Theoretical Notes on the Risks, Challenges, and Opportunities of AI at the Social Level

“The greatest danger of artificial intelligence is that people conclude too early that they understand it.” Eliezer Yudkowsky

When debating the countless possibilities arising from the extensive transmission of AI in the world, two main perspectives can quickly be confronted:

The first perspective refers to Artificial Intelligence as an imminently powerful opportunity for improving people's living conditions. It facilitates activities, allows for rapid progress in tasks requiring more time and dedication, favors agile and effective decision-making, automates repetitive tasks, can diagnose and/or treat diseases effectively, drives innovation and creativity through the design of personalized and custom-made products, and has the potential to elevate companies' competitive advantage, among many other functions.

Without entering the false dilemma fallacy, AI has shown itself to be entirely categorical, versatile, and helpful in managing almost all areas, fields, and sectors of human life. As established in previous sections, the utility of this technological tool has been mentioned in areas such as medicine, education, systems engineering, and robotics. However, this list is much broader, as finance, recreation, household cleaning, and even law have also benefited from the introduction of intelligent systems. One could enumerate other benefits or professions, and still, the list would seem endless.

In this scenario, exploring the field of AI is, therefore, an element many highlight and should continue to be investigated. It cannot be overlooked that intelligent machines have potentially useful effects for large industries and society, and their competitive advantages are increasingly decisive for daily life.

When talking about Artificial Intelligence as an opportunity, it is not only about the possibility of convergence between physical, biological, or digital technologies; it mainly refers to the fact that AI, as known today, is much more than automating and mechanizing human thought. “It is generally a structure that visualizes the utility and versatility of technological advancements in modern society, playing a prominent role in the development, evaluation, and promotion of sustainable development goals” [50]. However, it cannot be forgotten that, although there are significant contributions from AI, errors can occur in its processes, as happened, for example, with an AI system that, instead of distinguishing types of war tanks, learned to distinguish the landscapes where these tanks were located.

On the other hand, the second perspective is identified by those who, without needing to resort to anachronisms, foresee AI as a negative force altering the historical course of humanity in the current century. Undoubtedly, Artificial Intelligence has called for serious ethical consideration, as researchers and experts have pointed out that its evolution is not only about how it changes or improves people's way of life but also about “a dialectically evolving entity capable of acting autonomously, learning, and self-modeling based on its own individual and collective experience, at a pace that surpasses human capabilities” [2].

This situation highlights that the unstoppable technological transformation is experiencing growing global concern, especially because it is a product that, according to experts, is increasingly less controllable. The significant importance humans have given to Industry 4.0 has also forced discussions about its risks or potential threats to humanity's living conditions; risks that directly affect the role of humans and have a deeper and broader meaning considering the transformations derived from digitalization. These risks:

“Present a very unique nature as they do not physically compromise our survival like environmental, health, or public safety risks. On the contrary, digital risks affect rights and freedoms and even our political system, as, besides individual privacy, they involve freedom of expression, political freedoms, the functioning of democracy, the principle of equality, and ultimately, human dignity” [51].

This argument envisions a model of human rights that is seldom considered by companies creating AI systems. This model, although appearing diffuse and superficial, crystallizes from a protection paradigm created through international pacts and, if linked to the development of new technologies, presupposes accepting two figures: The first is that the idea of inclusive innovation for sustainable development must be strengthened, and the second is that, in the human rights model, disruptive technologies must incorporate the principles of algorithmic identity, algorithmic vulnerability, and algorithmic dignity; principles aimed at inhibiting the risk people are exposed to by the digital world.

The above not only makes understanding Artificial Intelligence as a whole more complex but also requires specific intervention from public authorities. It could even be said that laws sometimes seem insipid to solve problems derived from the misuse of intelligent systems, thus requiring real digital risk governance, as Vida Fernández proclaims in his text “The Governance of Digital Risks: Challenges and Advances in AI Regulation” [51]. With governance, this author aims to give meaning to the new forms that governments have adopted to manage the risks posed by new technologies and which humans face. While it is a broad and expressive concept, its interest focuses on European public power, which

radically differs from those established in countries like China, the United States, or Russia.

When mentioning the risks of AI, it implicitly refers to the possibility of future harm or damage to individuals, and in this sense, we can highlight some examples:

- People may see the security and privacy of their personal data threatened.
- There is a possibility of a significant loss of interpersonal interaction in the future. The development of this technology will likely increase isolation and loneliness.
- Large industries foresee problems inherent to technology and the implementation of intelligent machines in daily life.
- The ease of accessing such systems (e.g., Chat GPT from Open AI in all its versions) has allowed malicious entities and individuals to misuse them. So much so that "the European Union's police cooperation body EUROPOL detailed how AI language models, which are expected to revolutionize technology and the global economy in the near future, can also drive fraud, cybercrime, and terrorism" [52]. Just days after the launch of this system, the impact its use could have on society was anticipated, as it was demonstrated that, although the system refuses to comply with certain orders, some people have found ways to bypass the content filters of this chat; therefore, the more the functions and services of AI evolve, the greater the likelihood that it will be used for illegal activities.
- Currently, there is a concentration of wealth in multinational companies employing AI systems in their manufacturing processes. This potential risk limits other companies or states' access to the technological advances they implement, visualizing a monopolized environment that inhibits free market.
- One of the most well-known inherent risks of disruptive technologies is job loss, which raises the issue that machines could eventually replace humans. In fact, the Ministry of Economic Affairs and Digital Transformation published a list of sectors with the most expected impact from AI in the short and medium term, as shown in the following chart:

Diagram 7. Sectors with the Most Expected Impact of AI Source: Adapted from the Ministry of Economic Affairs and Digital Transformation [49]

In this scenario, people are being forced to retrain professionally, as the professional and educational interests that the market will demand will be different. Analysts predict that in 20 years, 4 out of 10 jobs will be affected by robotization and the automation of certain tasks [17].

- Although one of AI's major limitations is the lack of common sense, the machine-human interaction, along with its limitations, needs to be carefully considered based on an idea that incorporates the ethical component to prevent machines from making the same or more severe mistakes than humans.

All these circumstances show that, unlike global risks, digital risks have a greater evolution and can represent a significant threat to society as a whole. Furthermore,

“We must rethink the unstoppable digitalization process to which we are subjected, whose intensification in recent years exponentially increases the level of risks it entails. It is an irreversible process that will continue to increase as all states, companies, and other private entities make their growth and development dependent on digitalization” [51].

However, despite these risks being constantly stated by governments and some entities, people still do not assimilate or perceive them as real dangers. “In this sense, it must be remembered that there have been digital disasters that have revealed very serious damage on a global scale, such as the NSA's Prism Surveillance System revealed by Edward Snowden or Cambridge Analytica with Facebook” [51], and it is expected that, in light of these episodes, there will be at least an awareness similar to that of environmental protection and care.

In this context, it is important to note that, with the presence of Artificial Intelligence in our lives, some challenges are also posed, related to the current labor and gender gap, as it has been widely recognized that both Industry 4.0 and AI are driven mainly by men. Women, in this particular scenario, do not represent more than 35% of enrollments in careers such as mathematics, technology, science, or engineering (STEM careers), according to data supported by UN Women [53], drastically reducing the contributions and future innovation possibilities that this gender can bring.

Another challenge worth highlighting is the significant possibility that, with the constant use of AI, geopolitical inequalities in the world will become increasingly pronounced. There is no doubt that different countries have bet on cutting-edge technology in the AI field, as well as the constant training of their professional workers in the subject. This situation has led to competition among major superpowers (China, the US) for leadership in the development and research of Artificial Intelligence. The European Union, although in the background, has also strived to gain a place and recognition in this matter.

While these challenges may seem like a dark foreboding, prominent celebrities and experts like Bill Gates, Stephen Hawking, and Elon Musk have raised their voices of alert

about AI. From their perspectives, this technology inevitably represents an inevitable risk for the coming years, as they have seen how AI laboratories have ventured to create, deploy, and develop increasingly powerful "digital brains" that no one, not even their creators, has been able to understand, predict, or control reliably" [54]. Among their main requests is the intention for a pause until strong regulatory frameworks and authorities are established worldwide. They also explicitly express their interest in developments that help distinguish the real from the artificial.

Elon Musk, for his part, has constantly emphasized that although AI will continue to advance by leaps and bounds in the next 20 years, humanity must learn to decide in which direction to steer its development, because despite appearing harmless, it can also be manipulated and used maliciously.

For this reason, it is important to consider two interrelated aspects: on the one hand, if experts are currently reflecting on human intervention in algorithms, how much human intervention is necessary or would be appropriate for AI systems to be respectful, legitimate, or promoters of human rights (HR)? And, on the other hand, how could companies or states guarantee human intervention in decisions that an intelligent machine decides to make? Prospectively, these questions invite reflection on the challenges that Artificial Intelligence is presenting today, which also relate to our identity as a species; as Corvalán highlights:

"If human beings are characterized by diversity, randomness, and imperfection, we are entering an era of automation that could put these traits into crisis. Although it sounds improbable, in the not too distant future, it will be essential to seriously consider guaranteeing a fundamental right that could be the cornerstone of the AI era: the right to the random and imperfect diversity inherent to human beings" [55].

Undoubtedly, humanity is facing technologies that disturb its tranquility. Today, issues such as employment discrimination, housing, or credit, as well as people's high dependence on technology, have exceeded limits, which has undoubtedly generated great social inequalities worldwide. It is not just about job elimination, limited access to AI technologies, or the concentration of power in some companies; this scenario is much broader and also relates to, for example, biases in personnel selection or decisions that human resources areas make about their workers. Although it seems simple and without greater meaning or repercussions, this scenario has perpetuated discrimination in various fields and significantly increased unemployment and social inequality worldwide.

In this case, and wanting to delve into the proposed research question: Does the use of Artificial Intelligence by humans represent a complementary element or an antagonistic technology today? It is highlighted that, although there are opposing positions regarding the use of AI, these types of technologies will continue to be a truly useful tool for society as a whole. Although this question deserves serious study, Artificial Intelligence is the cornerstone in the next stage of evolution.

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