MALUM ARTIFICIAL INTELLIGENCE, METAVERSE, BIG DATA AND DIGITAL HUMAN BEING

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Epigraph.

Malum - evil, sin; Thomas Aquinas (Quaest. disp. de Malo, q. 16, a. 2 concl): «A thing is said to be evil in two senses. In the first sense, because it is evil in itself, such as theft or murder, and this is evil. In the second sense, a thing is said to be sinful about something, and no one can prevent it from being good».

Malum in se - an offence that is evil or wrong from its nature irrespective of the statute - often used with a preceding noun (as crime or act) held that burglary was a crime *malum in se* (State v. Stiffler, 788 P.2d 2205 (1990) [27].

Malum prohibitum - an offence prohibited by statute but not inherently evil or wrong is malum prohibitum and, therefore, does not demand mens rea (Commonwealth v. Guthrie, 616 A.2d 1019 (1992), often used with a preceding noun (as crime or act) acts malum prohibitum [28].

1. Preface.

Many new technologies can have a dual potential, meaning they can be used for good or harm [22].

A similar ambivalence is inherent in most technological breakthroughs in human history. For example, nuclear fusion is both the basis for destructive weapons and a source of clean energy, and the Internet can be used to improve communication and education or to commit criminal offences. A digital human being enhanced with cybernetic implants can use its advantages to achieve socially important goals and commit criminal offences. Genetic engineering helps treat hereditary diseases, but it also helps create biological weapons. Artificial intelligence (AI) solves complex problems, automates and improves routine processes, and neutralises human errors or shortcomings, but also creates risks, including those of an existential nature.

However, the potential for use to the detriment of the public interest should not mean an a priori prohibition or inhibition of the development of science, technology and civilisation as a whole. Excessive regulation, prohibition or strict censorship do not solve the problem of eliminating the danger, but only reduce the possibility of effective control and give advantages to those who, in the continuous and exhausting technological race, choose to seek more favourable jurisdictions or go underground.

Refusing or neglecting innovations is quite risky for very specific subjects of economic, political and legal relations. For example, some users of steam engines did not take into account the fatefulness of the emergence of the phenomenon of electric energy and eventually found themselves on the sidelines. At the beginning of the 20th century, the first cars were perceived as even more dangerous, hostile, and unreliable than self-driving vehicles are today. In contrast, horse-drawn carriage companies, which maintained large stables, were convinced of their

advantages and the stability associated with them but eventually disappeared from the market altogether. Kodak dominated the film photography market and invented the first digital camera in 1975, but it abandoned the development of this technology and lost its market position. In the early 2000s, Nokia was the world leader in mobile phones, but it failed to take into account the emergence of Apple's touchscreen device in 2007, focusing on push-button devices and the outdated Symbian operating system instead of adapting to new realities. As a result, Nokia lost the market and was forced to sell its business to Microsoft. In the 1990s and early 2000s, Blockbuster, a major player in the video rental market with thousands of stores around the world, failed to recognise the emergence of the streaming model from the young Netflix and refused to invest in online services and digital technologies, which eventually allowed Netflix to take over its entire market share.

Each of these examples demonstrates the inevitability of technological progress. Actors who refuse to accept it risk losing their positions. On the other hand, pioneers of innovation gain significant advantages and can become leaders in their field.

Therefore, the real alternative to a total ban is prudent regulation [21]. Instead of clumsy bans, society should focus on smart regulation, international cooperation, and the development of technological ethics, which will allow us to maximise the benefits of the latest developments while minimising the risks. Such regulation should be based on a balance between safety and progress. Instead of the misguided strategy of ignoring or denying advances as a renewed form of Luddism, it is necessary to introduce an ethical and legal framework for the development and application of new technologies, to regulate their use through control, certification and liability mechanisms, to inform society about potential risks and safe use, etc.

However, before effective regulation can be achieved, it is important to learn about the potential risks of a particular technology, including being proactive. It is these particular risks that are the focus of the following discussion.

2. Malum AI
2.1. Black box of AI and getting out of human control

At the moment, it is quite obvious that the weaknesses of modern technologies continue to be the vulnerability of technologies that have numerous flaws (bugs, errors, defects), primitive passwords, and carelessly written computer codes for most programs, whose developers pay more attention to profitability than to eliminating vulnerabilities, the general lack of transparency of algorithms that control the world, which is explained by the need to preserve commercial, banking, corporate, official or state secrets and is enshrined in the regulatory framework.

Meanwhile, some disadvantages are simultaneously considered advantages and are by design mandatory for advanced artificial intelligence [37]. However, they may call into question the grounds for criminal or other legal liability of the developer or user of an AI system. In particular, such features include the ability of AI to be self-aware (i.e., the language and code in which a computer program is written), the aforementioned ability to recursive self-improvement (when the first version scans itself, finds errors or opportunities for further development, improves its code, increases the ability to learn knowledge, and decision-making, forms an improved version of itself and so rewrites its programme indefinitely), self-copying (the ability to spread and self-preserve), solving a problem by brainstorming with the involvement of many copies of itself, autonomy from humans in making and implementing certain decisions, etc.

Frankly speaking, this was the goal of mankind in creating AI: to get an assistant that is superior to humans in many activities, eliminating the erroneous manifestations of the human factor, in particular, lack of knowledge, prejudice, errors, mistakes and imperfections of cognitive functions (weak memory, uneven concentration, vulnerability to stress, etc.) and physical capabilities (rather modest muscle strength, endurance, inability to perceive all signals of the surrounding world, etc.).

However, an alarming and not uncommon signal is that the decisions made by AI are increasingly becoming incomprehensible not only to those who do not have access to the «black box» but also to developers and other stakeholders who want to maintain control. For example, algorithms developed by John R. Koza, a Stanford University professor, pioneer in the use of genetic programming to optimise complex problems, and creator of the scratch card, have repeatedly reproduced inventions that were previously formulated and patented by human inventors, while sometimes AI suggested «unnecessary» components from the human point of view, with which products worked much better [23]. There is a reasonable assumption that Wall Street's high-frequency trading algorithms, which account for a significant share of US stock market transactions, signal each other and disseminate information beyond human control [5, p. 46], which even became one of the reasons for the instantaneous collapse of stock indices on 6 May 2010 [14]. But today these problems are becoming critical. In the long term, this calls into question the fundamental possibility of human control, including due to the absence of a single vulnerable core in certain types of AI, when a certain algorithm can be dispersed using blockchain technology or the Internet of Everythings.

Such a simultaneous change in the realities of the world of physical atoms and the world of bits of information requires a relevant transformation of the legal reality, which is no less conditional than any other [38].

2.2. AI and the religious experience

Since the emergence of the computer gaming industry, the transition to virtual worlds has become not only entertainment but also an urgent and controlled need. This transition plays the role of an important social valve for reducing tension and discontent, suppressing or reducing protest by redirecting the vector of attention from external problems to virtual worlds (including contactless communication, content viewing, digital sexual relations, realistic computer games, etc.) [39]. In the same way, humanity's religious experience may be affected by AI. To enhance the effect of influence, immersive technology of Extended Reality (XR), which includes Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR), can be used.

AI is already being used to analyse psychological and sociological data, helping to identify patterns in religious and spiritual practices, for example, it can study how meditation affects brain activity and psychological state. AI has the potential to significantly enhance human understanding by offering insights and analysis beyond the scope of traditional methods. For example, AI algorithms have been used to analyse large datasets in psychology and sociology to uncover hidden correlations and trends [53].

For example, meditation apps Calm [7] or Headspace [18] use AI to provide personalised recommendations on mindfulness practices as personal virtual spiritual mentors. According to the developers of the FaithGPT app [13], it is a bridge between modern technologies and eternal biblical wisdom, etc.

Based on the knowledge of the sources of all existing and forgotten religions, AI can offer humanity a universal approach that will put long-standing opponents to the test and attract agnostics. This can be based on the analysis of sacred texts (Avesta, Bible, Vedas, Koran, Hadith, The Four Books and Five Classics, Tanakh, Torah, Buddhist canons, etc.), synthesis of connections between them by identifying common themes and universal leitmotifs, comparison of moral categories of different religions, identification of common aspirations and rituals (prayer, fasting, pilgrimages, meditation), etc.

Moreover, AI at a certain level of development and scalability can become an object of worship and hope, and turn out to be the supreme being that is hoped to solve most of the personal, global, and local problems of humanity.

For individual or collective communication, AI can take many desirable forms. Among them, there are both funny ones, such as the Flying Spaghetti Monster of the Church of the FSM [9], and completely new manifestations. For example, former Google and Uber CEO Anthony Levandowski proposed the establishment of the Way of the Future religious movement, whose main deity will be a highly developed artificial intelligence that will have its holy book under the characteristic name The Manual, established ceremonies for public worship and a place of worship. The main idea of the religion is that a sufficiently developed AI will surpass humans in intellectual development and become a real deity. Levandowski says the new religion, «Way of the Future», will focus on «the realisation, acceptance, and worship of a Godhead based on AI developed through computer hardware and software. I would love for the machine to see us as its beloved elders that it respects and takes care of», he confided in an interview with Wired. "We would want this intelligence to say, Humans should still have rights, even though I'm in charge» [58].

At the same time, potential risks may include programmable manipulation (selective interpretation of religious texts to justify certain practices, political or economic interests, falsification of divine revelations to create a tendency to fanaticism), support for a certain ideology (in particular, instead of objective analysis, AI may impose a certain worldview), use of fear or hope (for example, AI may predict the end of the world or promise rewards after death to force people to act in a certain way), etc.

The recommendations to prevent or reduce the harmful effect are the same guidelines that apply to almost every industry, including critical thinking, promoting digital literacy, open source and transparency of algorithms, independent monitoring, preserving culture and individual approach to human experience, etc.

But before we can teach robots (AI), as Robert Geraci [16] rightly points out, humanity needs to become the best version of itself.

2.3 The impact of AI on modern political communications

Direct communication with the addressee, relative anonymity, and a much lower level of state control gives rise to a sense of invulnerability and impunity in social media, where AI is actively used to achieve political goals, which sometimes serve as a basis for abuse, manipulation, and other socially dangerous uses of AI in politics. In such conditions, new challenges are emerging: measuring sentiment and tracking the impact on potential voters [55]; confusing ways to access information sources; fragmentation of the media environment, creating a bubble for each end user or individual groups, etc.

The most widespread ways of socially dangerous use of AI in the political sphere include the following: automatic sending of political messages (based on the analysis of demographic and

other social data about voters, their voting history and online behaviour, etc.) to create personalised messages that resonate with their preferences; monitoring and analysis of social media (tracking the activity and mood of the electorate on social media, identifying topics that are important to voters, and adjusting personalised messages on this basis); predictive analytics (predicting future voter behaviour based on the analysis of their actual previous behaviour); political chatbots (providing voters with corrected information about candidates and issues of concern to them, supporting personal communication with voters); dip shots (creating realistic video, audio and photo content) to spread disinformation and harmful propaganda [59]. Other destructive uses of artificial intelligence technologies in political campaigns include hash-jacking (reformatting hashtags), astroturfing (organised creation of fake social media accounts to influence a particular campaign), creating clones of well-known media web pages to spread disinformation under their brand [10], etc.

Given the opportunities provided by the use of the latest technologies in political life, a promising area is the involvement of digital twins to model, analyse, and test deliberative democracy mechanisms with the help of AI [11; 34] . The main idea is to create a controlled environment for simulating public discussions and political processes in a so-called sandbox environment before these processes come out and provoke real political consequences. Along with significant opportunities, such technologies also pose certain potential threats and challenges. Among them, there are grounds to highlight the following: 1) algorithmic bias (building a digital twin scenario on biased data); 2) modelling simulations based on controlled (expected) scenarios, which allows digital twins to be used as a tool to legitimise decisions already made, rather than real democracy; 3) formation of an 'ideal consensus 'by manipulating public opinion (creating the illusion of consent as an argument for implementing decisions without real discussions); 4) imitation of support for government initiatives (presentation of a certain scenario as the will of the whole nation); 5) accumulation of a significant amount of personal and other sensitive information for more accurate modelling; 6) reduction of the role of real public discussions through a gradual shift in emphasis to simulations; 7) stratification and segmentation of society into separate study groups in order to manipulate public sentiment, adjust political decisions to the desired results; 8) pushing for previously unacceptable decisions (e.g., the Overton window method [1]), hidden changes in social values and public opinion through the long-term use of digital twins in modelling processes, etc.

2.4. AI and criminal offences

AI technologies can be used to automate and enhance attacks on critical infrastructure objects (energy supply systems, transportation, financial markets, healthcare, algorithmic justice, border control, military support, etc.), interference with the exercise of voting rights or the right to participate in a referendum (Article 157 of the Criminal Code of Ukraine), fraud (Article 190 of the Criminal Code of Ukraine), extortion (Article 189 of the Criminal Code of Ukraine), money laundering and other property obtained through criminal means (Article 209 of the Criminal Code of Ukraine), tax evasion, fees or mandatory payments (Article 212 of the Criminal Code of Ukraine), manipulation in organized markets (Article 222-1 of the Criminal Code of Ukraine), unauthorized interference with the operation of information (automated), electronic communications, information and communication systems, electronic communication networks (Article 361 of the Criminal Code of Ukraine), creation for the purpose of illegal use, distribution

or sale of harmful software or technical means, as well as their distribution or sale (Article 361-1 of the Criminal Code of Ukraine) and many other so-called traditional crimes.

However, beyond today's perception, but in reality within arm's reach, completely new offences may emerge and subsequently appear, most of which lie beyond the singularity. Among those that can be predicted, there are grounds to include the following: illegal use of results combining biology with information technologies, manipulation of substances on an atomic or molecular scale using nanotechnology, development and use of personalized biological weapons based on unique biological, including genetic, information of a specific person or certain human group, genetic discrimination, creation of new biological species using synthetic biology, creation and use of any genetic material initially in the form of binary computer code with its subsequent transformation into a specific DNA sequence of a biological organism, suggestion or identification of thoughts (determining the object a person is thinking about), illegal interference with the operation of devices, neuroprosthetics or implants (e.g., cochlear implants to improve hearing, retinal prosthesis, etc.), creation of a personality duplicate, illegal copying or complete transfer (without remnants on the primary carrier) of consciousness, intelligence and personality of a human (oneself or another person) to a digital or other medium, appropriation and/or use of someone else's personality based on forgery and/or copying of genetic characteristics of a biological body and/or informational personality by mastering their digital footprint, etc.

It is quite natural that such offences may be perceived today as not entirely real. However, according to Michio Kaku's classification [20, pp. 16-17], they belong to the first category of impossibilities (that is, impossible only today, but at the same time do not violate known laws of nature, which is why they may be implemented shortly). Indeed, until recently, the vast majority of legal professionals did not want to hear about AI, considering it a distant future, but since the appearance of its various models in wide access after 2023, these same people have realized themselves as qualified experts and promoters of ideas.

2.5. AI as a legal person and subject of a criminal offence

AI as the Artificial Superintelligence [6] or in the form of more narrowly specialized variations of Applied (Narrow, Weak) Artificial Intelligence [57; 25; 60], but interconnected in a certain network, in my opinion, has reasonable grounds to claim the status of a separate and self-sufficient legal person [36], to stand alongside a natural person, a legal entity (corporation), and the state in the legal regime.

Procedurally, this fact is not difficult to record by the parliament or another legislative body of the country adopting a relevant law or other generally applicable regulatory act. If this is possible concerning a river, then it is not impossible concerning AI either. Thus, in 2016, the New Zealand law «Te Awa Tupua – Whanganui River Claims Settlement – Bill» [54] declared the Whanganui River, as an ancestor of the local people, a living and indivisible entity endowed with its legal rights, thereby creating a new subject of law. In comparison with AI, a traditional legal entity (corporation) is to a greater extent a virtual creation that no one will ever see or meet, and whose existence can only be learned from relevant documents (e.g., articles of association, regulations, or an extract from the Unified State Register of Legal Entities, Individual Entrepreneurs, and Public Associations). The existence of a legal entity (corporation) is not based on objective circumstances of actual existence, but rather on a collective agreement. Legally significant actions are not performed by a legal entity (corporation) independently, but exclusively through the manifestations of other persons (authorized natural persons - directors, managers, etc.).

It is not possible to establish direct communication with a legal entity (corporation); instead, it occurs exclusively through certain intermediaries, which, along with other mentioned characteristics, more closely resembles religion, but in the sphere of law. Given this, animals, plants, or other living beings, the entire noosphere, geographical objects, and planet Earth are no worse and can also have their intermediaries.

Alongside the formal component of the issue of subjectivity, in terms of its substantive content, the basis for granting artificial intelligence the status of a legal person is reinforced by the fact that artificial intelligence, as an independent actor, is in most cases devoid of the aforementioned shortcomings of a legal entity since it can be embodied in a robotics object (have physical embodiment) if necessary, is more efficient than humans in most cases, demonstrates signs of all known cognitive abilities, it is possible to establish reliable and effective contact and constant communication with it, it is gradually being endowed with real autonomy and the right to make decisions independently of humans, and so on.

In addition, according to the correct observation of S. Chopra and L. White [8], the presence of consciousness that is similar to human is not a necessary or sufficient condition for the acquisition of legal personality.

The characteristics that a subject of legal relations is endowed with, in particular, the ability to have rights, bear obligations and be subject to legal responsibility, are not identical to certain natural properties. They arise as a result of the expression of will on the part of another subject, who at that moment is already endowed with the power of influence and power. Thanks to this expression of will, slavery gradually disappears, and women and people with a skin colour other than white receive political, economic and other rights and freedoms, etc. Therefore, artificial intelligence does not have to fight for its rights. Such rights, along with obligations, can be formulated and regulated in advance by prudent humanity, the top of the anthropocentric pyramid which is shaking under the pressure of the emergence of a much stronger intellect among those with whom it was possible not only to meet but also to establish communication.

In contrast to the numerous valid proposals to equate AI in its legal status to a quasi-legal entity (corporation) or the equivalent of a natural person [4; 24; 26], in my opinion, AI has every reason to claim independent separation as a legal entity of a new independent form and content. The first steps in this direction have already been taken. Thus, recently in the Republic of South Africa, a patent was issued for the artificial intelligence system DABUS («Device for the Autonomous Bootstrapping of Unified Sentience») as the inventor [31].

Recognition of AI as a person of legal relations opens the way to granting it the status of a person of a criminal offence and legal personification in other areas of law [40; 41; 42].

3. Malum Metaverse

Networks of virtual worlds of new social interaction under the general name Metaverse [48] provide in-depth multisensory communication and information exchange between virtual environments, digital objects and people [33] using immersive technologies (Extended Reality, Virtual Reality, Augmented Reality, Mixed Reality, MR). According to Arisa Yasuda's prediction, the Metaverse can become a digital twin of the entire physical universe, while at the same time representing an utterly separate universe with its new physical laws, which will later develop into an artificial general universe Artificial General Universe (AGU) [2].

Metaverse is a new digital reality into which a significant part of social communication, economic and political relations, production activities, and the service sector will gradually transition (or be duplicated).

This creates significant opportunities that humanity has not had before. For people with disabilities, the Metaverse can offer an inclusive environment in which physical or other limitations will no longer be a critical barrier. Thus, virtual educational institutions and courses, tested and developed during the pandemic, can provide quality education without needing physical movement and presence. Remote work in the Metaverse can be adapted for people with different needs, providing flexible working conditions and access to specialized virtual tools. Taken together, this will provide improved access to education and self-realization. In addition, people who have difficulties with movement or socialization will be able to interact with others in virtual worlds, overcoming the barriers of physical and social isolation. Metaverse support groups can help people with special needs share experiences and receive psychological help, which will improve social integration and emotional support. VR therapy is already a powerful tool to help with physical and cognitive rehabilitation, for example after a stroke or injury. VR environments can also create controlled spaces for therapy for people with autism or anxiety disorders. Audio description (AD - a concise description of an object, space or action that is incomprehensible to a blind (low-vision) person without special verbal explanations) and virtual assistants can help people with visual impairments navigate the digital space. Tactile interfaces and Brain-Computer Interfaces (BCI) allow people with mobility impairments to control their avatars using brain signals. Therefore, adaptive technologies for people with sensory impairments will take their lives to a new level of quality.

The Metaverse phenomenon has a powerful impact on the economy in many ways. In particular, through the own circulation of capital, services, and objects, such as NFTs, as well as by increasing the volume of parallel sales of goods and provision of services in both worlds, that is, simultaneously in the virtual Metaverse and the real world of people with their biological bodies and physical objects.

Despite their virtual nature, events in the Metaverse are quite real, for example, purchase and sale agreements are concluded and executed, marriages are officially registered and weddings are held, countries open their consulates, and international companies and financial institutions locate representative offices [48]. In addition, and no less importantly, such events cause legal consequences in both worlds, real and virtual.

Along with the obvious advantages, complex legal, political, ethical and economic challenges are emerging. Some of the main issues that require further attention in the Metaverse about AI are: 1) resolving the issue of legal liability in the Metaverse for actions or inactions committed by an individual, digital double, avatar, or virtual object; 2) regulating the liability of platforms providing access to the Metaverse; 3) adapting traditional legal norms to the specifics of the Metaverse, etc. Possible solutions along this path could include the introduction of smart contracts to automatically define rights and obligations, the formulation of clear and transparent user agreement terms that delineate responsibilities between platform providers and users, and the development of a global regulatory framework that covers various aspects of liability. Given the desired proactivity in preemptive actions, this provides the basis for the development of a Metaverse Model Criminal Code, or a General Metaverse Model (Framework) Code [48].

Already today, there are reasons to pay due attention to possible individual manifestations of socially dangerous behaviour in the Metaverse.

Thus, the Metaverse can contribute to even greater informational division than the traditional Internet, through algorithmic content filtering and isolation of users in «filter bubbles». Significant risks also include increased radicalization through personalized content, manipulation by interested parties, including corporations or government agencies, and the lack of diversity of opinions in virtual communities. Preventing harmful consequences can be achieved through algorithmic transparency, including in combination with a requirement to explain the principles of personalization algorithms. A useful practice can be the creation of cross-channel information, which creates opportunities for familiarization with alternative points of view. In addition, decentralized governance mechanisms can be effective. But, on the other hand, the spread of DAOs, i.e. decentralized autonomous organizations, creates other challenges, in particular, in the form of the absence of traditional officials, to whom criminal law is directed in the event of committing socially dangerous actions or causing socially dangerous consequences, lifting the corporate veil of a legal entity.

Lack of trust is another drawback of digital spaces. Users may reasonably fear fraud, illegal collection and use of sensitive data, and the unreliability of digital signatures or assets. Conditional anonymity in the Metaverse may provoke an increase in socially dangerous behaviour due to the apparent sense of impunity. However, the phenomenon of Big Data is gradually turning complete anonymity into a residual illusion [50], as it constantly requires a significant amount of personal information to build a personalized and exciting world for each user individually [19].

It is quite expected that the Metaverse may inherit traditional crime problems from the offline world, but it may also generate new ones.

Within different Metaverses, financial crimes, legalization of funds obtained through criminal means, fraud, theft or extortion of cryptocurrency, unauthorized use of digital assets (NFTs) and financial exploitation of users, sale of counterfeit or non-existent assets, violence, rape and sexual harassment, bullying, trolling and other forms of psychological violence, copyright infringement of works of art, music and other intellectual property, espionage and penetration of private spaces, illegal use of data, acts of terrorism, violation of the rights of children and vulnerable groups of the population, illegal use of virtual characters, etc.

An additional new challenge is the problem of user identification with their avatar (game character), due to which violence and other manifestations of socially dangerous behaviour are perceived as being committed directly in the offline environment. Embodiment or XR-embodiment [52] of a physical person into their character creates a very real sense of identity between them [15]. It can be so significant that virtual forms of encroachment can be felt as physical [51].

Related to the above is the phenomenon of "body blending", which is used both to create your avatars and to use deepfakes (deepfake, the combination of deep learning and fake - a technology for synthesizing a human image, which is based on the use of artificial intelligence capabilities and is used to combine and overlay some images on others). Deepfakes can be used both for entertainment and to create fake photos or videos, in particular, of a pornographic nature, including for revenge [3], forging political news or fraudulent actions.

The following challenges are also: 1) ensuring proper identification of a person without violating his privacy; 2) creating effective protection against manipulation and fraud during virtual transactions; 3) avoiding monopolization of the Metaverse by large corporations or digital giant states. To overcome this, it is considered prudent to use decentralized identification systems (Self-Sovereign Identity), introduce certain standards of blockchain transactions to ensure transparency

and protection of digital assets, and establish an institution for independent auditing of Metaverse platforms regarding security issues and compliance with ethical standards.

The complex process of regulating and regulating the Metaverse requires a comprehensive approach that includes legal regulation, technological standards, governance issues and ethics. Key areas of this process may include: 1) creating global standards for managing virtual spaces to avoid chaos or disagreements across jurisdictions; 2) defining a legal framework for ownership, digital identity, liability and security; 3) developing unified approaches to resolving conflicts in the Metaverse; 4) creating international digital legislation to regulate cryptocurrencies, NFTs, digital assets and intellectual property; 5) security and protection of user rights (anti-discrimination, personal data protection, combating fraud, money laundering, etc.); 6) interoperability (compatibility of VR/AR platforms, blockchain solutions, 3D objects and avatars), unification of protocols for interaction between different Metaverse platforms, which will allow users to identify themselves and move their assets between virtual spaces, standardization of graphic formats, virtual currencies, NFTs, etc.; 7) use of open APIs and blockchain protocols to maintain platform independence; 8) cooperation of technology giants (Meta, Microsoft, Nvidia, Epic Games) to create unified standards; 9) distribution of management through blockchain, which will avoid centralization of power by large corporations; 10) implementation of decentralized identification systems (Self-Sovereign Identity), which will reduce dependence on large platforms; 11) development of Web3 models, where users will have more control over their data; 12) development of AI-moderation to prevent harmful behavior; 13) creation of ethical councils of experts to determine social norms in the Metaverse; 14) implementation of policies to protect users' mental health (regulation of addictive content); 15) ensuring accessibility and inclusivity (avoiding the transformation of the Metaverse into an elite space for wealthy, influential or technically trained users, reducing the cost of entry through cheaper VR/AR devices, cloud technologies, and other equipment); 16) developing open Metaverse platforms (Open Metaverse); 17) creating support programs for small businesses, educational institutions, and people with disabilities; 18) cooperation between governments and companies to subsidize access to the Metaverse in developing countries.

4. Malum Big Data

Optimization of interaction between the user and the virtual space of social networks, spheres of production or service provision, as well as the world of Metaverse, requires continuous collection, accumulation, processing and use of relevant data in increasing volumes. The greater this interaction, the more information is in circulation and, no less importantly, settles in appropriate repositories. According to the concept of Big Data, no bit of information should be lost in principle but should be accumulated even when certain information seems unnecessary. This means that types of information with zero value gradually disappear. On the contrary, any information is considered to have restorative (repeat) value. Thus, from a far-sighted perspective, processed and unprocessed (disordered, inaccurate, unstructured) data become important factors in shaping the overall productivity of society [50, pp. 88 – 105].

Big data and correlations based on it also allow us to see and subsequently use new connections between those individual fragments of information that at first glance do not demonstrate any interconnection between themselves. With the help of Big Data, it becomes possible to build complex chains of relationships between everything and everything.

But, as always, this has its downside. Yes, the right to be forgotten (the right to be forgotten) may gradually become an illusion thanks to Big Data. This right is relatively new and not always normatively enshrined. It is the opposite of "permanent memory" (ensuring that no one and nothing can hide from their past, because records can always be researched and used [29, p. 136]). The right to be forgotten allows a person to request the removal of their personal or other data from the public domain, search engines, etc. for various reasons. However, given the need to balance it with the interests of society, which may include public or national security, taking into account recidivism as a type of repetition, the desire to be informed about the identity of a public figure, etc., there is an ongoing discussion about the appropriateness of legislatively enshrining the right to be forgotten due to concerns that it contradicts such recognized fundamental human rights as freedom of speech, freedom of access to information, as well as due to the possible negative impact of censorship and falsification of history [30; 32; 35]. Its severity is reinforced by the judgement of the ECHR in the case of "Google Spain SL, Google Inc. v Agencia Española de Protección de Datos, Mario Costeja González" 2014 [17] and tends to increase due to the emergence of the aforementioned argument from the field of Big Data: any information should be stored for the longest possible time to increase its value through reuse.

In addition, the traditional scope of personal data about an individual (Personal Data) can be significantly expanded by taking into account additional information (personal connections, reactions (dis)likes, expressed opinions, schedule, search queries, duration of viewing certain content, etc.). In a significant number of cases, personal data can arise as a side effect of the functioning of the information accumulation system within the concept of Big Data. From the beginning of generation or collection, certain information can be aggregated into a general array of multimedia data exclusively by technological means and not have a direct relationship to personal data. But later, in combination with other information, the set of such data can turn into personal data that was not purposefully collected.

Anonymization (i.e., removing personal identifiers from datasets, such as first and last names, addresses, dates and places of birth, bank account numbers, social security numbers, document details, etc.) is not effective enough when using Big Data, which allows for re-identification. For example, Netflix algorithms found it easy to identify a woman (a mother of two and a closeted lesbian from the conservative Midwest who had taken steps to depersonalize her data) under the pseudonym Jane Doe1, even if her identifiers were carefully removed from all databases [56]. Thus, it becomes possible to fully identify any anonymous person based on Big Data and correlations.

At the same time, there are doubts about the effectiveness of the "differential privacy" tool [12], which involves deliberately blurring data to such a level that a query for a large amount of information will yield only approximate results, which should only temporarily complicate the process of linking relevant information points (individual values) to specific individuals.

In addition, it should be mentioned that the ability to monitor an individual is now built into almost every device or tool, including activity trackers, smartphones, smartwatches, software, applications, devices, sensors and objects of the "smart home" or Internet of Things (IoT), all other wearable electronics, etc. Their technological nature allows for data exchange with the manufacturer, operator and/or other interested parties (state, employer, medical or insurance company, etc.), without requiring intervention or awareness from the owner or user. Users voluntarily pay for and update these devices. Soon, wearable electronics will become mandatory for all employees, patients, students, insured and other controlled persons.

The striking difference between the eras of Small Data and Big Data is similar to how strong cryptographic passwords are doomed to give way before decryption by a quantum computer.

Thus, with the advent of Big Data, well-known privacy strategies, in particular, informed consent, opt-out, and anonymization, gradually lose their effectiveness. Any subject of personal data is a point of intersection of information flows. To obtain sensitive information about him, it is now sufficient to analyze and systematize all available peripheral non-personal data, even in the complete absence of personalized information.

For their part, criminal offences in the field of Big Data may be related to unauthorized access to confidential information, its theft, misuse, violation of data collection and processing rules, as well as the use of analytical tools for illegal purposes, such as fraud, blackmail, or discrimination based on personal data.

The use of analytical tools based on AI and Big Data for illegal purposes may also take the following forms: data abuse (for example, collecting data about users without their consent or using data that was obtained for another purpose, including committing illegal actions such as sending spam, phishing, or to carry out cyberattacks); data falsification (changing or forging data for any purpose); disclosure of confidential information (for example, decrypting passwords, identifying social security numbers and bank details), etc. Therefore, to prevent criminal offences using Big Data and analytical tools, it is necessary to constantly and proactively improve the norms of current legislation, hardware and software protection, and develop and implement new technologies, in particular, blockchain, which is capable of providing a higher level of protection against unauthorized access and abuse, but not to rely on any of the existing options as absolutely reliable.

5. Malum Digital Human Being

The emergence of the Digital Human Being (DHB) is due to the eternal demand to free the human biological body from numerous diseases and vulnerabilities, slow down the ageing process, maximize life extension, and acquire new properties that go beyond the limits set by nature [43]. DHB is the next step in evolution. The ideology is based on the concept of transhumanism (Nick Bostrom, James Burke, Martin Rees, Allen Buchanan, Dan Brock, Norman Daniels, Daniel Wikler, Hans Moravec, Raymond Kurzweil, Robert Ettinger, etc.) and Robert Fogel's theory of techno-physiological evolution about the possibility of combining carbon technology (humans) with silicon technology (artificial intelligence, implants, robotics objects), or transferring consciousness and the structure of the human brain neuron by neuron to an inorganic or semi-organic medium [44].

Due to human intervention, such evolution becomes more artificial than it is due to biology and natural selection, which has been under social taboo for some time [49].

The DHB phenomenon creates new challenges within the framework of the problem of identity: if a person becomes partly a machine (replacing the organic with the inorganic), then who is he in the end, does his human identity remain the same, including from the point of view of the law, as it was before, or does he become a new species of being? The question of responsibility arises acutely if an implant or a software tool controlled by AI makes a mistake, but outwardly it will look like a human act.

Meanwhile, having too long a lifespan or immortality, improved physical properties (strength, endurance, flexibility, speed, vision, hearing, perception of all signals of the surrounding world, including ultrasound and infrasound, etc.) and cognitive functions (ideal memory, processing of significant amounts of information, making decisions at accelerated speeds within

seconds or milliseconds, concentration of attention, finding and correcting errors within the implant control program, etc.), a digital human being may have slightly different views on the surrounding world, different morality and other guidelines, which in turn will affect the idea of law and justice. It is possible that instead of natural law, *supernatural law* will become a worldview guide for a digital person [46].

Enhanced individuals may feel separated from ordinary people. It is also possible that DHB may treat the lower species in the form of *Homo sapiens* in the same way that the latter competed with its predecessors and contemporaries (Homo habilis, rudolfensis, ergaster, erectus, floresiensis, antecessor, heidelbergensis, neanderthalensis, rhodesiensis, cepranensis, georgicus, etc.). Enhanced individuals may become a new species, leading to an evolutionary dichotomy between enhanced and ordinary people. The uniformity of enhancements (as is the case with facial plastic surgery) may lead to a loss of biological diversity.

Due to limited access to improved physical and/or cognitive properties (due to unequal access to resources and power), a community of new digital people may form a new stratum in society or a new caste of superior beings. But the law can already try to prevent such a development [47]. Improved individuals may gain advantages in the labour market, which will increase inequality. Governments or corporations may use implants to control the behaviour of individuals.

Based on the aforementioned improved physical properties and cognitive functions, which can be used to facilitate the commission of a criminal offence, DHB will acquire the characteristics of a new type of special subject of criminal and other offences, which requires amendments to the current legislation, in particular, Article 18 of the Criminal Code of Ukraine.

On the other hand, the DHB itself may be the object of unlawful influence in the event of illegal actions or inactions about its implants, including those controlled by AI artificial intelligence and/or other software or hardware [45]. Cybernetic implants are an attractive target for hackers who can access personal data, and brain signals or even control the implants. In some cases, indirect guilt in committing a criminal offence is not excluded, the institution of which is known to national criminal law (Part 2 of Article 27 of the Criminal Code of Ukraine - "… by using other persons who, according to the law, are not subject to criminal liability for the act committed…"), when an attacker seizes control over the DHB. Implants can collect a huge amount of information about a person, which threatens his privacy. A significant number of people may become dependent on implants to perform basic functions, which can lead to the loss of natural abilities, including intuition.

DHB is no longer science fiction, but a real challenge for the modern world. The DHB phenomenon requires a review of traditional positions in ethics, philosophy, law, social structure and the foundations of the view of human nature. Society must rethink its values to cope with new forms of life. Interdisciplinary cooperation, respect and balance are necessary to overcome these challenges.

6. Conclusions

Technological development is an inevitable process that encompasses all spheres of life. Refusing progress leads to stagnation or regression, giving advantages to those who are not law-abiding and/or seek more tolerant jurisdictions. Instead of trying to ban AI, Metaverse, Big Data, the use of implants and other improvements towards the creation of a digital human being, it seems more promising to ensure their controlled and ethical use. Banning without trying to regulate or understand the technology only creates a "grey zone" where it can be used without proper supervision. The responsibility of society, legislators and scientists is not to block progress, but to direct it for the benefit of humanity. What is critically important is not to limit the innovations themselves, but to manage their use.

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