About AI, Cybersecurity, Democracy and the Loss of Freedom

by

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Friedrich Wilhelm Joseph Schelling, a German philosopher of the idealistic tradition,[1] defined absolute freedom something like that: free is, who acts according to the laws of his own being and is not determined by anything else in or out of himself.[2] He speaks about the intelligible entity of human beings, which has metaphysical dimensions. Metaphysics as it was understood at that time is nowadays seemingly outdated, but as a definition for *absolute* freedom it is correct. Obviously, human beings in our world[3] do not have absolute freedom. The personal freedom is limited by time, space, abilities, intelligence, environment, social rules, laws, environment, emotions, knowledge, consciousness, etc.

The moral limitation of freedom was formulated by Immanuel Kant[4], another representative of German idealism: the individual freedom ends when it sets limits to the freedom of others according to a general law.[5]

What has this to do with AI and cybersecurity?

As a philosopher, I am worried about the contemporary development of AIs, especially at the belief of AI-nerds who believe that AI can solve all human problems. No doubt, there is a great potential in the development of AI, but there should be no illusions about its limits and dangers.

AI is used for face recognition, to compose songs and poems, in medicine to analyse sickness symptoms, for weather forecasts, autonomous car driving, producing recipes for food, etc.

It seems AI can do anything, but is this true?

The working principle for a computer is the binary code. This is based on the old principles of formal logic, the principal of identity (A is A), the principle of contradiction (either A or B, not both at the same time) and the principal of the excluded third (either A or B, not C, D, E, …).

If one of these principles is violated, any application or computer system crashes because there is an error/bug in the programme. This is the strength and weakness of computers. Strength, because in this way computers work reliably, weakness, because it is inflexible and sets limits.

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[1] 1775–1854.

[2] German original: »»… frei ist, was nur den Gesetzen seines eigenen Wesens gemäß handelt und von nichts anderem weder in noch außer ihm bestimmt ist.« (*Über das Wesen der menschlichen Freiheit,* WBG/Felix Meiner Verlag 1997, p. 56)

[3] The "empirical world".

[4] 1724 – 1804.

[5] German original: »Das Recht ist also der Inbegriff der Bedingungen, unter denen die Willkür des einen mit der Willkür des andern nach einem allgemeinen Gesetze der Freiheit zusammen vereinigt werden kann.«

»Eine jede Handlung ist recht, die oder nach deren Maxime die Freiheit der Willkür eines jeden mit jedermanns Freiheit nach einem allgemeinen Gesetze zusammen bestehen kann.«

»Also ist das allgemeine Rechtsgesetz: handle äußerlich so, daß der freie Gebrauch deiner Willkür mit der Freiheit von jedermann nach einem allgemeinen Gesetze zusammen bestehen könne,…«

(*Metaphysik der Sitten,* WBG Darmstadt 1998; B 33, 34)

AI is a further development because the program can develop new routines on itself, what is called "self-learning". An AI is restricted to the above-mentioned classical principles of logic so that it can work properly. The new variables that allow new routines in an AI cannot transcend these principles. An AI does not understand what it is doing, it computes according to the programmed routines. If an AI is confronted with something that it has no data for – it "fabulates", i.e. it puts together different data according to its programmed algorithms coincidentally. If the resulting information is correct or wrong, this is something an AI cannot "decide" because for such decisions the ability to understand things is necessary. Understanding is the a priori for infer facts correctly. To say it more philosophically: to find the truth. To believe that AIs have this capacity is a strong misconception.

An AI is strong in fields that can be quantified, i.e. data that can be converted into algorithms, but it will fail if confronted with phenomena that are not quantifiable. Language is such a field that cannot be represented by numbers. The language modules can be used as help to correct grammatical and orthographic rules, but the essence of language is the *meaning* of words. Furthermore, lingual connotations can be attached to an expression, e.g. ironic, humorous, sceptical, sarcastic connotations, etc. One word can have many several meanings depending on contexts. This is something that cannot be represented in algorithms adequately.

The ability to understand things rationally is bound to self-consciousness, what an AI will never be able to have. Consciousness is not quantifiable and therefore cannot be represented by algorithms. Decision-making is a further deficiency of AIs. The "decisions" of an AI are the result of programmed algorithms that can perhaps be compared with the instinctive reactions of animals, but animals have far more freedom in their reactions than an AI.

An AI is a useful tool in restricted operating areas, but it is not advisable to rely on AIs for complex problems that are not quantifiable.

The next step in computer development is the quantum computer. The classical formal logic principles are not valid any more. A can be B at the same time. This enhances the computational efficacy, but it appears that the principle of coincidence is prevailing, what leads to erratic results. The deficiencies that are valid for a classical computer apply here as well: qubits cannot think. Therefore, quantum computers are restricted to the algorithmic limits of a classical computer.

Quantum physics is a relatively new science.[6] It could be a logic beneath the seemingly coincidental quantum processes that we still cannot understand. Perhaps Einsteins "spooky action at the distance" can be not only observed and proved, but can also be explained some day in the future.

To overcome the restrictions of contemporary AIs, the development will probably be a combination of computer technology and biological substances as neurons (biological neural networks) in the future. There are two variations possible:

1.) implantation of biological substances (neurons) into a computer interconnected with the software,
2.) implantation of computer (AI) chips into human bodies or brains.

This could be a possibility to make AIs self-conscious or equip human beings with AI-capacities. Such a suggestion might sound like science fiction, but the first steps have already been made in this direction.

[6] 100 years is a short time in 2500 years of Western science history.

The question is, where such synthesis of technology with human tissue would lead to. What kind of self-consciousness will develop? What is consciousness without perception, emotion, existential experience? … without living life? The dangers of this development are paramount. Nobody can preview what a biological computer will do when it can act autonomously, what kind of consciousness such entity will develop.

A chip in a human being could mean the potential loss of freedom because – can the programme of the chip be controlled? Can be excluded securely, that no backdoor has been installed to control the individual whom the chip has been implanted to? Can the free will – the problematic of free will is not to be discussed here – be guaranteed?

What is cybersecurity?

Hacking computer-systems has been a good income for criminal minds and therefore, cybersecurity is understood as protection *against* being hacked usually. But this is not the whole meaning of "cybersecurity".

Cybersecurity must also be understood as protection *from* cyber-technology, as protection against being victim to cyber-manipulation, e.g. fake news, misinformation, … Here the facts are shown in a distorted way, so that a recipient of such information is deluded. AIs have enhanced this possibility for culprits to a great extent. Wrong knowledge leads to wrong decisions, is a kind of mental confinement, therefore protection in this realm is necessary.

The (wrong) use of AIs can lead not only to wrong knowledge or loss of knowledge, but also to a loss of faculties because "thinking" is left to an AI. This is especially precarious for students, who prefer to let do all the work by an AI instead of learning how to solve problems themselves.

AIs are very useful utilities – but not more!

Due to the technological development on a global scale, information is not restricted to nationwide borders. The Internet allows not only access to worldwide information and knowledge, but also to manipulate the public opinion without limits. The use of AIs has enhanced the prospects of increasing the knowledge level as well as the capacity of manipulating the opinion of people. The contemporary AIs cannot be trusted when used to reveal the truth, but it can be used to influence people by using bots that sound very plausible in their argumentation. This is the danger for democracies because autocratic systems aim to destabilize democratic structures. It is a war to change the plurality of opinions in democracies into the only allowed doctrine of belief of autocratic systems. The problem is that people with a low educational level can easily be deceived and seduced because of their missing general knowledge. The ignorant[7] and inexperienced are easily cheated…

This is the next danger of losing liberty: the turnover of a democratic system into an autocratic dictatorship.

Why? — Because cybertechnology, especially the use of AI, enhances the scope of surveillance of people as it has never been before. Dictators and authoritarian leaders love the thought of controlling the people and use this technology to suppress and persecute any critics or opponents that do not comply with their dogmas.

[7] In this context not meant derogatory!!

Another negative aspect of AIs is, that they facilitate the spreading of misinformation, the surveillance and suppression of people.

Laws fight this in democratic systems, but this does not apply to autocratic systems. Dictators do not like the truth because then their deficiencies and lies would be general knowledge. The will of the dictator is *the* only valid law and universally valid laws would obstruct this will.

A dictator can react much faster than a democratic decision process in the case of emergencies. The weakness of democracy is the slow decision finding when a problem arises. Necessary processes or actions cannot keep up step for emergency measures. The ability for fast (re)actions is especially important in times of cybertechnology because events develop very fast and technological developments get faster in our time continuously, so that human understanding and control of this development is struggling.

The weakness of a dictator is a higher probability of making wrong decisions. The strength of a democratic process is: the more people think about an issue, the higher the probability that the decision is correct.

It is necessary to develop mechanisms, that prevent the overthrow of democracies. In some way, the new technologies could be the solution. Why not use AI as utility to identify antidemocratic processes? AIs cannot think but can be used to scan the media and the Internet for signs of antidemocratic occurrences.

Let us propose the political idea of democracy to be a principle of intrinsic value because in a democratic state all people are equal before the law.

Injustice is the root of discontent, quarrel and fighting, only justice can guarantee peace in society.

Important is the distinction of using an AI for civil purposes or for warfare.

The civil use can be regulated by legislation because courts can enforce compliance with the laws in peace. International contracts should guarantee this compliance. Advisable is a law that demands to mark (any) products that have been produced by or with the help of AI. This should be a good precaution against fraud and misuse. Security can be achieved with judicial means.

The utmost danger of cybertechnology, especially with the improvements of AIs, arises in a cyberwar, when no conventions or moral restrictions are observed. Legal regulations in this aspect only weaken a nation and make it victim to attacks. This is a deficiency of democracies because authoritarian nations do not have this problem: the autocrat does not respect universal laws because — in his opinion — he is the law.

With the rising dangers for democratic states it is necessary to develop means of defending democratic values against authoritarian systems. The creation of special institutions with extraordinary powers, e.g. executive powers to disregard law and jurisdiction in an emergency, could be a solution[8]. To develop control mechanisms so that these institutional powers cannot be misused to turn a democracy into an autocracy should be possible.[9]

[8] [8] I am well aware how dangerous this proposition is…

[9] In ancient Rome, this strategy worked for several hundred years successfully. When severe danger for the state arose, a dictator was inaugurated for half a year. After that time he relinquished his powers.

When the law is not revered, only strength and power rules the world. Therefore, it is necessary for democracies to be powerful because only then the most possible individual freedom can be preserved. Privacy is a high value in a democracy, but it must not go so far, that criminals, terrorists and enemies of democracy are protected from prosecution by judicial rules.

In traditional kung fu[10], the art of fighting, there is a simple rule: when you are attacked, fight back with the same force!

When the attacker wants to hurt, he is hurt. When he intends to mutilate, he is mutilated. When he is going to kill, there is a high probability that he will be killed.[11]

Up to this date I still do not know if this is a moral obligation, analogous to the Decalogue of Moses or if this is a rule to be an efficient fighter - though I trained kung fu for several decades…
But this is sure: if you are attacked and your weapon is inferior to that of the attacker, you are lost…

What did Winston Churchill say? He said: “No one pretends that democracy is perfect or all-wise. Indeed, it has been said that democracy is the worst form of government except all those other forms.”

Democratic nations must be powerful and fight against their enemies with the same force, that they use: to counter cyberattacks with cyberattacks, misinformation and fake news with truth.

Only when this fight is successful, the loss of individual freedom can be prevented.

[10] Not martial arts, that's sport.

[11] This option is only the last resort because for anyone who practices kung fu, life is somewhat sacred.