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# Digital technologies and human rights: challenges and opportunities

## Tecnologías digitales y derechos humanos: retos y oportunidades

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**Abstract**

Digitalization has revolutionized modern life, but it also presents complex challenges to human rights. The objective of this study is to consider digital technologies phenomenon in its complexity. In our research we mainly relied on dialectical method, systematic approach, comparative-historical method, axiological approach. Our research highlights both a range of benefits and a variety of risks associated with the deployment of digital technologies into life. Key concerns include data safety, human consciousness manipulations, cyber-security threats, the 'digital divide', algorithmic biases, and authoritarian technology misuse. But despite these challenges, digitalization offers opportunities for human rights advancement. We can also envision comprehensive social inclusion

**Resumen**

La digitalización ha revolucionado la vida moderna, pero también plantea complejos desafíos a los derechos humanos. El objetivo de este estudio es considerar el fenómeno de las tecnologías digitales en su complejidad. En nuestra investigación nos basamos principalmente en el método dialéctico, el enfoque sistemático, el método comparativo-histórico y el enfoque axiológico. Nuestro estudio pone de relieve tanto una serie de beneficios como una variedad de riesgos asociados al despliegue de las tecnologías digitales en la vida. Entre las principales preocupaciones figuran la seguridad de los datos, las manipulaciones de la conciencia humana, las amenazas a la ciberseguridad, la "brecha digital", los sesgos algorítmicos y el mal uso autoritario de la tecnología. Pero a pesar de estos retos, la

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in cyberspace, digital literacy promotion, further technological innovation, and robust ethical and legal frameworks safeguarding digital rights. Mindful AI deployment can enhance living standards, improve education and healthcare, and even extend longevity. Contemporary political systems must comprehend and regulate digital technology's power, ensuring responsible governance, as without safety protocols and reasonable limitations for AI-powered tools and technologies, human rights and freedoms remain at risk.

**Keywords:** digital technologies deployment, algorithms, neural networks, ethics, laws, rights, technology misuse.

digitalización ofrece oportunidades para el avance de los derechos humanos. También podemos prever una amplia inclusión social en el ciberespacio, la promoción de la alfabetización digital, una mayor innovación tecnológica y sólidos marcos éticos y jurídicos que salvaguarden los derechos digitales. El despliegue consciente de la IA puede elevar el nivel de vida, mejorar la educación y la atención médica e incluso prolongar la longevidad. Los sistemas políticos contemporáneos deben comprender y regular el poder de la tecnología digital, garantizando una gobernanza responsable, ya que sin protocolos de seguridad y limitaciones razonables para las herramientas y tecnologías impulsadas por la IA, los derechos humanos y las libertades siguen estando en peligro.

**Palabras clave:** despliegue de tecnologías digitales, algoritmos, redes neuronales, ética, leyes, derechos humanos, mal uso de la tecnología.

## Introduction

When we start talking about human life, individual rights and information rights, today we can no longer talk about them abstractedly, outside the context of the development of the latest digital technologies, including the artificial intelligence. Such a technology as an Artificial Intelligence (algorithms, chat-bots, neural networks) is becoming more powerful not every year, but every month. This rapid digitalization and the implementation of comprehensive cyber-technologies have a direct connection with human rights discourse.

The ***actuality*** of this research is determined by the ambivalence of technology, especially those in the digital field. Studying the latest digital technologies from the standpoints of social philosophy is important for several reasons, particularly, it has broader implications for society and its ethical, moral, and philosophical foundations. As philosophy often addresses ethical questions related to the impact of technology on individuals and society, researching the interaction of human beings with digital technologies allows us to assess their ethical implications, such as privacy concerns, surveillance, data ownership, and the responsible use of AI (artificial intelligence). Social philosophy often debates the idea of technological determinism, which posits that technology drives societal change. Researching digital technologies can contribute to this discourse by examining the extent to which technology shapes our values, culture, and social structures.

The ***object*** of this study is the phenomenon of digital technologies, taken in its complexity, variability, and multidimensional nature.

The ***purpose*** of this study is to analyze the range of possible advantages, hazards, and challenges of introducing the latest digital technologies into modern life, taking into account the contradictory nature of the innovative process.

The ***importance*** of given research, as we hope, is connected with the ability to contribute into better understanding of *how* the latest digital technologies may impact on society, including issues like social inequality, unemployment, cyber-gap, digital economy divides, democratic values and processes, public opinion manipulations, transparency problems, consumerism and new ecological thinking, and the potential for social improvements. It allows us to consider how technology influences power dynamics, social structures, and human relationships. We believe that researching digital technologies helps us examine how these technologies can *empower* or *disempower* individuals, affecting their choices and actions.

## Literature review

The ***current knowledge*** of the topic is presented in some publications and contemporary social discussions. Within the array of publications pertinent to gaining a comprehensive grasp of the studied subject, it's important to acknowledge the works that center their focus on some related


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issues, like: the Machine Learning, which underlies computational systems that are biologically inspired, statistically driven, agent-based networked entities that program themselves (Audry & Bengio, 2021); Deep Learning foundations and concepts (Bishop & Bishop, (s.f)); Deep-Learning architectures and methods (Goodfellow et al., 2017); issues of image processing and synthesis using Deep learning (Ganin et al., 2019); Deep neural networks for natural language processing (Lin & Bengio, 2019); Organizational decision-making structures in the age of AI (Shrestha et al., 2019); Human-centered Artificial Intelligence (Shneiderman, 2020); measuring neurophysiologic responses when people choose to trust algorithms (Alexander et al., 2018); the link between information processing capability and decision-making effectiveness (Cao et al., 2019); the intersection of AI, decision-making and educational leadership (Wang, 2021); use of Big data and AI-embedded systems in some industries (Plantec et al., 2023 ; Svyrydenko & Stovpets, 2020); the role of Trust during Human-AI collaboration in managerial decision-making processes (Tuncer & Ramirez, 2022); some opinions from the AI architects, on what may be the path toward human-level machine intelligence (Ford, 2018); generative pre-trained neural networks and AI-human collaboration issues (Fui-Hoon Nah et al., 2023).

Among the aforementioned studies, there are a number of works between 2019-2023 that we consider impactful, as they raised a number of issues that were further enhanced in our study.

In particular, the study made by G. Cao, Y. Duan, & T. Cadden investigates IT-enabled capabilities and the relationship between competitive advantage and the key concept of value, rarity, inimitability and non-substitutability of information processing in business realm. They use data collected from 633 UK companies, and their study shows that there is a positive relationship between the value, rarity and inimitability characteristics of information processing, and competitive advantage, which is partially mediated by decision-making effectiveness. Another study, made by F. Fui-Hoon Nah, R. Zheng, J. Cai, K. Siau, & L. Chen, aimed to make some categorization for generative AI challenges, which can be attributed to ethics, technology, regulations and policy, and economy. As authors claim, many of these challenges arise due to the lack of HCAI (Human-centered AI); to be successful, generative AI needs to be human-centered by taking into account empathy and human needs, transparency and explainability, ethics and governance, and transformation through AI literacy. In the recent book, written by S. Audry, & Y. Bengio, there are insightful questions and discussions on the progress of ML-based AI; this work may appear interesting for engineers and computer scientists who examine the deep potential of ML (machine learning) in the realm of different arts. In this book, Y. Bengio makes an assumption that human artists and the ML tools may be able, in their synergy, to enter those 'mental territories' where none alone can easily go further.

In addition to those sources we address in our literature review, in this research we try to raise some unexplored questions. Among them, we emphasize on how the 'digital divide' may exacerbate socioeconomic disparities, and how the 'emotionally calibrated' neural networks wield the potential to be weaponized by non-democratic regimes to manipulate public opinion, adding another dimension to the threat landscape. In some extent, we develop the consideration of the 'algorithmic biases' problem that may lead to discrimination in employment, education, housing, and service access (this discourse was seriously elevated by T. Baer in 2019, and we enriched it with some fresh examples).

**Methodology**

of the research is based on a dialectical method, systematic approach, comparative-historical method, axiological approach. Applied in a comprehensive manner, they contribute into mental modelling of different future scenarios, which have the potential for fulfillment, depending on the combination of certain technological and social factors.

Applying the ***dialectical method*** to the study of digital technologies can offer valuable insights and contribute to a deeper understanding of this rapidly evolving phenomenon. Using this method, we identify the following dialectical contradictions within digital space:

- *privacy vs. publicity* (the tension between privacy concerns and increased public involvement becomes a significant dialectical aspect in the digital realm);
- *inclusion vs. exclusion* (digital technologies can both include and exclude individuals or groups; the dialectical method helps in examining the contradictory nature of inclusivity and exclusivity, shedding light on


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how technologies can simultaneously empower some while marginalizing others);
- *centralization vs. decentralization* (digital technologies, like blockchain, introduce the growing conflict between centralization and decentralization; the dialectical method can aid in examining how these opposing forces interact, what trends arise, and how they are manifested in various digital contexts);
- *order vs. chaos*;
- *freedom vs. total control*;
- *development vs. disruption* (while digital technologies contribute to progress and innovation, they may also disrupt traditional industries and job markets; the dialectical method helps to identify and analyze these contradictions, allowing to understand how they should be resolved).

A ***systematic approach*** in studying the phenomenon of digital technologies contributes to this research by providing a structured and organized framework for exploring such concepts as cybersecurity, communication, creativity, AI social impact and its possible economic implications. A systematic approach ensures encompassing of various aspects of digital technologies, including technological specifications, user behaviors, market trends, regulatory frameworks, and social consequences. A systematic approach also encourages *interdisciplinary exploration*, ensuring that research considers not only technological features, but a related issues from sociology, anthropology, economics, ethics, and law.

The use of ***comparative-historical method*** emphasizes historical context in respect of digital technologies' impact to human rights, and studies their evolutionary path. Applying this to the study of digital technologies involves tracing the historical development of technologies, understanding the crucial contradictions at different stages of civilized history, and examining how they've shaped societal structures and norms.

An ***axiological approach*** used in this research makes it possible to look at the specific values embedded in, and associated with digital technologies. Axiology focuses on ethical values and principles. In the context of *digital technologies and human rights*, this approach helps to evaluate the ethical dimension of 'digital revolution'. It addresses questions related to privacy, security, transparency, and the responsible use of AI. In some extent, digital technologies reflect (and even can shape) cultural and societal values. Axiological approach allows us to explore how digital tools and platforms align with or challenge prevailing cultural norms. For example, social media platforms may influence communication styles and societal expectations, and an axiology helps to assess these impacts.

**Results and discussion**

We want to frame our research moving forward around Artificial Intelligence *positive* aspects, and AI as a *threat* right now. As many futurologists fairly say, there are two essential things to know about AI. Firstly, it is the pioneering technology in history that can *make decisions* by itself. Secondly, it is also the first technology in history that can *generate ideas* by itself. Some developers try to calm us down by comparing it to previous technologies, where initial concerns faded away over time. However, AI is unlike anything we've seen before in history. Whether it was a stone axe or an atomic bomb, but all previous tools empowered humans, because it was *humans* who had to *decide* how to use them (Bigman & Gray, 2018). But AI can make decisions by itself, so it potentially can take power away from the humankind.

Additionally, previous information technology could only reproduce or spread human ideas, such as the printing press, which could *print* the Bible, but not *write* the Bible, as well as it couldn't provide a commentary on it. In contrast, systems like GPT can create entirely new commentaries on the Bible or any other topic. In the future, potentially, they might even create *new* holy texts for future religions. The irony is that Humans have always fantasized about receiving holy scriptures from a superhuman intelligence, and now it is becoming possible (not from God above, but from neural network).

While there are many positive applications for this kind of power, there are also many negative ones (Xu et al., 2022 ; Fui-Hoon Nah et al., 2023). It's fundamentally different from anything we've encountered before (Agrawal et al., 2019). We shall try to draw the attention on how the newest information technologies may show up in different life spaces.

The first example is the election process. The tools derived from the large language models can be used for propaganda, misinformation, and personalized trolls that could manipulate voters' decisions. Presently one may use, for example, such generative neural nets as "Midjourney", or "Craiyon", or Google service named "Dream A.I" - any of such instruments might be applied


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for creating fake images, aimed simply at discrediting your political rivals, and to deceive voters. That is an obvious hazard for the democracy.

The second threat, which may arise in a few years from now, is if we overcome the lag between the current level of technological development in AI, and human intelligence. If we build machines that are at least as intelligent as us, they would have inherent advantages due to their access to vast amounts of data, and their digital communication bandwidth. This would enable them to acquire and share information much more faster than humans. Eventually, this will have an impact on the dynamics of the decision-making process. Decision-making effectiveness mediates the link between information processing capability's value, rarity, inimitability and non-substitutability and competitive advantage (Cao et al., 2019: 124).

It makes researchers think that even if we only uncover the same principles that give us our own intelligence, AI would surpass us in certain ways. We already observe this with technologies like ChatGPT, which in some ways is already smarter then us. Of course, neural nets possess more knowledge and also exhibit limitations, but it's just the beginning. Creating a 'new species' that was smarter than us wouldn't bode well for us.

What's important in this technological transition, it's *timelines*. If all mentioned changes come in decades, maybe we have a chance to adapt society to AI. If it comes in five years, it seems hopeless to prepare. Human societies are extremely adaptable. We are good at it, but it takes *time*. For instance, if you look at the major technological transition, the Industrial Revolution, from the early 19th century until today, it took us many generations to find out how to design relatively prosperous industrialized societies. Along the way, we had some terrible failed experiments, while building industrial societies, such as Nazism, Soviet communism, Maoism, which resulted in the deaths of millions of people (Pokorny, 1993). These experiments were attempts to build functioning industrial societies, but ultimately failed.

Now, we are facing something even more powerful than the trains, radio, television and all other inventions of the Industrial Revolution. Now we face the advent of AI. We all want to believe: there is a new chance to organize safety and prosperity with AI, but it will require *time* and *caution*. We must ensure that we do not make the same mistakes as in the past. Because, with *this* kind of technology, there won't be a second chance for us no more. Actually, in the 20th century, we managed to survive those failed experiments of the 'Second Industrial Revolution' only because the technology was not powerful enough to destroy us. Therefore, we must be extremely careful and take things more slowly when dealing with the potential consequences of AI. In addressing these immense issues, there needs to be both a corporate and societal response, as well as a government response. Ultimately, it's the responsibility of governments to regulate this very dangerous development.

The problem is that the incentive system we've built works reasonably well both for industrial societies and liberal democracies. It is based on competition, and companies would not survive if they didn't play that game, because another one would take their place. But now, there are also individuals in those companies, who may think that ethics, human rights and social values are important (Schrempf-Stirling et al., 2022), so humans can temper a bit that profit maximization incentive, but it's a very strong one. That is why it's hard to restrain this rapid evolution of AI technologies, especially in such populated and centralized countries as China.

What is the *principal difference* in the understanding of human rights in China and the West? Predominantly, in most liberal democratic societies, issues of human rights, fundamental freedoms, democracy and the rule of law are universal in nature and *do not* belong exclusively to the internal affairs of the particular country. Such a state of affairs sequentially derives from J. Locke's concept of justice, largely due to his ideas about the ethical unity of people. As per Locke, this unity is explained by the equality of all human beings, by virtue of belonging to the human race, and therefore, each individual is guided by a single 'natural law' (Borinshtein et al., 2021: 260).

In China's government, they believe that each country has the sovereign right to set *its own human rights standards* within its state jurisdiction, as well as to interpret the degree of compliance with human rights standards in their country; and *no one* has the right to criticize *anyone* in relation to human and civil rights, because this, as they claim in China, would be an 'interference into internal affairs' (Stovpets, 2020: 69). According to the Chinese government, countries should build mutually beneficial economic policies, cooperate on security, and respond to global threats, rather than *teach* each


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other about democracy and human rights, because every nation has its own standard of human rights. This is important to keep in mind, in order to have understanding of the *starting points*, from which human rights are evaluated and interpreted in different cultures and civilizations.

Here we could place a lot of arguments & counter-arguments on Chinese so-called "social rating system" (also known as the "system of social credit"), and there would be a variety of opinions: from that using such comprehensive cyber technologies is the only possible instrument to keep in order such a huge population as Chinese (Jinghua, 2019) - to the opinion that contemporary China is turning on the true "cyber-prison" due to specific features of Chinese cyber security and data laws (Parasol, 2022). And even in the 'liberal world', what we saw in recent years, is that the political discussion is just not there. If you look at the main issues that politicians are concerned of, that their parties are talking about - they are not talking about AI seriously, while this should be one of the top issues in every election campaign. Just because it is not some *abstract* existential dangers down the line, it's also *immediate* concerns of everyday life. It's our *jobs*, it's about *who* is making decisions influencing our life. You apply to a bank to get a loan, and increasingly - it's an AI making the decision about your loan. You try to enter a university, or you apply to an employer to get a job - increasingly it's an AI making the decision! And you don't even understand, if they rejected you - *why* did they reject you? How were you evaluated and *who* made final decision? Maybe AI was wrong?

Thus, the AI should be regulated more. And when we talk about regulation, we need to differentiate between regulating *the development* of AI in controlled realm, its research in laboratories, and regulating the *deployment* of AI products into the public sphere. Now we need a strict control in respect of its *public deployment*. There are some very simple rules that we need to make, for instance, that an AI cannot *counterfeit humans*, meaning that if we're talking with someone, we need to be aware of whether it's real human or artificial intelligence. If we don't, public dialog will fail and democracy will appear impossible. It's two different things: trying to convince *human* to change their worldview and beliefs, and trying to do the same to AI bot! The last one would obviously be pointless. If you're having a discussion about the elections with somebody, and you cannot tell whether it's an AI or a real human, that's the end of democracy. Because for a human being, it makes no sense to waste time trying to change the mind of a bot, as it doesn't have a mind. But for the bot, every minute it spends talking with us, it gets to know us better. It builds even a kind of *trust* with a true person, and then it's easier for the bot to make changes into human's views.

We have known for a couple of years that there is a battle for *attention* going on in social media. Now, with the new generation of AI, this battlefront is shifting from attention - to *trust*. If we don't regulate it, we are likely to be in a situation when you have millions of hunting AI agents trying to gain our sincerity and trust. Because that's the easiest way to convince us to buy a product, or vote for a politician, or whatever. And if we allow this to happen, it will lead to a new kind of manipulations. The same way you cannot release powerful new medicines or vehicles into the public sphere without going through safety checks and getting approval, it should be the similar to AI. Yes, we do have legal acts about data, we have laws about communication, legislation on information and personal data protection. But they were not designed to deal with some of newest problems, produced by the advanced AI. The science and technology moves, the market changes, and we need a lot of agility from governments.

Another interesting thing, how democratic system would use the AI technologies, and how it would be used by authoritarian or totalitarian systems. It's credible, totalitarian systems will be much worse than democracies when it comes to regulating AI and keeping it under control. The traditional problem of totalitarian regimes is that they tend to believe in their own infallibility. They're convinced they never make mistakes, and they don't have any strong self-correcting mechanisms for identifying and correcting their own mistakes. And with the totalitarian regime, or some kind of super powerful 'world government', the temptation of that system to give too much power to AI, and then not be able to regulate it, will be almost irresistible.

And once the totalitarian regime gives power to an AI, there will not be any self-correcting mechanism that can point out the mistakes that the system will inevitably make. It should be very clear that AI is not infallible. It has a lot of power, it can process a lot of information, but information isn't always *truth* (Handley-Miner et al., 2023). These two notions do not necessary coincide. There is a long way leading from information to truth and to wisdom. And if we give too much power to AI, it is *bound* to make


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mistakes. Only democracies have this kind of checks and balances that allow them to try something, and if it doesn't work, to identify the mistake and correct it.

We obviously need to focus society's attention on all these problems. It is not about being alarmists. Rather, it is important to acknowledge that, aside from the long-term existential risk, many of our most immediate problems in the economy and society can significantly worsen due to AI. Particularly, the job market should be a central concern for everyone.

Artificial Intelligence definitely will not destroy *all* jobs, but it will certainly *eliminate some* of presently existing jobs, while creating new ones. However, the transition and retraining of individuals will be challenging. It is important to remember that historical events, such as Hitler's rise to power, were influenced by prolonged periods of high unemployment, when around 3 years - up to 25% people in Germany were unemployed. And even if we anticipate that in 20 years (but maybe we don't have these 20 years) the situation in labour market will be better, we cannot ignore the immediate consequences of 20% unemployment for this transition period. As Humans have legal and moral responsibilities over the design of Machines, including robots (Shneiderman, 2020: 113), we must thoroughly calculate the risks to the labour market.

Regarding the job issues, the various camps make very different claims. Among them, there are people who suggest that a large fraction of jobs would be modified. A recent study coming out of "OpenAI" and some academics indicating that (Eloundou et al., 2023). This may lead to increased productivity, meaning we would either have fewer people doing those jobs, or we would do more with the same number of existing workers. So, two options may arise: either jobs shortening, or their preserving with rise of productivity. It's rather hard to predict those things precisely.

Also, one of the arguments we've heard on the side of not worrying, is that *societies change slowly*. Even if we had the technology for something, it might take years or sometimes decades for people to fully integrate it into society, and have a significant impact on the job market. We just can suppose, once you have a system that essentially does the work better, like the ability to manipulate language through email, social media, databases, and other tasks, it's *likely* that those kinds of jobs could be done better fairly quickly in many sectors. Whether companies will be able to adopt these changes impetuously or gradually, it's not easy to foresee. But if they do, we could potentially face all these transition problems.

Psychologically, it's hard to accept: *what if a bot or an AI is coming for my job*? Though it immediately grabs people's attention, it's not a simplistic idea, that there will no longer be any jobs for humans. There will be a lot of new jobs, but the transition is always difficult. How do we retrain people, especially if to take into account the global considerations? Because the AI Revolution is being led by a very *small* number of countries who are likely to become extremely rich and powerful because of that, whereas it could destroy the economy of less developed countries. Even if we think about something like the textile industry, what happens to the economy of some populated countries, when it becomes *cheaper* to produce textiles in Canada or the USA, than in Brazil, Mexico, or even in India or Bangladesh?

Do they really will be able to *retrain* millions of textile workers in these countries - to become web designers or digital developers? And who will pay for the retraining? Maybe, in the advanced developed countries, the gains from the AI Revolution will enable the government, hopefully, to cushion the blow for the people who would lose their jobs, and enable them to retrain. But it won't occur in the same manner in developing heavy populated countries.

Eventually, it may be like with the Industrial Revolution in the 19th century, which led to very few countries basically conquering and dominating the whole world. This could happen again within a very short time, due to the Automation revolution and the AI Revolution. And again, it's not just the economy; it's also the type of *political control* that you can get from harvesting all the world's data and analyzing it. Previously, to control a country, you needed to send in the soldiers, or set up a military base there. Now, increasingly, you just need to take out the *data*. What happens to a country, when the entire personal records, medical records, tax codes, real estate documents, bank accounts, files with other sensitive information, phones and emails, whatever - personal data of every politician, and entrepreneur, and journalist, and judge, and policeman, and military officer of this country - is held by somebody, for instance, in Silicon Valley or in China? Is it still an *independent* country, or did it become a kind of *data colony*? So, these are the immediate dangers


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that should be clear to any citizen, no matter what their views are on the long-term existential risks of AI.

Of course, progress brings not only *dangers*, but also *benefits*. Current technological progress is inseparable from the solving of socio-economic and ecological problems. It is commonly said that information is a powerful resource that can be transformed into knowledge and experience, into competitive advantage. And this was true for most of history, when there was very *little* information, and monopolists (whether they were shamans, magicians, high priests, or later - state censorship) acted by withholding information, blocking the flow of information. But *now* we live in a very different era, when we are bombarded with an enormous amount of information. We have too much of it, and we don't know sometimes how to make sense of it. And censorship works differently now, distracting people with too much information, irrelevant information, misinformation. In this age, *clarity* is more important than ever before, because we need to know what to focus on. *Attention*, *sincerity* and *trust* are becoming perhaps the most scarce resource among all those associated with the human mind.

Let's remember these two famous dystopian novels: Orwell's "*1984*", and Huxley's "*Brave New World*". But if we look at the way *information is treated* in these two different novels, we see that in Orwell's dystopia, information is constantly being brutally fabricated, rewritten, clipped. In Huxley's dystopia, the manipulation of information is more subtle: people are programmed from their birth, and their minds from the beginning are filled with *different* information, and each of the five castes is part of a single plan. A described system works in a manner that makes an *impression* that the system understands you, and appeals to your own passions and emotions. The system works in such a way as to make you feel that they are "on your side". It's not an old-style structure (like Gestapo, or KGB, or Stasi), because in many cases the system gives the lasting impression that it is benevolent.

However, if we talk about today's smart technologies, about artificial intelligence, in many cases these systems actually understand us *better* than many people do, and can improve our lives in many ways. And that is where the *temptation* lies. In some cases, it becomes especially obvious when we take as an example the health care system. Even today, advanced technologies capable of handling large amounts of data, recognizing photos, interpreting medical device readings, summarizing the information obtained, and evaluating symptoms; such systems *already surpass* the professional skills of a *single* doctor, and are comparable in their effectiveness to a whole council of doctors. Such systems make very accurate diagnoses with minimal error, due to causal machine learning (Richens et al., 2020).

Now let's imagine that a technology is developed that continuously monitors what's going on inside your body, and yes, it knows what's going on inside your body *better* and *more accurately* than your conscious mind. Because now, if people have a serious disease spreading through their body, very often people only find out about it when it's already a big problem, and when a person suddenly starts feeling pain without knowing what it is? So he (she) goes to the doctor, gets examined and analyzed, and then the doctors discover that a person has a serious disease, in an already neglected stage, and now it may appear very difficult, rather painful, and extremely expensive to cure it.

An alternative is a system that constantly *monitors* what is going on in your body and is able to *detect* that a serious disease is starting to spread in some part of person's body. When this serious disease is still in its early stages, a person doesn't feel anything, but the biometric sensors are already capturing the first clear signs that the problem is starting - when it's still easy, cheap and painless to get rid of.

It all looks great. So why would we want to block this kind of development? After all, the same analogy, hypothetically, could be applied to completely different cases when it comes to making many decisions in life. Starting with routine matters and ending with more serious questions: when to enter and exit a deal at the stock exchange? where to invest your money? what university to choose? what to study at this university? Because sometimes, with our minds, especially when we are young, we make very bad choices. And if artificial intelligence could have helped us do the right things at the past, it might have saved us a whole decade of our life. So the problem with AI and the deployment of all these technologies - is that here is a huge *temptation* of passing the rights of decision-making to AI by people. So the big question arises: how can we take advantage of the AI, extracting its possible benefits, without suffering harmful consequences?



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One more trouble is that right now we live in the situation, when simply disconnecting ourselves completely from all devices would mean losing competition to those who will *continue to use* such devices. Refusing to use technologies, either on an individual or a social level, will not work because then we will be missing out so many positive developments and perspectives.

In order to trace this *dialectic of progress*, we may simulate two scenarios. For example, right now, someone is wearing a ring, or a smart bracelet, or another gadget that is actually a biometric device, which measures bearer's heart rate, saturation level, blood pressure, various sleep states, blood glucose levels, and other parameters. And the person considers this gadget as a kind of *advantage*. By processing this data, an athlete can optimize his training, and an elderly person can maintain his/her health. This is an example of the *convergence* of information technology and biotechnology, which can affect the stability of our health, our quality of life, and our longevity.

But there is another crucial aspect: all this statistical information is just a part of the *big data* that is accumulated and stored on some server. Does the user of this gadget know *who exactly* is receiving the information this biometric device is collecting about him, and *what they are going to do* with that information? If, for instance, this kind of information is collected by a large corporation or some government, and we have no idea what they are going to do with it, in some cases it could have the darkest consequences.

Here is one of the gloomy scenarios: let's imagine that the action takes place not in an open democratic society, but in a totalitarian state, where these rings or bracelets are mass-produced, and every citizen is forced to wear these gadgets constantly, transmitting all information to a central database. Let's assume that while collecting all these indicators, this smart gadget is able to make an *interpretation* of all changes in person's physiological parameters: pulse, blood pressure, eye-pupils dilation or constriction, hormonal surges, including levels of dopamine, serotonin, endorphins, noradrenalin, cortisol - in other words, everything that tells complexly about some *emotional* state of an individual. He enters the room and sees the dictator's portrait on the wall, and the gadget on bearer's hand registers signs of anger, hatred, dissatisfaction, dislike towards the leader... The next stop is 'Gulag', or asylum, or prison... This is something like a pattern of anticipating the "enemies of the state" even *before* any action is taken. Not only before committing something, but even before you *think* of any real action being taken. It's a classical 'mindcrime', or 'thoughtcrime' (Orwell, 1941) made simply by spontaneous emotion.

If such a state observes enough of its citizens for an extended time period, it can easily build a typical profile of a rebel or dissident, and begin to "fix" their minds while they are still in kindergarten. Such a state does not need to wait for them to grow up - to pose any danger or inconvenience to the system. So if we want to dive into a dystopia, technology gives us a lot of options. We can only imagine what Stalin, or Mao, or Pol Pot would have done if they had such biometric technology back then. Artificial intelligence solves the problem of many dictators of the past: it used to be very difficult and expensive to keep surveillance on their citizens, just because you had to keep a large staff of wardens, secret police and other secret services. Now, *neural networks* can do this, quickly and relatively cheap. This is despite the fact that the current stage of technology is still in its early years, according to futurists. If the dystopian example, mentioned recently, begins to unfold, and such kind of societies turns out to be more technologically and militarily strong, this would mean *the end of humanism* as we understand it today.

Anyway, the newest technologies introduction will show a series of transformations (Harari, 2018). In terms of market forces, and the political landscape, and orientation in the world, and achieving career success, and earnings for a living, - all of this, apparently, will be changing. There are many issues that philosophers, psychologists, sociologists, lawyers, and economists will have to explore, including questions of *irrelevance* and *uselessness* arising from the technological revolution. If in the 20th century the main struggle was against *exploitation*, in the 21st century the main struggle may be against the "*irrelevance* of humans". People may find themselves simply *unnecessary*, and the struggle against irrelevance will be much more difficult than against exploitation.

We have no idea yet - what human life will look like - when *algorithms* make more and more decisions *on our behalf*. For thousands of years - religious, political, and artistic traditions have described life as a drama of decision-making. Whether it is a play by Shakespeare, a novel by Goethe, or Dostoevsky, or Márquez, a Hollywood comedy, or a book on theology, - they all tell of life as a kind of journey in which


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*we* make decisions at crossroads. We make simple and complex choices in our daily lives, choosing how to structure our day, what to eat for lunch, who to vote for, who to marry, what career to choose, who to fight against, etc. All this drama revolves around *making the right decision*. All previous history it has been the monopoly prerogative of a human. That was our *trouble*, and our *privilege* simultaneously.

At the same time, we are now entering an era in which the *automation gestalt* is developing at a crazy pace. And now there is a lot of talk about *jobs* and, probably in the near future, about *lost* jobs, but the problem is multilayered: it is socio-economic, geopolitical, psychological, and demographic. Let's take ChatGPT or its analogues. This technology is supposed to shut down a lot of current jobs, and leave a lot of people out of work, whose intellectual work can be automated.

Bu we need to look for examples in recent history. Do we recall what profession was very common and widespread in the pre-electric era? That was the job of torchmen, lamplighters, - people who were responsible for street lighting in the cities of Europe, later in America. And it was a *huge* business: sticks, tow (hemp fiber, or flax fiber, also called oakum), tinderbox (for making fire), oil, tar, later - kerosene, and kerosene containers. More than *three hundred thousand* people were employed in this torch-lighting industry, those who were in charge of the manual lighting and extinguishing of street torches, lamp-lights, lanterns in the evening and in the morning, and of course - those who were involved in the production of all the components. That is, there was a *torch-lighting* industry, and separately - a huge *candle* industry (Frederic Fournier's candle factory in Marseilles, at 1836, was the largest in the world).

But at some moment, in the late 19th century, Edison appeared in the United States with his improved incandescent light bulb. The invention of this type of electric lamps caused a devastating blow - both to the torch-lighting business, and to the candle industry. Within a few years, the majority of the torchmen lost their jobs, as their services were no longer needed in the maintenance of electric lanterns. But instead of *three hundred thousand* people employed in the city's torch-lighting business, there emerged an enormous electrical industry, which provided nearly *ten million* new jobs at the time. It wasn't just the production of light bulbs, but also electric wires, and building power plants, transformation units, power lines... it was not only electricians and installers, but also engineers, scientists, factory workers, and university professors who taught the sciences related to electricity.

The second example is even more illustrative: as we all know, about 150 years ago, the most important means of transportation was *horse-drawn* transport. And it was also a tremendous business: horses, carriages, chariots, phaetons and cabs, forges, horse fodder, stables and taverns, coachmen and cabmen, and so on. But horse-drawn journeys took too much time, so the evolution could not tolerate such slow movement in space. And then, 15% of the smartest coachmen realized that, with the coming of internal combustion engine, they should become *car drivers*. And so there was this kind of phase transition, leading to changes in related areas.

But perhaps it will not be like that *now*, because the *new technological transition* will happen too quickly, and will be many times more extensive? It would not be quite correct to extrapolate exactly from previous experiences to the near future, because technological progress is *not linear*. There is little we can say today for certain about the labor market in 2050, and how it will affect future generations. Of course, the most simplistic scenario is that robots will come soon, they will take all the jobs, and we will have nothing to do, except living on a so-called "unconditional basic income". And for *some* people in some countries that may be the case. In many countries today, the economy is primarily dependent on cheap manual labor from people working in workshops, at factories and plants with a low level of automation. And the economies of these countries may collapse or be seriously disrupted. At the same time, in other countries, such as the United States, South Korea, many jobs would disappear, but many *new ones* would arise.

The possible scenario has been brought up before, of textile manufacturing coming from Turkey, Mexico, or Bangladesh - back to technologically developed countries. Because now you may have 3D-printers and robots, whose labor is much cheaper than that of people in many developing countries. Now, conditional Bangladesh may appear in a big trouble, but in the U.S. you might even get *more* jobs (not in the field of handmade textiles). These new jobs might emerge in data processing or code writing, because the critical source in the nearest future textile industry development will be the personal data of customers, from the one side, and the software code used in manufacturing, from the other.



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After total automation of textile industry, producers will need a lot of *data* about their customers, and about what they want, i.e. their biometric parameters, their individual aesthetic preferences, their 'consumer portrait'. Then, producers will be able to create a shirt specifically for each particular customer's torso. You don't have to rely on mass production like in the days of the Industrial society. And you can "print" that individual piece of clothing somewhere in the United States, not far from your client or customer, and you don't have to bring it from Asia to USA in containers. But you really need well-trained people who deal with data - with *personal* data, and with *big* data. So there might be *new jobs* in the most technologically advanced countries. While the most serious socioeconomic problems caused by the loss of industries due to relocation will most likely occur in countries like Bangladesh. These are the places, which are most vulnerable to automation. And the profits from automation will go not to Dhaka, but to California, or Texas, or Vancouver!

The truth is that these jobs in developed countries will also gradually deal with automation and change very quickly. The situation in the global labor market will be extremely tense and unsteady. The automation revolution is unlikely to be a single major turning point, but will happen *in waves*, leading to the disappearance of many old type jobs and the emergence of many new ones. We will probably see a few years of turbulence, and then everything will come to a new equilibrium. And every 10 years or so, it will happen again. Because artificial intelligence is not even close to unlocking its full potential, - futurologists say. Recently conducted survey finds that scientists are concerned, as well as excited, by the increasing use of artificial-intelligence tools in their work (Van Noorden & Perkel, 2023).

So every 10 years we might lose our jobs, or our jobs will be completely transformed by a new wave of the latest advances in machine learning. And if we want to stay in the game, we have to *reinvent* ourselves repeatedly. As medicine advances and life expectancy increases, people will be retiring at older age from decade to decade. Thus, we might have to reinvent ourselves several times in the course of our life. Therefore, the idea of not only having *the same job for life*, but one *profession* for life, in most cases, is losing its former relevance.

Here we discover this relationship between *a human right to work*, a right to be engaged in productive employment, to achieve self-realization, on the one hand, and the *technological imperatives of the information civilization*, on the other, which requires much more sophisticated skills of adaptability, retraining, and qualification improvement, than it used to be. Some of possible measures for educational improvements were examined before (Borinshtein et al., 2022: 152).

Developmental psychology says: as you get older, your professional adaptability decreases. People from different generations have not similar abilities to adapt to technological change. Such features as endurance, adaptability, and emotional intelligence become overriding in ways we have never seen before, which brings into question our entire educational system. More and more often, across the globe, there are admissions that the education system has seriously eroded. It is not adapted to the realities of the 21st century. But we do not have a full-fledged alternative model; in fact, we need world-wide applicable solution.

Increasingly there is the following temptation: if *we* cannot improve it, let's take education out of the hands of humans, and put it in the hands of *algorithms*. But then we will have completely new problems. Some of them are still the legacy of human thinking, because people very often develop algorithms with their own human biases and prejudices embedded inside, and they don't even realize it.

There is a new concept named "algorithmic bias" (Baer, 2019), which may exist even when the algorithm developer has no intention of discrimination. Nevertheless, by carefully using extensive statistical data on the purchase of different kinds of services and goods by certain groups of users, the algorithm may end up recommending a particular product or service to a very homogenous group of consumers, and not recommending it to other groups (for example, recommending expensive colleges to potential white students, but not offering such a product to black, because statistically they are not considered solvent enough to buy the service like learning at expensive college). This *unintentional discrimination* stems from the analysis of big data, the effective processing of which allows to increase the average check, sales volume and conversion rate due to personalized offers that are created on the basis of knowledge about users.

In addition to the so-called "algorithmic bias," among the new type of problems is the fact that


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*the decision-making process* is becoming completely non-transparent to humans. And more and more power will be concentrated in non-human hands, in the hands of these algorithms. We are already seeing this happen, for instance, in the global financial markets, where so many transactions are made with algorithms by trading robots, i.e. artificial intelligence. And very often, even the best human experts cannot explain what is going on and *why* the algorithm offers this particular solution and not another.

We have considered only a fraction of those challenges, which humanity will face in the course of ongoing digitalization. But they are the most explicit and illustrative enough to help us realize the scale of possible problems, and the prospects for mitigating them. Perhaps these issues should become the subject of further research.

**Conclusions**

The 'digital age' has brought about numerous advancements, yet it has also introduced complex challenges into modern life. Contemporary *challenges* for human rights in the context of digitalization are mostly connected with data protection and security, privacy concerns, 'digital divide' and inequality, algorithmic bias and discrimination, unpredictable change of labour market, and excessive misuse of technological capabilities by authoritarian regimes.

Among the main *hazards* that digital technologies may bring, we suppose, several are the most probable. In particular, the collection, storage, and use of personal data by governments and corporations have raised reasonable concerns about the right to privacy. Technologies like facial recognition, biometric data collection, and pervasive surveillance threaten individual privacy rights. Balancing the right to freedom of expression with the need to regulate harmful content online poses another significant challenge. Cyber-security threats, data breaches, and the commoditization of personal data create vulnerabilities that can lead to violations of individuals' rights. Emotionally pre-trained neural networks could be used by non-democratic regimes to manipulate with individual consciousness and public opinion. 'Digital divide' finds its expression in unequal access to newest technologies, which exacerbates existing socioeconomic disparities between countries and inside them. Automated decision-making systems and algorithms can enshrine biases, leading to new types of discrimination in areas such as employment, education, housing, and access to services. We still have no comprehension of what will happen when the decision-making process overwhelmingly will be shaped by artificial intelligence algorithms, according to how algorithms understand the whole world. There's a risk of losing control over AI after a certain moment; so the danger is in the lack of transparency.

In order to mitigate these hazards mentioned above, some priority measures could be taken at government levels:

- countries, corporations, and international organizations should collaborate to establish common standards and regulations for digital technologies; it can facilitate a more consistent and effective global approach to reducing hazards associated with rapid evolution of this kind of technologies;
- governments should enact and enforce robust data protection laws that regulate the collection, storage, and use of personal data by both public and private entities;
- countries should invest in cybersecurity measures to be protected against cyber threats, data breaches, and unauthorized access; this includes regular security audits, encryption standards, and incident response plans to minimize the impact of cyberattacks (as for now, not AI itself, rather then 'bad human actors' are the menace to cybersecurity);
- ethical guidelines and standards for the development and deployment of artificial intelligence must be established;
- governments should encourage responsible AI use in public and private sectors; independent oversight and regulatory bodies must be established, to be responsible for monitoring the implementation of digital technology policies; these bodies should have the authority to investigate complaints, enforce regulations, and adapt policies to emerging challenges;
- algorithmic accountability must be ensured; society needs to introduce mechanisms that hold organizations accountable for the algorithms they use; this includes transparency requirements, audits to identify biases, and mechanisms for individuals to challenge decisions made by automated systems;
- governments have to allocate resources for research on the societal impacts of digital technologies, and invest in educational programs to increase public awareness; well-informed citizens are better equipped to


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understand the risks and benefits of technology, and participate in shaping regulatory frameworks;

- policies to reduce the 'digital divide' should be implemented, ensuring equitable access to technology and cyber-space; this may involve infrastructure development, subsidies for underprivileged communities, and initiatives to promote digital literacy.

Among the undoubted *benefits* of digitalization for human rights, we expect a comprehensive digital inclusion, protecting online freedoms, promoting digital literacy, fostering ethical and responsible technological innovation, and establishing robust legal frameworks that safeguard individuals' rights in the digital sphere. Mindful approach to AI deployment could provide us better life standards, education, healthcare and longevity.

The aim of every contemporary political system is to *comprehend* and *regulate* the explosive potential of technology, to provide *responsible governance* of technology. There is no any sense to talk about human rights and freedoms, unless there won't be designed safety protocols and some *reasonable limitations* for using AI-means and technologies until they're studied enough.

The implications of rapid digitalization for human rights, in particular, the impact of artificial intelligence on decision-making needs to become an object of a separate detailed study, which will continue our research on the phenomenon of digitalization.

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