrine and the Judiciary argue that, if not all, many of the services offered through digital (or technological) platforms would not

incur the characterization of an employment relationship, but only a consumer relationship, marked by the intermediation of technology, in which a service would be offered with a few clicks by the worker, and, with a few more clicks by the consumer, he/she would acquire it.

In Brazil, among the various existing applications, there is the one belonging to the Uber company, a North American multinational, which claims to apply the idea of “network disruptive economy,” based on the allegation of making an application available to drivers who, through its use, provide “private transportation service to passengers,” as well as “shared economy,” which supports the explanation by the company that it “does not provide any service to its users,” considering that it only offers a technological tool for those who connect with each other, according to their claims, that is, a person to person relationship (TEODORO; D’AFONSECA; ANTONIETA, 2017).

However, according to Teodoro, D’Afonseca and Antonieta (2017), the shared economy policy, alleged by Uber, does not match reality, as the company does not maintain itself financially only with the provision of its application, but rather by rides “hired by passenger users,” of which the company retains the “service fee” on the ride value, characterized, according to the authors, not as a disruptive economy, but as a creative destruction and, still, the characterization of what Schumpeter (1997, p. 9-10) called “innovative entrepreneur”.

Also according to Teodoro, D’Afonseca and Antonieta (2017), Uber also does not adopt the idea of “shared economy,” in the form of person to person but rather person to business relationship, since it is not a mere intermediary and charges a percentage calculated on the driver’s work and stipulates practices to be adopted by the driver, such as quality control, punishing those who do not observe the policy established by the company. Based on the reasons presented, the authors conclude that the existence of an employment relationship between Uber and application drivers should be recognized, which requires compliance with labor standards and, therefore, the right to a balanced work environment; besides it is necessary, for example, control of working hours in order to allow rest to the worker, who will drive with greater attention, enabling a safe environment both for him/her and for passengers and other people who travel on the road.

One of the interesting facts related to worker safety, as an application driver, is that Uber sets a number of denials for calls by the application that, if exceeded, results in punishment – as a temporary suspension and,

depending on the situation, driver deactivation. Teodoro, D'Afonseca and Antonieta (2017) point out that many drivers report that they refuse to travel in “areas of social risk” because they are concerned about their personal safety, a fact that is not considered by Uber, as Uber does not even make it possible ample defense to the driver, that is, the punishment arises from unilateral action. This entire context, sometimes marked by intense subordination and control, greatly impairs healthy and safe working conditions, impacting physical and mental health (due to the various disorders that can affect the worker), as well as in his/her life, which may be at risk due to both accidents and crimes suffered by the driver, or even the development of psychological disorders.

The fact is that the work, faced with the new organizations arising from the use of digital platforms, does not find in Brazilian ordinary legal system specific protection to the relations marked, in certain cases, by ‘parasubordination,’ which enables decreasing the employer’s duty to guarantee the labor-environment balance, which, in certain situations, is totally transferred to the so commonly called self-employed worker.

For Kimmelmeier (2019, p. 101, our translation), although there is a state omission regarding the existence of rules aimed at health and safety of workers who work through on demand platforms, one should consider that they have an obligation to safeguard the workers’ such rights, regardless of the employment relationship type. To this end, the author finds support in article 8 of the Consolidation of Labor Laws (CLT), addressing the “application of supplementary means of integrating the right, such as analogy,” sustaining that in similar situations, in which corporations have control over the work environment, they are responsible for protecting workers’ health and safety, even if they are not legally classified as employers. Analogy that would occur, for example, based on articles 5-A, § 3, of Law no. 6,019/1974, and 8, of Convention 167 of the International Labor Organization (ILO).

Although with different reasons, Feliciano and Pasqualetto (2019, p. 18, our translation) argue that “the guidelines of Labor Law” have to adapt to the requirements arising from the new forms of contracting promoted by Industry 4.0, in order to identify the rights present in article 7 of the Constitution applicable to digital platform workers, and regardless of the employment relationship recognition, the rights to reduce risks inherent to work, to disconnect from work and to non-discrimination at work must certainly be guaranteed to those workers, and those rights

that are intrinsically related to the fundamental right to a balanced work environment. For the aforementioned authors, the Judiciary Power has an extremely relevant role in this action, to be exercised through a “new hermeneutic-applicative cleavage,” in order to “re-signify the elements of the employment relationship”.

However, regarding the position of the Brazilian Judiciary on the subject, it is not passive, and it should also be noted that the investigation mentioned above has not been commonly carried out by the Power in question.

The Second Section of the Superior Court of Justice, when considering Conflict of Jurisdiction no. 164,544 – MG, on August 28, 2019, ruled that there was no employment relationship between Uber and the application driver, based on the argument that technological tools enable a shared economy, so that workers are individual entrepreneurs.

In the area of Labor Justice, the matter is also controversial, because although the judgment of the 33rd Labor Court of the Regional Labor Court of the Third Region has recognized, in a decision made in 2017 in case no. 0011359-34.2016.5.03.0112, the employment relationship between Uber and application driver and ordered the company to pay the worker the amount corresponding to, for example, the extra pay for working night work and overtime, which was altered by a judgment issued by the Ninth Panel of the aforementioned Court, and the Rapporteur declared that there was no employment relationship between the mentioned parties, especially because she considered that the assumptions of article 3 of CLT were not present. Still on this point, it is repeated that this instability, marked by the unilateral nature of the company, can have an excessive impact on the worker’s psychic health, especially in a culture of excellence (SELIGMANN-SILVA, 2013, p. 218), in which the employee must “satisfy growing productivity and quality indexes” (PINTO, 2013, p. 172, our translation).

However, as Pilegis (2019, p. 115, our translation) points out, the annihilation of subjectivity, through the insertion of a model of “precarious pseudo-freedom,” results from an “image manipulation” that leads to the voluntary servitude of these drivers, aligned with the goals of the company that presents itself as a mere intermediary, the digital platform. And it is based on this concept that the elements that characterize the employment relationship, such as subordination, take on new features.

For Leme (2019, p. 72, 74, our translation), subordination in the digital age is found in the “programming” that, through statistical indicators,

imposes and assesses whether rules were followed and the established goals were achieved, which, for the writer, transposes us from the “society of discipline to the society of control,” installing the “society of fatigue,” in which, through new and artful forms, the final scope is the same as all the forms inaugurated by capitalism, that is, to exercise power over the one who works.

According to Han (2015, p. 69-78), the society of tiredness and too much exhaustion stems from a society of excess performance and active society, marked by the overcoming of positivity that all goals are attainable. It is not without reason that this conception is accentuated and accelerated by the impact that the digital age has had on the world of work, marked by the false idea of flexibility – freedom – and by deregulation, which are transmuted into real precarization of work.

In view of the problem posed, and in an attempt to reduce it, Bill no. 5069/2019 was presented, to include Section IV-B, in Title III, Chapter I, in the Consolidation of Labor Laws, to provide for the employment relationship between companies and employees who develop activities through the “land transportation application platform”. Among the proposed modifications, the following stand out: (1) the equation of “companies operating the land transportation application platform” with the status of employer for the exclusive purposes of the employment relationship (article 235-I); (2) consideration of an employee, for the purposes of article 3 of the CLT, of the professional who exercises “driver activity, in a personal, costly, habitual and subordinate manner,” by means of “companies operating the land transportation application platform, except for those who exercise it in an eventual way” (article 235-J); (3) the application, with respect to the daily working hours, of the provisions of article 235-C, §§ 5, 6 and 13 (article 235-L).

Although the intention may be noble, it is clear that some problems persist, as the form of job characterization is marked by a traditional interpretation, when new organizations give new features to the essential elements for the characterization of that bond, as it is realized from coping with the issue in other countries.⁴

In the United States, the California Supreme Court issued a decision on April 30, 2018, which became known as “Dynamex,” setting a formula for verifying whether application drivers qualify as self-employed or

4 Supiot (2017) argues that in “the United States and the United Kingdom, several jurisdictions reclassified Uber drivers’ contracts as a salaried employment contract,” since the argument that digital platforms lead to “resurgence of independent work is denied by the facts”.

employed. Such a test is called “ABC,” and the worker will only be considered self-employed if the contracting entity establishes that the worker: (a) will be (and is) free from the control and direction of the hiring entity in connection with the performance of the work, both under the contract and in fact; (b) will perform “work outside the normal course of business of the hiring entity”; and (c) will be customarily engaged in a “independently established trade, occupation or business of the same nature of the work performed”.

It is emphasized that, in order to codify the decision of the California Supreme Court, Bill no. AB 5, which promoted changes, for example, in the Labor Code, in order to ensure that cases that do not pass the “ABC Test” – noting that the legislative change also includes exceptions – are marked by the employment relationship, and the employee must have all his/her rights assured by the company.

In fact, the California court decision and legislative change demonstrate the recognition that employment relationships are taking on new forms, and the advancement of technology has certainly been a factor of great impact on breaking with traditional forms, which requires that new ways of working are recognized so that the hiring entity not to relieve itself of the responsibility of guaranteeing a healthy and safe working environment for the worker.

Returning to the Brazilian scenario, the problem also persists even in some situations in which there is recognition of an employment relationship, such as, that is to say, that of teleworking, since the working environment is, totally or partially, external to employer’s premises.

With the advent of Law no. 13,467, of 2017, which included item III in article 62 of the CLT, the teleworking modality became an exception to the work duration regime provided for in Chapter II of the CLT, so that the teleworker would not, in an isolated interpretation, have the right to receive overtime. It happens that the safeguard of worker’s fundamental rights is disregarded in the face of conflicting wording of ordinary legislation. This because, although in its article 62, III, it makes the aforementioned exclusion, article 6, sole paragraph, also from the CLT, establishes that there is no differentiation between the work carried out in the “employer’s establishment,” that carried out in the “employee’s home” and that performed at a distance, provided that “the assumptions of the employment relationship are characterized,” and that “the telematics and computerized means of command, control and supervision are equivalent, for the purposes of legal

subordination, to the personal and direct means of command, control and supervision of work”.

According to Melo (2017, p. 74), the wording of article 62, III of the CLT is in disagreement with the “current technological reality,” since the exorbitance of connectivity in labor relations is intrinsically related to the amount of work to be performed per day. Furthermore, for the author, the technology associated with the execution of jobs, while enabling a more flexible work routine, also makes it possible to inspect the duration of daily work, so that the rule in question would not correspond to the factual social reality and, consequently, would conflict with fundamental rights, such as a balanced work environment, rest, and leisure.

Regarding issues related to “responsibility for the acquisition, maintenance or supply of technological equipment and the necessary and adequate infrastructure for the provision of remote work, as well as the reimbursement of expenses” paid by the employee, article 75-D of CLT provides that these will be agreed in a written contract, suggesting equality between the parties and opening space for the employing entity to transfer part of the burden of the economic activity explored by it to the worker.

Another point to be mentioned stems from the wording of article 75-E of the CLT, which deals with the employer’s duty to “instruct employees, in an express and ostensible manner, as to the precautions to be taken in order to avoid illnesses and accidents at work,” given that there is discussion about to what extent this instruction and the signature by the employee of a term of responsibility, in which he/she is obliged to observe it, relieves the employer of duties related to the rules of occupational medicine and safety at work.

On the issue raised, it is emphasized that article 75-E has to be interpreted in conjunction with article 157, I and II, both from CLT, which provides that it is the company’s duty to “comply with and enforce safety and occupational medicine standards,” as well as “instructing employees” by means of “service orders, regarding care to take in order to avoid accidents at work or occupational diseases”.

In view of the difficulties posed, it is mentioned that Bill 3512/2020, which aims to revoke item III of article 62, amend article 75-D and add article 75-F to CLT to “detail the employer’s obligations in teleworking performance”. From its justification, there is a concern about maintaining the legislative change promoted by Law 13.467/2017 (Labor Reform), relevant to the type of work highlighted, based on the argument that this

would be insufficient to “avoid abuse by the employer”.

This since the proponent considered that article 75-D of the CLT must establish the employer’s duty to provide the labor infrastructure “necessary for the exercise of activities, taking into account the employee’s health and safety,” as well as the provision for reimbursement of the latter for the expenses arising from the activities performed. In the same way, the imperiousness of the control of working hours was mentioned – in view of the fact that many workers are working longer hours than those agreed –, of repealing article 62, III, of the CLT and, also, there should be a provision on the remuneration of overtime paid in this form of work.

Still regarding the bill in question, it is evident from its reasons that its indispensability is based on the fact that, with the advent of the scenario installed by Covid-19, the adoption of teleworking has grown considerably, and there are studies that indicate that this form of work will last even after the pandemic context experienced.

It may be added that one of the concerns is linked to the right to disconnect, that is, how to ensure in this new working environment, in which professional life occurs side by side with personnel life, the setting and observance of rules that enable the safeguard of the rights to leisure and rest, especially in a society marked by the digital age, in which information and communication technologies, such as WhatsApp, enable the receipt of information in real time and sometimes establish a working relationship marked by full time availability, with increasingly higher goals.

The examples brought to light show that the Brazilian scenario does not enable, at least not entirely, that workers be guaranteed their fundamental rights to protection in the face of automation from Industry 4.0, and, therefore, to the balanced work environment, to health, safety, and life. This because the new forms of work do not find – sometimes, due to an isolated and limiting interpretation – satisfactory protection in the current labor legal system, leaving the worker at the mercy of his/her luck, in search of mere conditions to survive in a context of intense and constant precarization accentuated by technology.

CONCLUSION

The failure of the Brazilian Labor Reform, promoted in 2017 – which had as main discourse the reduction of labor rights and the increase in the number of jobs – and the economic situation installed in the country, have

brought about the intensification of precarization in the labor relations, which is sometimes aggravated by the use of automation, especially that related to Industry 4.0.

This is due to the fact that deregulation, flexibility and the introduction of new technologies – which give rise to innovative forms of work, not expressly provided for and /or properly regulated in ordinary legislation – in the execution of labor activities have led to the intensification of the most diverse forms of exploitation of the worker, both through new mechanisms, such as applications that intend, in certain cases, to hide employment links, or even make access to other fundamental rights of the employee unfeasible, as well as due to the lack of regulation or even due to their insufficiency, as occurs with teleworking.

All of this generate a degradation of the labor-environmental balance, which is the main cause of accidents at work and occupational diseases, and therefore of violation of fundamental rights of the worker.

Finally, it should be noted that the brief research carried out on the positioning of foreign judiciary and legislature points out the urgency that Brazilian jurisprudence and legislation assimilate the role that Industry 4.0 can play in the precarization of the healthy and safe work environment – and, consequently, in the rights of the worker correlated to that one – and, with that, improve their bases so that automation is converted into real benefits to the one who works in order to observe the constitutional guidelines.

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