

# Artificial Intelligence and Human Flourishing

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ABSTRACT. The polarization of the debate about artificial intelligence (AI) pulls in two mutually exclusive directions of either complete takeover of future jobs by omnipotent algorithms or an absolute bliss with robots at work while humans reap the benefits of endless vacation. Add this to conflicting views of work as either a disutility to be minimized or as an essential component in human flourishing, and it is no wonder a wide range of views are expressed on AI and human flourishing. The literature, from Smith to Keynes and beyond, offers some initial methodological guidance. Still, the true social and economic implications of an AI-type environment in production and labor markets are yet to be fully understood. This article argues that neither of the predictions are realistic. Instead, the global economy may be passing, albeit at a faster speed, through a phase of technological change, similar to those experienced before. While a nuanced balance is emerging, with an emphasis on human skills in future employment, the benefits may not be equitably distributed, as equality of opportunities for human development may not be reachable, though visible, in the AI-driven society. Hence, as firms seek efficiency gains, much weight is shifted onto governments and quasi-private entities in maintaining decent living standards conducive to human flourishing in unprecedented times of the COVID-19 pandemic. The article reviews various popular concerns and advances new public policy measures aimed at tackling some of the immediate fears of automation.

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[J]ust when humanity possesses the scientific and technical capacities to achieve a justly distributed well-being, in accordance with how it was

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delivered by God, we observe instead an exacerbation of conflicts and an increase in inequality.

Pope Francis (2019)

### I. Introduction

The prospects of a world without work has long been a utopian dream. Outside of God providing manna from heaven while the Israelites escape from Egypt (Exodus 16:1-36), the primary way humans have “freed” themselves from having to work is by the forced servitude or enslavement of another group of humans. The promise, we are told, of “artificial intelligence” (AI) is that it can turn all humans into “masters,” with machines being the servants (Danaher 2019). The fear is that, once machines gain “general intelligence,” they will become the masters, and humanity will be enslaved. The reality of AI is most likely somewhere between a world of prosperity without effort and the plot for *The Terminator* or similar movies.

Yet to fully evaluate the implications of AI we must first reflect on the meaning of work and its relation to the human experience. Do we want a world without work? Or is work somehow necessary for human flourishing? Is AI just another technological development, no different from the wheel and other major technological developments in human history? These questions are based on how we understand human nature and what constitutes human flourishing. How we understand these issues will shape how we will investigate the economic and social implications of AI.

In the next section, this article will look at the relationship between work and human flourishing, contrasting the methodological perspectives of neoclassical economic theory and Catholic social thought. We are not contrasting two competing economic theories, but instead two “visions” of human nature and society upon which economic theories can be constructed. In the third section, we will briefly examine some examples of economists looking at earlier major technological changes. We will show that taking a broader view of human nature and society—as Catholic social thought does—raises

issues economists typically ignore, issues that are fundamental to the concerns raised by technological unemployment and AI. Section IV examines the contemporary context of measuring AI impact on the economy and labor markets. Section V explores one of the most critical aspects of AI's recent march, namely, the problem of deepening social and economic inequalities. Section VI discusses the polarity of outcomes as we assess the key implications of AI on workers, the economy, public policy, and human flourishing, as well as unprecedented challenges raised by the COVID-19 pandemic. Section VII concludes the article.

## **II. Human Nature and Work**

Artificial intelligence is not the beginning of this story. In the early 1800s, the “machinery question” was one of the central political issues, one that has shaped the history of economics in profound ways (Berg 1980). The replacing of skilled workers with machines and with unskilled women and children created not only great economic disruption but also considerable political unrest, most famously with the Luddite Riots of 1813–1817. Destroying machines was made a capital offense. Most economists at the time felt that the new technology would not cause a negative impact on employment, but there were notable exceptions: Sismonde, Say, and Malthus all saw possible negative effects, and David Ricardo famously pronounced that the working class could be harmed by the introduction of machines. Yet all (except Sismonde) thought that the compensating gains of the new technology, in terms of cheaper goods and England's competitive advantages, outweighed any negative effects.

In 1803, Jean-Baptiste Say ([1834] 2017: 52) raised what is one of the central concerns of AI today, the possibility that machines could entirely replace workers:

It may be allowable to add, that viewing human labor and machinery in the aggregate, in the supposition of the extreme case, viz. that machinery should be brought to supersede human labor altogether, yet the numbers of mankind would not be thinned; for the sum total of products would be the same, and there would probably be less suffering to the poorer

and laboring classes to be apprehended; for in that case the momentary fluctuations, that distress the different branches of industry, would principally affect machinery, which, and not human labour, would be paralyzed; and machinery cannot die of hunger; it can only cease to yield profits to its employers, who are generally farther removed from want than mere laborers.

This passage is interesting on many levels, not the least of which is the assumption that the demand for goods is independent of the level of employment.<sup>1</sup> Say notes that specific workers can be displaced by machines, yet in the above passage he is arguing that even if all workers were replaced, there would still be a net benefit for workers as a class, the benefit being that the negative effects of an economic downturn will be felt completely by the machines (or the owners of the machines) and not by newly unemployed workers.

In Say's comments, we see the seeds of much of the economic analysis of the effects of technological change on workers. First, there is the failure to see the effects of increased automation on aggregate demand. Say notes "that the laboring class is of all others the most interested in promoting the economy of human labor; for that is the class which benefits the most by the general cheapness and suffers most from the general dearness of commodities" (Say [1834] 2017: 53, fn. 74). Yet, as any automobile worker would tell you, "robots don't buy cars." How will the income generated by machine production be distributed so that former workers can purchase what the machines are producing? What will replace wages? Second, assuming you solve the first problem and the level of workers' consumption is maintained, the benefit of work can be more than just earning income to support consumption. Work has long been one of the major activities of humans, taking up much of their time. What would they do without a job?

Say's recognition that the introduction of machines might be harmful to workers as a class prompted a severe reaction by some of the leading figures in political economy in the early 19<sup>th</sup> century, both because it suggested that market outcomes were not always benevolent (lack of harmony of interests between workers and capitalists) and

because the remedy called for government intervention. One could argue that defending “laissez-faire” economic policies was the *raison d’être* of classical political economy. The leading economist of the time, David Ricardo ([1821] 1951: 388), rejected Say’s conclusions on machinery, yet dramatically reversed himself in the third edition of his *Principles of Political Economy and Taxation*, writing: “I am convinced, that the substitution of machinery for human labor, is often very injurious to the interests of the class of laborers.”

The debate on “the machinery question” was mostly on whether machines displaced workers in the aggregate and if the other benefits of the new technology (lower prices, improved products, new employment in the machinery building industries) would outweigh (compensate) the potential loss of employment in some sectors. These were important issues, then and now. But they are not the only issues that should be considered. The singular focus on employment and prices and the exclusion of issues such as human agency or the social and cultural benefits of work is due to the narrow view of human nature adopted by most economists.

Most economic theory is built upon a view of human nature called *homo economicus* (the rational economic person). This view assumes that the primary or only motivation to guide human actions is self-interest, with the “invisible hand” (competition) acting to regulate or guide individual self-interested actions towards what is best for society. Furthermore, what is best for society is defined as maximum output and consumption, with gross domestic product—GDP—as the measure of output. In its pure form, which neoclassical economics adopts, this leads to a mechanistic view of society where the social order is really the balance or equilibrium of individual atoms, all generated by a “spontaneous order.”

Some economists, most notably Adam Smith, John Stuart Mill, and Karl Marx, tried to ground their analysis in history, and thus allowed for a wider array of human motivations. However, the vast majority have adopted the very narrow view of human nature. Neoclassical economic theory has no room for historical and social context (Clark 1992). William Stanley Jevon’s (1890: 290) reaction to John Stuart Mill’s claim that human nature was “extraordinarily pliable” might sound

extreme, but it is in keeping with core preconceptions of neoclassical economics: “Human nature is one of the last things which can be called ‘pliable.’ Granite rocks can be more easily molded than the poor savages that hide among them.” The clearest expression of this view of human nature is given by Francis Edgeworth ([1881] 1967: 16): “The first principle of Economics is that every agent is actuated only by self-interest.”

*Neoclassical Economics and Labor*

The analysis of labor in neoclassical economics is, for all practical purposes, no different from its analysis of soybeans or any other commodity that is exchanged in markets. Starting with *homo economicus* and its mechanistic view of society, labor is understood as a commodity in which the market forces of supply and demand interact so as to “clear the labor market” by achieving zero involuntary unemployment.<sup>2</sup> That labor should be treated just like any other commodity is stated by the most important of all neoclassical economists, Léon Walras ([1874–1877] 1954: 216):

Persons, like land, are *natural* capital .... [I]n the pure theory of economics at any rate, it is perfectly proper to abstract completely from considerations of justice and practical expediency, and to regard personal capital [workers], like land and capital proper, exclusively from the point of view of value in exchange.

The supply of labor is based on the utility maximization model. Individuals have preferences: they like income and leisure (from which they can obtain utility) and they dislike work (a disutility).<sup>3</sup> The decision to work is based on a labor/leisure trade-off, where the worker chooses to work a number of hours so that the disutility of the last hour worked is equal to the utility (income) gained from that hour of work. It is an individual decision based solely on the preferences of the individual worker and the price signal he or she reacts to, in this case the wage rate. The demand for labor is similarly a balance of utilities, except this time it is those of the employer that come into consideration. The employer will continue to offer work to workers as

long as the utility of that work to the employer (the value created by the worker for the employer) is greater than the disutility of employing the worker for an additional hour (the wage paid to the worker).

Market forces determine both the wage rate and the level of employment, and both are the result of all the preferences and decisions of the multitude of individuals that make up both sides of the labor market. Yet what if work is not a disutility, but something that is valued by the worker? Workers' identity and their development is greatly shaped by what their job is. If one adopts a different view of human nature, the analysis changes greatly, especially if we allow for the possibility, in fact the likelihood, that humans are inherently social animals and that they need to be understood as such, and not treated as isolated individuals. More than anything else, what Catholic social thought brings to understanding human economic actions is its broader view of human nature.

#### *Catholic Social Thought on Work*

Catholic social thought is not a competing economic theory and it does not offer an alternative economic model or system.<sup>4</sup> What it does offer is a different vision of human nature and society. This vision is based on the dual claims that all persons have inherent human dignity and on the primacy of the common good. John Paul II (1999) gave one of the clearest statements of this:

The dignity of the human person is a transcendent value, always recognized as such by those who sincerely search for the truth. Indeed, the whole of human history should be interpreted in the light of this certainty. Every person, created in the image and likeness of God (cf. Gen 1:26–28), is therefore radically oriented towards the Creator, and is constantly in relationship with those possessed of the same dignity. To promote the good of the individual is thus to serve the common good, which is the point where rights and duties converge and reinforce one another.

This view of human nature emphasizes that humans have reason, a free will, and a necessary social nature: humans need to be in community (communion) in order to promote human flourishing, that is, to grow and develop. "From the first moment of life we are

social beings who can only be human in communion with others. To be human means to be-in-relation, to be-with” (Sachs 1991: 19). All human actions are necessarily moral actions as they always involve our relationship with other persons and with God. Catholic social thought (especially the writings of John Paul II) rejects individualistic ideologies that argue that humans only follow their own self-interest or that they should only follow their self-interest (selfishness as a moral philosophy).

The plight of workers and the poor has long been a central theme in the Judeo-Christian ethical tradition, much of it centering on the idea of a “just wage” (Clark 2013a). The dislocation of the working class caused by the Industrial Revolution led to the rise of social Catholic movements (Mich 1998). Pope Leo XIII (1891) was eventually prompted to issue the encyclical *Rerum Novarum* (On the Rights and Duties of Capital and Labor), which starts the official Catholic social thought (CST) tradition. CST has always rejected the contention that market wages are necessarily a just valuation of workers’ contribution (Clark 2013b). The CST tradition goes beyond whether workers are being exploited or whether wages are sufficient to provide a dignified living. Instead, CST highlights the deeper issues of the meaning of work in human flourishing. This deeper understanding of work is most fully developed in John Paul II’s 1981 encyclical *Laborem Exercens* (On Human Work), where he develops a theology of work based on the inherent dignity of each person and humanity’s being called by God to be “co-creators” in building a world worthy of human dignity. John Paul II (1981: §§2, 4) stated:

Work as a human issue is at the very center of the “social question” to which, for almost a hundred years since the publication of [*Rerum Novarum*] ..., the Church’s teaching and the many undertakings connected with her apostolic mission have been especially directed.

Central to this theology of work is the understanding of work as human activity. The fact that work is carried out by humans and for humans gives it its special significance. Man is called to work. It is part of his nature, a “fundamental dimension of man’s existence on earth.”



This conviction is supported by faith and reason: by “considering the whole heritage of the many sciences devoted to man: anthropology, paleontology, history, sociology, psychology and so on” and by “above all the revealed word of God, and therefore what is a conviction of the intellect is also a conviction of faith” (John Paul II 1981: §4). Thus, to understand work we need to go beyond the narrow “rational economic man” view and look at human persons in their totality. Work is not merely an economic activity, it is a social, political, cultural, and spiritual activity, and any adequate understanding of the role of work in contemporary society (or any past society) must take this into consideration.

By basing value on the dignity of every individual, the Catholic social thought tradition has developed a very different view of labor and the laborer. In both classical and neoclassical traditions, labor is treated as a commodity. In the Catholic tradition, work is seen as part of the human condition, an important way in which the individual can participate in society and contribute to the common good. As John Paul II (1981: §9) writes:

Work is a good thing for man—a good thing for his humanity—because through work man not only transforms nature, adapting it to his own needs, but he also achieves fulfillment as a human being and indeed in a sense becomes “more a human being.”

Catholic social thought can make this claim because it takes a wider perspective on human work.

Work includes not merely paid employment but all forms of social participation and contributions to the common good. Thus, activities that do not promote the common good, such as forms of paid employment that are clearly below the dignity of the individual, such as prostitution, are not considered valid forms of work; beneficial activities, such as raising of children, care for the elderly, and all forms of non-paid activities that meet legitimate human needs, are considered valid work. Work here is redefined beyond the definitions of economics and instead is extended to the realm of social participation, which is both a human right and a social duty, both stemming from the inherent dignity of each person.

*Objective and Subjective Dimensions of Human Work*

John Paul II (1981: §6) makes a distinction between the “objective” and “subjective” dimensions of work. The objective dimension of work considers the outward manifestations of work: how much a worker gets paid, what a worker makes, the conditions in which work is carried out. These are the standard topics in the analysis of work, and they are all important topics. Yet John Paul II (1981: §6) argues that the real importance and value of work comes from its subjective dimension, the worker as the subject and not the object.

There is no doubt that human work has an ethical value of its own, which clearly and directly remains linked to the fact that the one who carries it out is a person, a conscious and free subject. ... Such a concept practically does away with the very basis of the ancient differentiation of people into classes according to the kind of work done. This does not mean that from the objective point of view human work cannot and must not be rated and qualified in any way. It only means that the primary basis of the value of work is man himself, who is its subject. This leads immediately to a very important conclusion of an ethical nature: ... work is “for man” and not man “for work.” Through this conclusion one rightly comes to recognize the pre-eminence of the subjective meaning of work over the objective one.

Here John Paul II (1981: §7) is rejecting the notion that labor can be treated as just another commodity. He opposes evaluating labor, and the economic system in general, exclusively in terms of economic outcomes:

The danger of treating work as a special kind of “merchandise” or as an impersonal “force” needed for production always exists, especially when the whole way of looking at the question of economics is marked by the premises of materialistic economism. ... Man is treated as an instrument of production, whereas he—he alone, independent of the work he does—ought to be treated as the effective subject of work and its true maker and creator.

*Technology as Ally*

The tension between the objective and subjective dimensions of work comes out when we look at the issue of technology. It is necessary

to first point out that CST rejects the determinism that underlies both neoclassical economics and Marxism. Past and present reality cannot be reduced to the working out of predetermined “stages of history” or epochs of technology. Both the creation and use of technology are determined by human choices or, more accurately, the choices of those with power. The acceptance of determinism, either controlled by markets or by technology, causes us to blindly accept everything and remove moral agency. As with most problems in the economy and society, the negative effects of technology often can be traced to inequality in the control and use of it.

In his first encyclical, John Paul II (1979: §15) raises the issue of alienation, tracing it back to this lack of connection and feeling of agency over our material life.

The man of today seems ever to be under threat from what he produces, that is to say from the result of the work of his hands and, even more so, of the work of his intellect and the tendencies of his will. All too soon, and often in an unforeseeable way, what this manifold activity of man yields is not only subjected to “alienation,” in the sense that it is simply taken away from the person who produces it, but rather it turns against man himself.

The most extreme example of technology harming humans is the proliferation of nuclear weapons and the threat of climate change, both products of human activity that now threaten the survivability of the planet. For John Paul II (1979: §15), the central cause of this alienation is the removal of human dignity as the central value guiding human activity:

The development of technology and the development of contemporary civilization, which is marked by the ascendancy of technology, demand a proportional development of morals and ethics. Specifically, John Paul II (1979: §15) proposes an ethic that asks the question: Does this progress, which has man for its author and promoter, make human life on earth “more human” in every aspect of that life? Does it make it more “worthy of man?” An examination of the history of technological change in the capitalist era suggests that often it does not.

John Paul II (1981: §5) argues that “[t]echnology is undoubtedly man’s ally.” Yet, we must recognize both the positive and the negative effects, which are not due to the nature of the technology *per se*, but due to the development and use of technology by humans. Technology, John Paul II (1981: § 5) tells us, “facilitates, ... perfects, accelerates and augments” human work:

However, it is also a fact that, in some instances, technology can cease to be man’s ally and become almost his enemy, as when the mechanization of work “supplants” him, taking away all personal satisfaction and the incentive to creativity and responsibility, when it deprives many workers of their previous employment, or when, through exalting the machine, it reduces man to the status of its slave.

### III. Alienation

The exclusion of the subjective dimension of labor and the overall lack of concern for the inherent dignity of each person are the primary sources of alienation in John Paul II’s analysis. In many ways, Karl Marx is John Paul II’s “dialogue partner.” John Paul II is addressing many of the legitimate concerns Marx raised about capitalism, yet John Paul II sees them as not particular to a single “mode of production” or regime of property ownership, but instead as reflecting the reality of sin and the ways sin becomes embedded in social structures. Thus, even when private property in the means of production is eliminated, as it was under the former socialist economies in Eastern Europe and the former Soviet Union, workers were still being exploited and the problem of alienation did not wither away (something that is explored in Gevorkyan [2018]).<sup>5</sup>

The historical experience of the West, for its part, shows that even if the Marxist analysis and its foundation of alienation are false, nevertheless alienation—and the loss of the authentic meaning of life—is a reality in Western societies too. This happens in consumerism, when people are ensnared in a web of false and superficial gratifications rather than being helped to experience their personhood in an authentic and concrete way. Alienation is found also in work, when it is organized so as to ensure maximum returns and profits with no concern whether the worker, through

his own labor, grows or diminishes as a person, either through increased sharing in a genuinely supportive community or through increased isolation in a maze of relationships marked by destructive competitiveness and estrangement, in which he is considered only a means and not an end. (John Paul II 1991: §41)

The concept of alienation is typically associated with Karl Marx, but we can find an earlier version in Adam Smith's analysis of the negative effects of the division of labor. While many readers sense a tone of optimism in *The Wealth of Nations*, especially those who argue that the "invisible hand" ensures that markets always produce the best possible outcome, Smith actually proposes a model that leads to both moral decay and economic decline. As Robert L. Heilbroner (1973: 243) noted, Smith presents a "deeply pessimistic prognosis of an evolutionary trend in which both decline and decay attend—material decline awaiting at the terminus of the economic journey, moral decay suffered by society in the course of its journeying." The engine of economic growth not only eventually runs out; in the process it pollutes the souls of those who are along for the ride.

Most economic analysis of technological change is based on Adam Smith's analysis of economic growth. Smith ([1776] 1976: BK I, Chs. 1–3) argues that economic progress comes from increasing the output of labor through the division of labor, which by increasing the skill and dexterity of the worker, saving time between operations, and the development of machines, makes workers more productive.<sup>6</sup> In fact, the main economic argument for free trade is that by expanding the size of a market, you can have more specialization in the production process.

However, Smith sees that the division of labor eventually harms workers, not because the machines replace workers, but because the division of labor reduces workers to doing very monotonous jobs, thus causing workers to lose the natural creativity and ingenuity that produces most technological progress. Furthermore, Smith argues that other positive human attributes are damaged by excessive division of labor. By reducing a worker to doing one or two very simple tasks, Smith ([1776] 1976: 782) argues:

He ... becomes as stupid and ignorant as it is possible for a human creature to become. The torpor of his mind renders him, not only incapable of relishing or bearing a part in any rational conversation, but of conceiving any generous, noble, or tender sentiment, and consequently of forming any just judgment concerning many even ordinary duties of private life. ... His dexterity at his own particular trade seems, in this manner, to be acquired at the expense of his intellectual, social, and martial virtues.

While Smith recommends that the government take an active role in promoting education among the working class to counter this intellectual and social decline, he does not offer much hope.

Economic decline sets in when workers, having lost the ability to innovate, stop contributing to technological change and productivity growth. Moral decay begins as workers lose the capabilities to fully participate in their lives and the lives of the communities they live in, that is, they become less human. Workers are thus alienated from their humanity and from the community. Here, Smith is suggesting that the decline in the subjective dimension of labor will eventually lead to a decline in the objective dimension of labor. If, as has often been suggested, *The Wealth of Nations* is the Bible of capitalism, it is a Bible without the resurrection.

Karl Marx's analysis of alienation is often argued to have been inspired by Adam Smith's analysis of the negative effects of the division of labor. Marx ([1867] 1976: 483) noted Smith's critique, for example. Marx ([1847] 1963: Ch. 2) had earlier examined the question more extensively in a section on "the division of labor and machinery." Alienation is for Marx a Hegelian concept. As Erich Fromm (1966: 47, emphasis in original) noted:

For Marx, as for Hegel, the concept of alienation is based on the distinction between existence and essence, on the fact that man's existence is alienated from his essence, ... *He is not what he ought to be, and he ought to be that which he could be.*

Often, the materialist foundations of Marx's analysis of alienation are emphasized. Under capitalism, workers are alienated because they do not own what they produce. In that formulation, alienation is due to private property in the means of production. Instead of their work

being an expression and extension of workers' lives, it is something that is alien to them. In fact, they are slaves to the goods they produce rather than masters. Furthermore, since they are working in a wage-labor relationship in which they are forced to sell their labor to provide for their subsistence, they are further alienated from the process of production. This type of alienation, at least on the surface, is fixable if one changes property ownership and control of capital.

Here Marx is close to the objective dimensions of labor that John Paul II discusses, but Marx goes deeper into the problem of alienation, to issues that John Paul II would define as the subjective dimensions of labor. Being powerless in the production process, the worker loses the agency and creativity that are essential parts of being human, and his or her relations with other workers are also fundamentally changed. Marx ([1876] 1976: 621) states: "The laborer exists for the process of production, and not the process of production for the laborer."

#### **IV. The Great AI Fear**

It is now important to relate the above conversation to the present-day debates about imminent negative effects of the rapid technological change on the global economy. In the 21<sup>st</sup>-century context, technological change is seen as a continued rise in automation of a range of operational tasks, potentially threatening to erase thousands of jobs. This process is then further exacerbated by AI's ominous shadow in its growing sophistication.

It is generally accepted that, by the 1950s, AI had left its original incarnations in ancient mythology and the domain of literature and appeared in more formal academic discourse. Alan Turing's (1950) question "Can machines think?" led to the foundation of new directions in the philosophy of technology and technological advancement. McCarthy et al. (1955) coined the term "artificial intelligence." McCarthy's team aimed at exploring ways of teaching a machine to simulate every feature of intelligence by precisely describing those specific features, so that machines could evolve to use language, solve various problems, develop abstractions, and (perhaps, crucially for us) improve with learning. This broad interest, of course, coincided

with the post-World War II recovery and a substantial investment in science, new robotics, and space exploration across the world.

Decades later, Stephen Hawking famously warned that “[t]he development of full artificial intelligence could spell the end of the human race” (BBC 2014). These days the pessimism grows as clever machines learn to perform more complex tasks until recently performed by humans, with millions of jobs worldwide at stake. As much remains unknown, one could refer to these debates as “the great AI fear.”

Naturally, there is no lack of expert opinions and estimates of the economic effects of the new technology’s capture. The literature is so broad, empirically rich, and methodologically multifaceted that to cite all of it would not be feasible in one article. Here, we can only touch on some of the representative studies, helping us sketch the contours of the present discourse. The diversity of contributions is based on the foundational literature and authors’ views on technological change. Much of the predictive capacity about the displacement of labor by emerging technology is driven by each study’s empirical methodology.

One influential study by Frey and Osborne (2013) looked at 702 occupations across the U.S. labor market, finding that up to 47 percent of jobs were at risk of automation by computerization of specific tasks. As they acknowledged, the authors were guided by the literature exploring task content of employment, on the one hand, and research related to offshoring (transferring certain operation duties abroad), on the other. Such an approach allowed for systematic assessment of the composition of required tasks in individual occupations and the degree to which the tasks subject to offshoring may be either automated or conducted online.

The findings are broadly dispersed across various occupations. For example, Frey and Osborne (2013) find that recreational therapists score the lowest (0.28 percent) probability of being computerized. Broadly speaking, many healthcare, education, and high-skilled special jobs (architects, photographers, civil engineers) were among the least likely 50 occupations to be automated, with probabilities under 1 percent.

On the other side of the spectrum, the authors find that many jobs in transportation, logistics, routine office work, administrative support,



and manufacturing are at high risk of automation. Telemarketers, title examiners, hand sewers, watch repairers, tax preparers, mathematical technicians, and others were at 99 percent probability of automation. The risk estimate was also great for the service sector, which has posted the highest U.S. job growth (Autor and Dorn 2013, cited in Frey and Osborne 2013). More broadly, the low-wage occupations associated with low skill (with low education requirements) remain at the highest risk of automation and disappearance. It is notable that the study concluded with a wishful hope that workers displaced by computerization of their jobs would strive to acquire new skills to move into more creative employment occupations in the new technological phase.

Complementing those findings, a report by McKinsey Global Institute (2017a) shows the effects of automation on different domains of work. This analysis divides work into different activities, such as management, education, data collection, and physical work. The analysis then proceeds to establish the degree to which automation may potentially take over part or all of the tasks. The report then considers the number of jobs of various types in each sector and combines the analysis of activities with the analysis of employment by job types in each industry. The hardest-hit industries are accommodations and food service, with an automation potential of over 70 percent. Transportation, manufacturing, retailing, mining, and agriculture are also poised for automation of more than half of jobs. Professional services in education, medicine, management, information, and real estate are the least affected, but they are also facing a 30–40 percent automation potential.

The degree to which some of the sectors, usually perceived as fundamental to economic stability, such as agriculture, transportation, and manufacturing, are automatable is staggering. Naturally, such derivations raise concern about social and economic stability, justifying some heightened discussions on the “AI scare.” Here, as in the Frey and Osborne (2013) study, what explains higher automation estimates is the degree to which a sector is comprised of largely predictable or physical activity, in addition to minimal needs for skills expertise or management ability.

In another study, McKinsey Global Institute (2017b) extends its analysis to the global scale. The consulting firm, which has acquired a reputation for expertise in developing such predictive studies, finds that anywhere from 75 million to 375 million people will need to switch their occupations by the year 2030 on a global scale. This is consistent with the rapid pace of automating routine tasks but also accounts for emergence of new jobs created by the new technology.

The report notes rising demand for such skills as subject matter expertise, communication (interacting with stakeholders), and managing people skills. Across the board, the report finds that up to 50 percent of today's work tasks may be automated and six out of 10 occupations have over 30 percent of automatable activities. With that, the country-specific impacts will vary, with developing countries lagging behind the advanced world in adoption of new technology, as those with higher labor costs are predicted to see a stronger push for automation. That spells significant immediate labor market concerns for Germany, Japan, the United States, and other rich countries, as short-term job destruction due to automation remains high.

At the same time, the McKinsey Global Institute (2017b) report comes with a caveat of expected future job growth induced by new technology. The report confirms that new jobs are expected to involve greater reliance on workers' expertise, experience, and education. The consulting company sees hope in a historical review of the U.S. job market since 1850. The data reflect growth of new sectors and occupations countering large-scale jobs destruction.

A more recent global survey by McKinsey Global Institute (2019) on the impact of AI adoption by industry suggests that, by the year 2030, transportation, automotive, telecom, and financial services are expected to sustain the largest losses in the workforce, with a significant share of organizations reporting greater than 10 percent reduction in their labor force. Such labor-substituting AI-compliant technologies as driverless trucks or fintech solutions in banking are expected to soon be rolled out in an effort by global multinationals to cut costs in search of efficiency and new markets.

At the same time, the survey indicated a strong expectation of employment growth in infrastructure, high tech, pharmaceuticals, and

professional-services industries. These results suggest that while there is inevitable disappearance of some occupations, there is also a rise in new jobs, demanding new skills. Indeed, 30 years ago, it was difficult to foresee that website designer or social-media content manager would be a full-time position, paid at competitive professional rates. Yet, these are some of the occupations created by the recent technological wave. McKinsey Global Institute (2019) finds that, globally, the proportion of disappearing jobs by sector is expected to be in line with sweeping historical trends.

Finally, the World Economic Forum (2018) estimated that the top three most demanding skills by the year 2022 would be analytical thinking and innovation; active learning and learning strategies; creativity, originality, and initiative. This emphasis on what one might characterize as “human” traits is important as one attempts to process the “great AI fear.” The average citizen of the future world, according to the projections of this global authority on capitalism, is to become a lifelong learner, constantly adapting to the rapid pace of technological change and the demands of the new economy.

### **V. AI and Inequality**

According to a survey by the Pew Research Center (2019), the majority of Americans (over 82 percent) anticipate wide-scale introduction of robots in the workplace by the year 2050, with 37 percent of adults convinced that the robots will be taking over their current jobs. Approximately 48 percent of surveyed adults are also convinced that automation has already hurt the labor market, thus causing more economic pain than benefit (with only 22 percent believing that automation is helping). Respondent expectations of substitutions of labor tasks are consistent with the industry studies above. Pew (2019) also reports that the majority of respondents expect automation to have a negative impact on their prospects of employment, with young adults and part-time workers experiencing disproportionate economic pain. Finally, there is a general sense that it would be desirable to introduce economic barriers to the growth of automation and perhaps to establish some social-safety mechanisms to protect workers in the affected occupations and industries.

If the above paragraph sounds familiar, it is because this is not the first time the world has gone through such a technological change (but probably not a revolution). Earlier, we spoke about the Luddite movement and workers' attempts to stall the introduction of mechanical equipment that was displacing manual labor. The "Great AI Scare" thus inevitably invokes concerns about the social impact of automation in the workplace. Specifically, the concern is raised about the issue of inequality and public policy.

Estimates of future effects of AI on inequality are based on how one sees the current level of inequality. There are two general explanations for the rise of income inequality in the past four decades. One explanation is to look at the rise in inequality as being a function of market efficiency, and thus higher inequality is due to skills-based technological change. Computers require greater education, thus the education premium goes up, leading to greater inequality. The problem with this type of explanation is that inequality did not go up by the same degree in all advanced capitalist economies, yet they all face the same demand for technological change. Furthermore, the education premium gap went up mostly because of a fall in the incomes of high school graduates and below, not because of a significant increase in incomes of college graduates.

The second type of explanation for the rise in inequality claims that changes in public policy (deregulation, tax policy) and institutions (decline in unions, collective bargaining) are what have caused the rise in inequality. If the first story is correct, then AI will lead to greater inequality. If the second story is correct, and there is no change in policy or institutions, then AI will still lead to greater inequality. However, if policies and institutions change, then AI could reduce inequality.

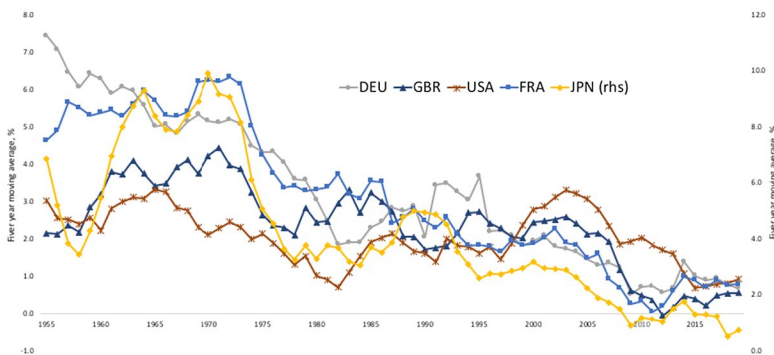
According to Korinek and Stiglitz (2019), AI has two channels for increasing inequality. First, the innovators will earn substantial monopoly profits due to lack of perfect competition. Thus, most of the income gains (compensation for new technology) will go to the top. Second, the innovation will lead to an increase in the demand for capital and a decrease in the demand for labor, leading to changes in relative prices, and thus more inequality. Since wages tend to be "sticky," they expect increases in unemployment as well. When wages

do not go up along with productivity, the extra income accrues to the owners of capital.

The confirmation comes in Figure 1, which shows declining growth in the output per worker since the mid-1950s in the world’s richest economies (Conference Board 2019). While the individual speed of the decline varies, the overall trend remains the same. This suggests that despite increases in total productivity, the growth rate of productivity (and the corresponding wage share of GDP) has been declining precipitously.

There is an exhaustive literature exploring productivity trends and changing labor productivity. For example, Bergeaud et al. (2016) find two productivity waves: one after the second industrial revolution and the other, albeit smaller, after the 1990s rise in the information and communication technology sector. The authors confirm that what motivates an increase in total productivity is technological progress; they also argue that this is where AI may be seen as a positive change in the question of income (and wealth) inequality. An increase in labor

Figure 1  
Growth in Labor Productivity for Select Countries, 1955–2019



Source: Conference Board (2019). Graph produced by authors from selected data in The Conference Board Total Economy Database™, April 2019.

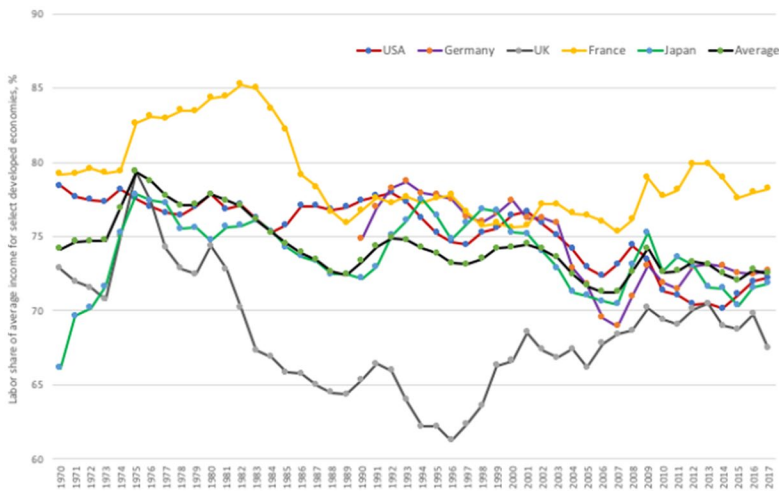
Notes: Labor productivity as measured by the growth of the output per employed person, percent change; country codes are: DEU = Germany; FRA = France; GBR = UK; JPN = Japan; USA = United States.

productivity depends on an interconnected combination of innovation, education, and institutions.

The problem, however, arises when one considers, as we do in Figure 1, the rate of change of labor productivity in connection with the declining labor share in the economy (Figures 2 and 3). In another study, Autor et al. (2020) explore the evidence for the declining labor share from a perspective of industry concentration and find support for their hypothesis.

One should consider the divergent paths of the declining labor share in Figure 2. It would appear that labor share remains higher in countries with stronger built-in labor market protections and relatively lower income inequality than in other advanced economies. For example, France, with a Gini coefficient of 31.6, has lower inequality than the United States, with a Gini coefficient of 41.4 (World Bank 2020). Aside from raising profound questions on the causes, speed, and direction of technological change, these confirmations indirectly

Figure 2  
Labor Share of Average Income, Percent, 1970–2017



Source: Alvaredo et al. (2017). Graph produced by authors from selected data in the World Inequality Database.

Figure 3

Labor Share of Average Income, Developed Economies, Percent, 1929–2017



Source: Alvaredo et al. (2017). Graph produced by authors from selected data in the World Inequality Database.

also support our earlier statement on the growing problem of within-country income inequality (as observed by Milanović [2019]).

The rise in income inequality and the stagnation of wages, documented in the recent work by Piketty (2014), Milanović (2019), and numerous other scholars, has again led to challenges to the conventional wisdom that technology creates more jobs than it displaces. Since the 1980s, we have seen a revival in discussions about technological unemployment. Jeremy Rifkin's (1996) *The End of Work* was a very popular book, demonstrating that labor-saving machinery has dramatically caused a reduction in employment in many industries. The full effect of the ongoing AI-motivated change is yet to be uncovered (a point also explored briefly by Tavani [2019]).

Furthermore, no narrative may be complete without a passing reference to the ongoing COVID-19 pandemic. What the International Monetary Fund has referred to as the “global lockdown” is expected

to make a massive dent in the global economy as the regular functioning of the global society has been upended since March 2020.

This rapid multiplication of social, economic, and political pressures on individual countries has been unprecedented, simultaneously throwing every nation in the world into an economic crisis far worse than the Great Depression or any other (Gevorkyan 2020). For the purposes of this article, there is also a direct link between the “great AI fear” and further rising concerns over inequality and human flourishing.

In the United States, the world’s largest economy, commentators have been quick to point out that the great majority of workers (by some estimates close to 75 percent) are not able to work from home in the pandemic lockdown conditions (Ellison 2020). In addition to the threat of reduced or lost income, despite temporary fiscal support, those unable to work may suffer from stress and negative effects on mental health. The majority of the workers in this group are also in low-wage occupations that, as discussed above, are likely to be automated as companies seek to minimize costs and to optimize their operations.

It is not difficult to envision that large companies facing disruptions to their supply chains and consumer markets will attempt to replace their labor force with automated production processes. A range of businesses, such as restaurants, retailers, and car services, may have an incentive to automate. Uncertainty about the end of the pandemic and the resumption of normal economic activity accentuates that possibility. Thus, a store manager might automate certain tasks and remove workers from the sales floor, if customers prefer to patronize establishments with fewer people on the ground.

## **VI. A Technological Phase?**

As we assess the effects AI is having on society and on human flourishing, the difference from past technological changes is the speed and the all-encompassing scale of the transformation. In the past, one could talk about the lead by one country, while others were catching up. Today, the diffusion of information and technology effectively breaches geographic and other barriers. That, in turn, opens up



broader possibilities to implement the latest technology, with evident ramifications for global competition and further geopolitical struggles.

The global market for industrial robots has been steadily growing over the past couple of decades. The leading regions, according to various estimates from industry reports, are located across Southeast Asia (primarily in Singapore, South Korea, and Japan) and Europe (Germany, Sweden, and Denmark). From a corporate perspective, automation is closely associated with better quality of operations, opening up an opportunity to expand the scale of production. Pushing down production costs, automation contributes to higher output in affected industries. However, automation that increases labor productivity may also help increase workers' wages.

But in the COVID-19 environment, automation also carries an added political economy dimension. If prior to the pandemic, companies had limited incentives to automate, in the crisis environment in which supply chains are stretched or stalling because of workers in quarantine, the pressure from an operational perspective is to resume production. This is why industry analysts expect a greater interest in industrial robots within the short term (Trivedi 2020).

There are three important points that emerge from the above discussion. First, the topic of technological change and its impact on society has long preoccupied worldly philosophers. The topic of technological change absorbed classical economists, who considered it to be one of the primary problems of a transforming society. The perspectives varied from pessimism to optimism. One finds some comfort in the prescience of Keynes's ([1930] 1963: Pt. I) views on the future: "But this is only a temporary phase of maladjustment. All this means in the long run that is mankind is solving its economic problem." Short-term disruptions to labor markets would lead to long-term prosperity. Although he was concerned with technological unemployment, Keynes was optimistic about the ability of society to resolve the economic problem of providing for itself.

In the same essay, Keynes also warns that such "bliss" is possible when four conditions are met: control over population growth; avoidance of wars or civil unrest; trust in science; and a balance between aggregate production and consumption. If social institutions

and morals can adjust to manage these challenges, the logic went, the world economy would achieve a level of prosperity in the long run to enable people to pursue higher goals than making money. Marx and Engels ([1932] 1999: 53 or Pt. I, §A), also long-run optimists, proposed that when communism replaces capitalism and socialism, humans will have real freedom that will make it possible for a person “to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, ... without ever becoming hunter, fisherman, herdsman or critic.”

The second observation suggests that technological change has accompanied, in fact, characterized, the entire recent history of economic development, regardless of ideological or organizational factors. In traditional, capitalist, and socialist societies, technology has played an important role in helping push progress, whether rapidly or slowly. This is what the authors of the U.N. (2017) report on AI and automation attempt to point out, as they critically review the predictions of the work by Frey and Osborne (2013) and similar studies.

Rooted in historical analysis, the U.N. (2017) report raises caution over the short-term effects of the AI-led change but in congruence with Keynes's prediction, it follows a promising path of analysis. Technological progress is expected to accelerate, driven by accumulating scale effects. Historically, such progress has generated anxiety and labor displacement. However, the U.N. economists also remind us that being in an “automatable” occupation does not immediately mean it can or will be automated. Both low- and high-skilled jobs are being created, as both low-skilled and high-skilled tasks succumb to automation pressures.

The U.N. (2017) report diverges from much of the recent predictive analysis by observing that future AI pressures may also displace highly educated professionals, including lawyers and doctors. In the COVID-19 world, anecdotal evidence emerges that automation is rapidly entering sectors, such as medicine and education, that seemed relatively protected in the estimates of earlier studies. And while reshoring may be on the popular agenda, as countries attempt to lure back their multinational corporations with incentives to adopt labor-substituting methods and devices, technological and physical limits might slow

the onset of automation. Thus, one might see unequal economic outcomes across countries. In a recent IMF working paper, Brussevich et al. (2020) observe technological inequality in the COVID-19 lockdown conditions across countries. The authors find that inequalities may also be exacerbated within individual countries, by region and labor market demographic.

This then leads to the third point, which concerns the course of AI transformation in the new COVID-19 environment and its speed and scope. The question to consider here is whether AI-associated changes should be treated as a deep-rooted disruptor or a technological adaptation happening too fast. The U.N. (2017) report leaves the question open for future interpretation. The authors argue that technological revolutions are not easily spotted and that time will tell. They argue that decline in productivity growth confirms the suspicion that large-scale transformation has not yet occurred. Instead, consistent with Keynes's view, the effect may be visible only in the long run.

One is reminded of the analysis of economic cycles known as Kondratieff long-wave cycles (Bernard et al. 2014). Could AI transformation be just a new phase in this long-wave cycle? The original causes, identified by Nikolai Kondratieff back in 1920s on the basis of data on commodity trades, included: 1) changes in technology; 2) wars and revolutions; 3) appearance of new countries on the world map; and 4) fluctuations in production of gold. The next phase might add a new dimension: thinking machines. Turing's (1950) reservations about the actual ability of machines to think (however those terms are defined) have not yet been resolved. It remains unclear how, in what direction, and when such revolutionary cognitive ability might actually evolve with the potential for large-scale labor displacement.

The COVID-19 crisis surely adds a completely new context to this discussion. One of the definitive features of the present economic, social, and health crises is its global nature. While one can draw a number of comparisons to the downturns in economic history, none stands to be an adequate benchmark. Indeed, over the past 100 years or so, the world has lived through two world wars, several pandemics, technological and natural disasters, and terror attacks—all claiming millions of lives. From a purely economic perspective, the

COVID-19-induced crisis has been compared to the Great Depression, the war economy of 1940, the 1970s oil crisis, the 2008 recession, and, perhaps one of the most unlikely comparisons, to the 1990s post-socialist reforms.

Yet, none of the comparisons adequately capture the global nature of the present crisis for two reasons. First, in each of the above examples, there was a significant alternative economic and social model. For example, in the 1930s, the Soviet Union developed its economy through centralized industrialization, which prompted capitalist economies to adopt a series of progressive measures. In the 1990s, as transformations spread across Eastern Europe and the former Soviet Union, the capitalist model and its idealized perceptions offered an alternative to the post-socialist economies (Gevorkyan 2018). Today, there is a glaring absence of any viable alternative or source of sustained financial and economic hope.

In the early stages of COVID-19, which wreaked unprecedented havoc with unrepentant violence, the collective global socioeconomic system failed to prevent the advance of the pandemic. That was followed by even greater dysfunction at the level of individual countries, irrespective of their relative incomes. Previously prevalent social disparities and inequities have grown wider, revealing deeper-rooted social inadequacies among the nations and within each country.

Addressing the confluence of rising inequality and the stubborn persistence of underemployment, a range of business groups, in a pre-2020 facelift, attempted to restore the centrality of humane capitalism with appeals to greater social responsibility. For example, the Davos Manifesto (WEF 2020) proclaimed a new corporate universal purpose: "To engage all its stakeholders in shared and sustained value creation." This new mandate, in Marxian terms, was largely an outgrowth of the intensified struggle between the owners of capital and workers.

Much of the transformation in corporate focus resulted from a combination of consumer demands, rising labor productivity, and change in the professional character of the core corporate labor force. That led to talk of dual corporate targets: traditional profit maximization and corporate social goals (Kopel and Brand 2012; Burke and Logsdon

1996). Yet, notably much of the most generous growth in benefits has been concentrated in the large corporations that are competing in the global oligopolistic markets for the highest talent, while still focusing on profit maximization. Certainly, workers did not benefit when, within a few short weeks of the beginning of the COVID-19 crisis, millions of them were laid off.

Despite some of the metamorphoses within the contemporary corporate system, there is a need for a strong institutional actor to ensure fairness and prevent social degradation and economic devastation but still provide opportunities for decentralized profit maximization. For that to happen, it will be instructive to analyze how the role of institutions and governments have evolved in relation to each other.

Any number of possible events could have set off the spark of an economic crisis. It was merely an accident that COVID-19 was responsible. The enduring impacts on public health, business, politics, and the cultural dimensions of a society have become the foundations of a new institutional system (Gevorkyan 2015). The lessons from past technological waves and other disruptions also warn us about the possibility of rising economic protectionism in the post-pandemic world.

The less-industrialized, commodity-exporting, developing countries are the weakest links in the global chain. As a result of winding down generous government programs in some countries, tens of millions of unemployed people are faced with the absence of a social safety net. Even if global retrenchment may be a short-lived trend, the longer people stay out of work, the lower the chances are of resumption of “normal” consumption at the pre-crisis levels, as incomes drop drastically and savings are depleted.

Lacking large-scale public jobs guarantees, the pressures on corporations will increase. Those with a large amount of retained earnings might outlast their less-fortunate competitors. They will all be faced with pressure to resume the trend toward adoption of cost-saving automation. However, as the U.N. (2017) report concludes, the solution to resolving the AI pressures, while requiring national development agendas, must also come through global coordination.

## **VII. AI and Human Flourishing?**

### *AI and Agency*

One of the benefits of artificial intelligence is that it is supposed to optimize by making better and more efficient decisions. This eliminates mistakes and biases, but it also eliminates human values like solidarity and empathy. Thus far, AI decision-making often increases biases. Optimization programs are based on neoclassical economic theory and the “rational economic person” model, so only quantitative variables (such as profits) are deemed important.

### *AI and Utopia/Dystopia*

A surprising number of economists see that, at some point, AI will become autonomous and will make decisions based on its values, optimizing its use of resources. This is the beginning of many sci-fi movies. AI might be able to produce enough of an increase in output to compensate those displaced, but an income is not the only benefit of employment. AI will exacerbate the priority of capital over labor, but without any role for the owner of capital.

### *Human Flourishing*

So how could the seemingly unyielding march of AI and automation be balanced with the concept of human flourishing? Just as there is no easy way to predict the true long-term impact of AI on labor markets, there is equally no easy way to combat inequality. In the capitalist economy context, one could look as far back as the work by the German philosopher Georg Hegel, who suggested two options to combat inequality and poverty : 1) require the wealthy to provide the direct means to reduce poverty or 2) create charity organizations (rich hospitals, cloisters) as quasi-public institutions (Gevorkyan and Semmler 2013).

Later, in response to rising global competitive pressures and as an attempt to strengthen a national capitalist model, Bismarck's welfare state model was developed in the unified Germany of the late 19<sup>th</sup> century. The system included federal support for the social security

system, limits on daily working time, the right of labor unions to organize and bargain for wages, and legislation to provide protections in the workplace. The variations of these state-guaranteed provisions then gradually spread across the world. In the end, the development of the welfare state model became a necessary part of mature capitalism.

While the problem of keeping the engine of economic production and consumption going was solved, the promise of progress, narrowly defined as increasing GDP, created a new situation of wealth without happiness. The goal of having more rather than being more created a new alienation, the “economism” John Paul II warned about. Ignoring the subjective dimension of labor meant that the importance of work as a form of social participation was not part of the policy discourse. “If the economy is up, why do I feel down?” was a common expression of the emptiness of this affluence that was easily measured but hard to experience. Now, however, we are moving into a situation where the welfare state model is not enough to ensure mature capitalism can provide the goods.

Today’s policy space is filled with proposals to make up for these large gaps in the welfare state model, proposals such as universal healthcare, higher minimum wage, job guarantees, and the increasingly popular “basic income.” The proposal of a jobs guarantee directly addresses the fear of loss of employment opportunities due to technological change. In one of the most recent contributions, Tcherneva (2020) proposes a job guarantee as a new social contract. If a country, such as the United States, were to adopt such a policy, workers pushed out of employment by growing automation or by a recession would be guaranteed a job and an income to support their living standards. In the 21<sup>st</sup> century, as societies become more reliant on new technology and are beset by growing industrial consolidation, such policies could help ensure human flourishing in a real and not just a conceptual way.

Another possible solution that may help societies adjust to AI-motivated displacement could be a minimal education guarantee. This policy would ensure that every citizen has access to affordable and meaningful education. The system would help workers transition between careers and adjust to the pressures of the new economy and

escape the claws of technological unemployment. Curiously, job guarantees and both educational and healthcare provisions were once the hallmark of the social policies of the former Soviet Union (Gevorkyan 2018).

With the COVID-19 pandemic, the strains on social safety nets and the push to carry out economic activities with minimal human interaction have created new challenges. So far, the superior social welfare systems of the European Union have led to far better outcomes in controlling the pandemic (Dziedzicki et al. 2020). Yet, the challenge is whether such support can outlast the pandemic. If not, it remains to be determined whether the pandemic will speed up the introduction of labor-saving technologies by companies in Europe also.

### **VIII. Conclusion**

The “great AI fear” has generated a considerable number of headlines. However, it is not the change that matters most but how prepared we are, as a society, to address it. As the world battles the COVID-19 pandemic, very little can be said with certainty about the future of work. As John Maynard Keynes (1937) once said about the future, “we simply do not know.”

But continuing with the grandmaster’s thought, the world is compelled to adopt workable decisions for the present, tending to the critical matter at hand, and shaping the contours of a possible future. If the needs of a society laden with COVID-19 are telling of anything, it is that the new world order requires proactive, informed, and systemic government action, coupled with more humane capitalism. Therefore, in the long run, corporations and institutions will become ever more dependent on their employees as a healthy and productive workforce.

The development of “people-conscious” policies will require a broader understanding of human flourishing. Such policies as applied to workers will need to consider the subjective dimension John Paul II wrote about. This will allow the introduction of issues like the role of work in human flourishing and the role of families and communities as partners in the employee/employer relationship (work/life balance). Alienation is still the blight of many, if not most, people because too often people are treated like objects, rather than as humans with



dignity. They are not the lead protagonist in their life story, but instead they are constantly reacting to outside events and forces. They live in an “economy of exclusion,” the remedy for which is greater inclusion.

People-conscious policies, community public-health initiatives, and economic-development lessons are just a few examples of how micro-level players are the key to creating a more humane and equal society. But institutions, whatever those might end up being, do not evolve spontaneously, nor are they solely a result of violent events. Nurturing and constant work are required.

Despite the early theoretical excursions into AI’s abstract and conceptual thinking, one perhaps finds comfort in the fact that, at least for now, AI still lacks consciousness. What remains for society to focus on are the three pillars of sustainable development: a structurally sound economy, a fair institutional system, and, paramount to all that, flourishing social well-being.

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### **Notes**

1. “Say’s Law of Markets” is, after all, named for him.
2. In this idealized picture of reality, everyone who is looking for a job at the market rate will be employed. People who do not have jobs are unemployed because they will only work for a higher wage, a wage employers will not pay because it is above the marginal revenue product of the workers—the value they generate for the employer.
3. All human decisions are understood through the lens of Bentham’s utilitarian psychology. Humans are chained to the twin motives of pleasure and pain; they seek the first and avoid the latter.
4. For more on CST and economics, see Clark (2008, 2014, 2019).

5. As the old Polish joke goes: “Do you know the difference between capitalism and communism? Under capitalism man exploits man. Under communism it is just the reverse” (Galbraith 1958: 57).

6. It is worth noting that the division of labor is also a cause of inequality, as Smith rejects Aristotle’s claim of a great natural inequality between humans. Smith ([1776] 1976: 28) famously argued that the differences between the philosopher and the porter are the result of the division of labor, not the cause.

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