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Big data, inferred data and the future of remaining human – between abdormission¹ and horripilation²

Abstract

Cyberspace as a virtual venue for communication and information offers its users potentials the consequences of which can be debated from different angles. The critique coming from respectable professional sources highlights some of the risks in the system. Cyberspace has accelerated a fundamental transformation in consumption and increased the use of digital services. It reinforced digital business models' dominant position at the expense of more traditional businesses. Tech giants showed how vital is big data and inferred data derived from the Internet users' activity. Today hardly anyone can ridicule or dismiss as bizarre stories of censorship, malevolence, manipulation, fake news, fraud or actions of distinct ideological flavour. Hardly anyone mentions the fate of the human being who has drifted into the domain of illusion.

Key words: cyberspace, Artificial Intelligence, the Internet, surveillance, behaviour, democracy, profiling, blockchain, the human being

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1 Abdormission – that feeling of dumbness when an arm or leg has “gone to sleep”. The pins and needles you feel when the limb comes back to life is officially termed parenthesis.

2 Horripilation – goose bumps, your hairs standing up on end due to the cold, a scary story or a theme song/hymn or a horror movie.

We are the free source of raw material hardly able to democratically confront excesses of raw capitalism. Surveillance capitalism aims to modify human behaviour towards corporate's ends. Behaviour modification is a pernicious action and it is a complete defiance of democratic principles. It took just twenty years without us saying "no", without noticing what is going on. We are on a straight path to a dystopian society open to local as well as global actors – nation-states and non-state actors.

It all is entangled in cyberspace³. There remains a galore of myths of different nature about cyberspace which needs to be clarified somehow, though for the purpose of this paper, out of necessity, they take the form of soundbites rather than full-fledged explanations stemming from mathematics, physics and other related sciences. They help identify the inherent flaws that stem from incorporating Artificial Intelligence (AI) base technology unreservedly. Some of those clarifications state that: 1) cyberspace with its emergent complexity is trivially simple vis-à-vis real life; 2) cyberspace can run into disorder due to hacking as well as without it; 3) cyberspace disorder can be emergent and non-predictable; 4) cyberspace cannot mimic any sustainable system of life; 5) cyberspace is fundamentally unreliable, which will be observed with an increasing complexity of the system; 6) cyberspace is likely to be a next arena of spectacular catastrophes similar to natural disasters.

Some misunderstandings of the above have a direct implication on cybersecurity, law and liability, democracy and the human existence. The creators of the Internet claim that the Internet has ceased to be a force for good, and its dysfunction is heading towards a dystopian system. One cannot understand what cyberspace is without a mathematical description. One cannot understand what AI is without a mathematical description. One cannot prove anything unless you have a definition. Needless to say that even having a definition is not sufficient to be able to understand the problem.

We do not have the definition of AI and in some way AI seems to be an oxymoron. We are a long way from understanding intelligence and consciousness and how does the brain orchestrate consciousness. Intelligence needs understanding and understanding needs awareness. AI, as much as we know it, hardly resembles awareness, understanding and intelligence. AI is confined to computation and algorithms. We are given to believe that

3 Cyberspace – the term is attributed to William Gibson, a science fiction writer who used it in his short story "Burning Chrome" (1982) and in a 1984 novel "Neuromancer".

AI will replace the human being in many respects and in certain cases it will replace the human being completely. This is perfectly possible provided we do agree to a reduced form of the human existence. Someone asked quite a popular question: Can machines (AI) ever behave like the human being? Only the opposite is quite possible. Yes, the human being can be reduced to mimic AI. Unfortunately, this could mean a direct assault on human autonomy, on decision rights, on the whole notion of individual's sovereignty.

The first prominent review of academic research in Artificial Intelligence was conducted by Lighthill and published in 1973⁴. Lighthill was highly critical of basic research in foundational areas such as robotics and language processing, which led to an AI winter, a period of reduced funding and interest in AI research. According to Freeman Dyson⁵, who died early this year, little if nothing had changed in those sceptic conclusions since then. Fortunately such scepticism should also be seen as something optimistic for the human being whose brain is still a mysterious and little understood organ that works like an analogue computer⁶ rather than a digital computer.

The digital frenzy prompts that sky is the limit and that beyond the horizon lie unexplored and unlimited possibilities and capabilities of transforming us into trans-humanity. Under the label of an undefinable notion are disguised ideas and projects which for some reason need to be kept far from people's awareness and comprehension.

The cyber threat landscape is shifting in real-time. The countries face threats from a growing set of sophisticated malicious actors who seek to exploit cyberspace. Nation-states continue to present a considerable cyber threat. But non-state actors are emerging with capabilities that match those of sophisticated nation-states. The government must think beyond the defense of specific assets – and confront systemic risks that affect everyone from tech giants to homeowners. The government must better align our existing law enforcement efforts and resources to address new and emerging challenges in cyberspace, to include the growing use of end-to-end encryption,

4 James Lighthill – Artificial Intelligence: a General Survey, in Artificial Intelligence: a paper symposium, Science Research Council.

5 Freeman Dyson (1923–2020) – an English-American theoretical physicist and mathematician and the right word for doing science and being creative in his case was the word 'subversive'.

6 In 1981 at Andicott House two mathematicians, Marian Pour-El and Ian Richards from the University of Minnesota showed a complete mathematical proof that analogue computers are more powerful than digital computers.

anonymous networks, online marketplaces and cryptocurrencies. There emerged disruptive financial innovations, disruptive business models⁷ and disruptive political organizations⁸ the scale of which would not be possible without cyberspace. Harm in physics can be onetime. Harm in medicine, biology, social harm due to utopian ideologies and their proposed solutions can become unimaginably big. It is very difficult to imagine things hitherto unknown. Imagination plays a crucial role not only in physics. Imagination requires traineeship and confrontation and the latter is constantly pushed to the corner of the ring by silencing, professional alienation, censorship and even punitive measures. It seems that governments need better reliance on competitive advisory bodies rather than a narrow bench of experts in order not to cook a hidden cost for all called fragility causing true system collapse.

Almost unnoticed we are subject to corporate surveillance, the development of which impacts the essence of human life, and its basic social structures, including the state. This issue so poorly addressed by lawmakers requires the awakening if we are still to adhere to the principles of free will, free market and democracy. We are faced with digital totalitarianism in which it is difficult to answer the question “Who decides what you decide?”, once we shifted democratic decisions to machines and surveillance capital. We are balancing on the verge of post-democracy and post-politics unreservedly delving in sharing economy and sharing cyberspace. Private surveillance capital has institutionalized asymmetries of knowledge and it translates into asymmetries of power. Imagination is more important than knowledge. Knowledge is limited to what we know and understand today whereas our imagination goes beyond to even what we will ever know and understand. Dealing with ideological constructs requires more of imagination beyond

7 For example sharing economy based on scale and extremely big capital, the Decentralized Autonomous Organizations (DAO), the unicorn start-ups (the term used in the venture capital industry to describe an entity with a value of over \$ 1 billion.).

8 Antifa – the disruptive and distributed movement connecting people in various countries seemingly with no organization behind, whereas in fact being well-funded by individuals and hedge funds making money in highly speculative and disruptive transactions in whatever instrument traded. It is firmly positioned in the academic world. It conducts traineeships and lessons based on syllabus how to conceal identity, how to encrypt communications and how to employ digital security according to the same tactics and the same principles. Their communication is similar to secret agencies, rooted in dark web ready for calls to rally, demonstrate, disrupt, loot and violate law almost instantly in any place. They are able to create a flash mob in any major city.

today's horizon because history showed that the creators themselves may not be able to foresee the far-distance consequences of their own creations.

It is important to not conflate the language of cyberspace which we do invent with the structure of cyberspace which we discover. The ever-increasing complexity of cyberspace emerging from two conflicting forces of fractal expansions, according to the Feigenbaum constant 4.66920... and fractal dissipation, according to the Feigenbaum alpha constant 2.5029... is bound to produce structures and problems arising from those structures which will be a new experience for anybody wanting to tackle them. In other words, the list of problems is bound to be longer rather than shorter. It contains mathematics, sophisticated mathematics, and to tackle those problems in a commendable way, succeeding in communicating the issues to a wider public, is really a big challenge. One should be aware of humanity's place in the Cosmos and the opportunities and risks associated with AI.

The security expert Bruce Schneier⁹ wrote that surveillance is the business model of the internet. Blockchain shifts some of the trust in people and institutions to trust in technology – the cryptography, the protocols, the software, the computers and the network.

Human intelligence has advantages over automated and computerized analysis and increasing the amount of intelligence data that is gathered does not help to improve the analysis process¹⁰.

Corporations do more than needed for service improvement. Surveillance is not restricted to online activity but it is conducted in the spheres we might never will to disclose, like emotions, political orientation, personality and sexual orientation. We are intended to be saturated with convenience, in a feeling that we are being served. Shadow operations will remain hidden because you will not ask questions. Even if you asked questions who would you be able to talk to: the whales are too big to answer the plankton and they may be not in your jurisdiction.

Big corporations can exercise their manipulative power by bypassing user awareness. That is not enough. They even produce and sell some devices having a microphone or a camera, though their schematic never showed any, because of the residual data the hidden things might create sometime in the future. The

⁹ Bruce Schneier is an American cryptographer, computer security professional, privacy specialist and writer.

¹⁰ Schneier, Bruce (2010-01-15). „Fixing intelligence failures – SFGate”. Retrieved 2011-04-08. Wikipedia references no. 26.

Internet of Things can extract our behavioural surplus of new forms like voices, conversations, voice modulations, gestures, timing, frequenting, routing, places, games, sporting, exercising, printing, photo shopping, cooking, washing and what not. They are not prepared to share information how the company works. Therefore, we need whistleblowers¹¹ to tell us some of the true intentions of corporations. They know so much about so many individuals that now they can respond to their inner demons and paranoia and manipulate them into joining some groups for some reason, telling them what kind of people to live with, what kind of books to read, what kind of films to watch, what vote for and who vote for. There is a road from pure commercial outcomes to political outcomes and there is also the problem of how much of it is being actually shared with the state agencies and for what purposes¹². This is a collective and systemic problem and it needs a collective solution.

The data taken from our lives is made into products, some very attractive pieces of the cake are sold and profited on quite illegitimately. So far those twenty years having been like a honeymoon for surveillance should induce us to stop, curtail or outlaw some practices but we never tried to, too busy in our enchantment for gadgetry and entertainment. Most of those unresolved problems may create tremendous harm to national security and integrity. It is not particularly surprising that state and non-state actors interfere here and there, distancing us between speculation and facts, truth and fake news. Before 2014 about fifty percent of the Internet world communications were unencrypted, now more than eighty percent, according to traffic of Google Chrome. Hacking has increasingly become a legitimate investigative tool. Some IT specialists just like the frog almost ripped apart between the wise and the beautiful animals, can freely fluctuate from once being a hacker, another time becoming an ethical hacker. They will try remotely to take over your device not to possess it but to gain full control over you, reading your email, collecting your documents, looking at your contact book, turning your location services on and they will send it all to the mothership. Every word typed or searched, any link clicked, any private message, there is a permanent

11 Even when whistleblowers do come into the focus of the world's attention, most of the disclosed materials has been censored by the mainstream media, like in the case of Snowden.

12 The U.S. government gains access to corporate databases, either by producing a warrant for it, or by simply asking. The Department of Homeland Security (DHS) uses data from consumer credit cards and Google for augmenting the profiles of individuals whom it is monitoring.

record kept of. The screen can be off but the device is talking or whispering all the time, constantly chattering. Are we really shure that everything can be under control? Still, paedophile content material can be found and viewed on the generally accessible websites and somehow mysteriously it is not being removed by the famous sophisticated algorithms employed to ensure that there is a permanent ban on proliferation of deviated criminal behaviour¹³.

Our profiling is not about the present, it is about the future. It may happen that someone is different from what the government wishes him to be and he may no longer be able to get a passport, no longer be able to buy a new car, to board an airplane, to buy a train ticket, he may not be eligible for a job or work for the government. Those things are increasingly created and programmed and decided by algorithms fueled by the innocent data from our devices. It is interesting how little we know about the minds mastering those protocols, who they are, what they think, what their views are, whether they are free from the evil, or just how much educated they are in other than science fields like philosophy, ethics, faith, geopolitics, politics, economic systems, history, orthodoxy and heterodoxy alike. It is the problem of trust. What happens is that they are going against the benefit of the broader society. Corporate surveillance increases chances of deviant behaviour and creating punishments that are not equitable to their actions.

Cyberspace offers also stupid amusements and pointless pursuits and is full of collectivist ideologies in general and dangerously saturated with ideological thought as a means of guiding yourself through life. We do not know how to parametrize those excesses, how to teach people take more responsibility and stop them missing the truth of old verities. In spite of reality being virtual, suddenly there emerged a deeply unsettling experience of malevolence, a horrifying experience, malevolence which traumatizes more than tragedies. The painful consequences of becoming conscious what is the source of predation and that you may feel like being a victim quite unexpectedly turned out to be the cause of victim's subsequent immoral behaviour which itself looks pretty counter-intuitive.

Cyberspace is a pile of scrap without proper processing and processualization. Its entitativity is not real, it is some kind of an illusion,

¹³ Unfortunately, while the investigation is still going on, as on June 12, 2020, no other details can be availed to the public. The recent case is not interesting as a reading matter, rather it can serve as a general problem pointer of politically asymmetrical disclaimer practiced by social media moguls and their moderators.

it is created in a process. It needs constant processualization and the process is becoming more and more independent. Entitativity is replaced by processualization. The human being ceases to be an observer, a creator or an absolute spirit. The man is simply a product of ontologized nothingness and the only way to dissipate inevitable tensions is existential nihilism. It is trivially easy to turn cyberspace into nothingness. Cyberspace is remarkably close to Adorno's¹⁴ apotheosis of nothingness, evil, ugliness, contradictions and dissonance and some of its constructs like cryptocurrencies clearly smack of neo-marxism.

The advent of distributed ledger has brought in some other issues crucial for the society and the state. The key word linking them all is 'distributed' suggesting that there are many persons liable not few and that the cyberspace offers them some kind of cyber anonymity, impunity and immunity. It seems none of a coincidence that today we are faced with distributed censorship by reliance on third-party entities, including contractors, media organizations and individuals, with indicia of bias to review content. We are faced with distributed scrutiny of cyberspace users based on the other users they choose to follow, or their interactions with other users. We deal with content suppression on indications of political alignment or viewpoint. We demonstrate helplessness faced with moguls allowing for otherwise impermissible behaviour. On top of that, there are acts that limit the ability of users with particular viewpoints to earn money online compared with other users similarly situated.

In the middle of the hype cycle of big data there is no better security than deleting the data. When a company with personal data goes bankrupt, it is one of the assets that gets sold. When a company is put up for sale, in many cases, your personal data is, too. You may find conflicting statements on different online privacy pages like "not for sale", "may be among the items sold or transferred"¹⁵.

Blockchain shifts some of the trust in people and institutions to trust in technology. Cryptography, the protocols, the software, the computers, the network – there is no recourse when trust turns out to be misplaced.

14 Theodor W. Adorno – a German philosopher, sociologist, psychologist, musicologist. He was a leading member of the Frankfurt School of critical theory, whose work has come to be associated with Max Horkheimer, Erich Fromm and Herbert Marcuse, for whom the works of Freud, Marx, and Hegel were essential to a critique of modern society.

15 One example is NEST, an Internet-connected thermostat company that enables people to control their home energy use via their mobile devices. Acquired by Google for \$ 3.2 billion, Nest had different online privacy pages with seemingly conflicting statements.

Blockchain displaces, reshapes and eliminates trust. Blockchain followers of fashion have a narrow definition of trust coming to a simple “in Mathematics we trust”. But verification is not the same as trust. People trust a human legal system rather than computer codes they will never have the expertise to audit.

It seems that only the advent of blockchain technology has brought back to life the two prominent Gödel’s theorems¹⁶ which can be paraphrased quite adequately as follows: There will always be a big gap that cannot be addressed by technology alone. There is always a need for governance outside the system.

It rarely happens that the consequences of those theorems impacted so much such a variety of all the other disciplines than pure mathematics alone. Gödel published his two incompleteness theorems in 1931 when he was only 25 years old. It is absolutely a must to add that he made a landmark discovery, as powerful as anything Einstein developed. A quest for a unifying “Theory of Everything” run by Bertrand Russell, David Hilbert and Ludwig Wittgenstein making mathematics complete, bulletproof, airtight and triumphant suddenly came to a halt once and for all. A single Theory of Everything is actually impossible. Suddenly Faith and Reason are not enemies and all closed systems depend on something outside the system.

Cyberspace, as all closed systems, depends on something outside the system. If we forget the almost 90-year-old proof, we are bound to head towards distrust, injustice, dystopia and totalitarianism. All of these need to be taken into account by lawmakers and regulators who are always long way behind the current happenings and developments, especially now when the hype of the Internet, the Internet of Things, blockchain technology and cryptocurrencies is far from dissipating.

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¹⁶ Kurt Friedrich Gödel (1906–1978) – one of the most prominent mathematicians. His two theorems are: The Incompleteness Theorem and The Completeness Theorem.

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Big data, dane wynioskowane a przyszłość pozostania człowiekiem – między odrętwieniem a gęsią skórką

Streszczenie

Cyberprzestrzeń jako miejsce wirtualnej komunikacji i informacji oferuje swoim użytkownikom potencjał, którego konsekwencje mogą być debatowane pod różnymi kątami. Krytyka pochodząca z cenionych i profesjonalnych źródeł podkreśla niektóre ryzyka w systemie. Cyberprzestrzeń przyspieszyła fundamentalną przemianę w konsumpcji i zwiększyła wykorzystywanie usług cyfrowych. Wzmocniła dominującą pozycję cyfrowych modeli biznesu kosztem bardziej tradycyjnych biznesów. Giganci technologii pokazali jak ważne są big data i dane wynioskowane, uzyskane z aktywności użytkowników Internetu.

Dzisiaj niewielu może wyśmiewać albo odrzucić jako niedorzeczne historie cenzury, wrogości, manipulacji, fake newsów, oszustw czy też akcji o zabarwieniu ideologicznym. Niewielu wspomina o losie człowieka, który podryfował w domenę pozoru.

Słowa kluczowe: cyberprzestrzeń, sztuczna inteligencja, Internet, inwigilacja, zachowanie, demokracja, profilowanie, blockchain, istota ludzka