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ARTIFICIAL INTELLIGENCE AND AMERICAN-CHINESE COMPETITION

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Abstract:
The article analyses the consequences of the strategic rivalry of the People's Republic of China with the United States for global leadership. It takes place in the area of culture, economy and technology. Both sides are attaching increasing importance to research into artificial intelligence. The US and the PRC recognise that this is the most important area of confrontation. A country that will creates advanced artificial intelligence algorithms will have a strategic advantage over its opponent. At the root of the conflict lies a fundamentally different axiology of both societies, as well as different strategic cultures of both countries. Mutual incomprehension greatly limits the possibility of avoiding confrontation. The growing race between the United States and China for domination in the AI is the most dangerous conflict in the history of the world. It has no precedent. The country that wins it will have a huge strategic advantage over its opponent. The leaders of the USA and the PRC still see the possibility of reaching a consensus. However, it is becoming increasingly difficult to achieve. Deng Xiaoping's strategy has brought China a renaissance of power. The current Chinese leader, Xi Jinping, has denied Deng's political will. He accumulated more power than Mao Zedong had. This reduces the chances of a peaceful solution to the growing US-China confrontation.

Keywords: Artificial Intelligence; United States; Republic of China; strategic advantage; deep learning; US Strategy on China; China Strategy on US

Introduction

The world is changing and with it the limits of its interpretation and interpretation of our place in it. Bartosz Brożek says that "Changes in the image of the world - especially in its central part - cannot be immediate. This is usually a long evolutionary process, not a one-off revolution" [Brożek, 2018, p. 233]. The evolution of the boundaries of interpretation poses the problem of the so-called bifurcation point, in which the imbalance system is in a critical point. "The smallest accidental fluctuation can tilt the scales and irrevocably determine the future fate of the system" [Ball, 2007, p. 141]. This situation refers to the area of physics concerning thermodynamics of imbalance. It cannot be directly transposed to social reality, but it is well characterized by the features of a set, which is characterized by high complexity. Manuel Castels, in three publications that provide a concise description of the ongoing processes of transformation and modernization in the modern world ("The Rise of The Network Society" [8], "The Power of Identity" [10], "The End of the Millennium" [9]), points out that, increasingly, under the influence of technology, our social structures have undergone profound transformations. The Internet, artificial neural networks, algorithms, machine learning, nanotechnologies, format and impose new forms of social and personal activity on us. We are facing the challenges posed by science and technology, which may be an imbalance system approaching a critical point. There is still no general theory to describe complexity [Barrow, 2005, p. 163]. However, in recent years, a complex structure has been identified that has intrigued researchers. It was called self-organized critical state (self-organizing critically, SoC) [Barrow, 2005, p. 163]. The Internet, equipped with qasi-intelligent algorithms, can undergo

such a structural form of critical self-organization and aim at the so-called bifurcation point in relation to society.

As humanity, since the second half of the 20th century we have had sufficient resources to cause a global disaster. John D. Barrow believes that "scientific cultures, of our own kind, must contain the seeds of our own destruction" [Barrow, 2005, p. 135]. This English physicist and mathematician notes that "a propensity for short-term benefits rather than ultra long-term planning will not allow us to stop catastrophes that are slowly and gradually becoming more and more real, albeit imperceptible, in the course of one human life" [Barrow, 2005, p. 135]. The risk of a potential catastrophe for mankind seems to be inscribed in the civilization development, which is accelerating more and more. Ray Kurzwail notes that in the 21st century we will witness not a hundred years of technological progress, but a progress of 20,000 years (in relation to today's rate of progress, of course) or a thousand times greater than that achieved in the 20th century [Kurzwail, 2013, p. 26]. The phenomenon of social time falling apart from technological time will continue to grow. This disharmony will put increasing pressure on the search for technical tools to overcome it. But the distance will be logarithmically increasing, not decreasing. During human life, the next "generations" of technology will die, and their duration will be radically shortened.

Ray Kurzwail, one of the most eminent AI theorists and practitioners and the main authority in the transhumanist community, believes that the development of artificial intelligence will result in a process of progressive human-machine integration, resulting in a new form of integration of a biological being with a digital entity. Nick Bostrom, head of the Institute for the Future of Humanity at Oxford Martin School, does not share Kurzwail's optimism. He believes that the natural consequence of man's creation of artificial intelligence will be its further development, until it radically becomes smarter than all mankind. After reaching a critical point, it can gain a strategic advantage over us. Bostrom has introduced the concept of superintelligence [Bostrom, 2014] into scientific discourse. In his view, it is any mind with many times greater cognitive and creative abilities in any area of activity than the global potential of all human minds. Both positions indicate, however, that we are approaching this point of bifurcation for the development of research on AI. Competition between the USA and the PRC for world domination will accelerate the process of development of modern technologies and research on artificial intelligence.

Competition between the USA and the PRC for world domination is likely to accelerate the process of developing new technologies and research on artificial intelligence. Both countries are already on the brink of economic war. May 10, 2019. The United States has introduced customs duties on Chinese products worth USD 200 billion. In response, China has taken retaliatory measures worth US$60 billion. Odd Arne Westad predicts in Foreign Affairs that we may be on the eve of a conflict that will be similar to the Cold War [Westad, pp. 86-95]. The risk of conflict between the United States and China has also worried a Harvard professor, Graham Allison [Allison, 2017].

Separating the predictable from the unpredictable is a difficult job. But we can accurately anticipate fundamental trends in world events. A large part of what American intelligence does are forecasts of global political and economic trends. However, this did not prevent the USA from making a strategic mistake in assessing its relations with China. Their consequence is a dynamic growth of the power of the PRC. The United States has twenty thousand intelligence analysts who do everything that is important for US interests in the world. In the article, based on analytical methods, we will try to verify three fundamental theses:

I. The growing escalation of the conflict between the USA and China results, among other things, from a different strategic culture of both countries.

II. Between the United States and China, the most dangerous and unpredictable arms race in the history of mankind is taking place to gain a strategic advantage over the opponent thanks to AI.

III. The American-Chinese race for strategic dominance in the field of artificial intelligence can lead to the creation of a superintelligence that will become independent of humanity.

1. Different strategic culture in USA and in China.

The modern western concept of international relations appeared in the 16th and 17th centuries. The structure of Europe disintegrated into a group of countries of approximately equal strength. No country was strong enough to improve its will. The concepts of sovereignty and legal equality of states became the basis of international law and diplomacy. However, China has never been involved in permanent contact with another country on an equal footing. Why? Because they have never met societies of comparable culture and size. The Chinese elite were convinced of the uniqueness of China, which was not simply a great civilization among others, but the only real civilization. According to the Chinese, the natural order of the universe was the existence of a number of smaller states that accepted Chinese culture and paid tribute to China. As H. Kissinger notes " Not only was the scale of China traditionally far beyond that of the European states in population and in territory; until the Industrial Revolution, China was far richer" [Kissinger, 2012, p. 11]. Samuel Huntington reminded the world in the mid-1990s in his loud work "The Clash of Civilizations" that in 1750 China produced about one third of global production and the West about one fifth [Huntington, 2000, p. 114]. This situation lasted until the 1820s. There's no exaggeration in Kissinger's statement that he says "In fact, China produced a greater share of total GDP than any Western society in eighteen of the last twenty centuries" [Kissinger, 2012, pp. 11-12].

A characteristic feature of China in history is its great pragmatism. It is one of the main reasons for the fundamental difference in the Chinese and Western approaches to strategy. In Chinese tradition, strategic culture is an integral part of one whole - past and future, weakness and strength - everything is interrelated. "Strategy and statecraft become means of 'combative coexistence' with opponents" [Kissinger, 2012, p. 31]. In this competition, the goal is to strengthen one's own advantage and push the opponent into a worse position. It is a process, part of a larger cycle. Kissinger aptly observes that "The most remarkable expression of China's fundamental pragmatism was its reaction to conquerors. When foreign dynasts prevailed in battle, the Chinese bureaucratic elite would offer their services and appeal to their conquerors on the premise that so vast and unique a land as they had just overrun could be ruled only by use of Chinese methods, Chinese language, and the existing Chinese bureaucracy. With each generation, the conquerors would find themselves increasingly assimilated into the order they had sought to dominate. Eventually their own home territories – the launching points for their invasions – would come to be regarded as part of China itself" [Kissinger, 2012, p. 22]. According to tradition, the most important Chinese strategic text "The Art of War, Sun Tzu" comes from the "Spring and Autumn" period of the Czou Dynasty and is to be written by Sun Wu, so it was written at the end of the 6th century BC [Rodziński, 1974, p. 51]. Another outstanding work "Military Methods" comes from the Warring Kingdoms period and was probably created by Sun Pin between 356 and 341 BC [Sun Tzu, 2014, p. 9]. During the Warring Kingdoms Period (475-221 BC), which is widely regarded as the golden age in the history of Chinese thought and philosophy, there was also a Chinese school of strategists. The Warring Kingdoms period also provides the first information about *Weiqi,* which is known in the west under the Japanese name of "*go*". The Warring Kingdoms period also provides the first information about Weiqi, which is known in the west under the Japanese name of go. To this day, it is the basis for strategic education in China. In these oldest documents, strategy is not

so much an analysis of a specific situation as a definition of its links with the context in which it exists. This is reflected in the Chinese notion of shi - "potential energy" of the developing military situation - its developmental tendency. The concept of shi has no simple equivalent in Western culture. The essence of Chinese strategy is therefore the patient accumulation of relative advantage. This is a diametrically opposed approach to the Western approach.
The classic of European strategic thought, Antoine-Henri Jomini, believed that the strategy consists of unchanging values, creating universal rules of warfare. In turn, Carl von Clausewitz emphasized the complexity of war as a phenomenon. He believed that circumstances differed so much in war that many factors had to be taken into account. There are no general, identical rules. A strategist responsible for evaluating the whole must have an intuition that sees the truth at every moment of the changing reality. However, they both believed that it was necessary to strive for a decisive blow to the opponent. This is the essence of Western strategic thinking. - the pursuit of a decisive clash of forces.

1.1.The growing escalation of the conflict between the USA and China as a result of the different strategic axiology of both countries.

Most influential American analysts believed that China's accession to the world economy, its opening to globalization, would sooner or later lead to the democratization of the PRC. Successive American presidents also succumbed to pressure from large corporations, which claimed that cooperation with this giant market is economically, commercially and politically beneficial for the United States. This confirmed the rate of growth of mutual trade turnover - from USD 8 billion in 1986 to USD 578 billion in 2016.
As B. Góralczyk notes: "Only now does it reach the Americans that they misjudged the situation and too often succumbed to the temptation to conquer the great Chinese market. They were driven by more short-term interests than by strategic imagination" [Góralczyk, 2018, p. 448].
The United States has long felt that it can understand China and influence its development. The United States has long had the external feeling that it is able to understand China and influence the direction of its development. In 1967, R. Nixon said, "The world cannot be safe until China changes. So our goal, to the extent that we can influence events, should be to bring about change" [Nixon, 1967, pp. 111-125]. Kurt M. Cambell, one of China's most influential analysts, rightly presents it ""Ever since, the assumption that deepening commercial, diplomatic, and cultural ties would transform China's internal development and external behavior has been a bedrock of U.S. strategy" [Cambell, 2018, p. 60].
These hopes turned out to be a very costly mistake. As the author notes "Diplomatic and commercial engagement have not brought political and economic openness. Neither U.S. military power nor regional balancing has stopped Beijing from seeking to displace core components of the U.S. - led system. And the liberal international order has failed to lure or bind China as powerfully as expected. China has instead pursued its own course, belying a range of American expectations in the process" [Cambell, 2018, p. 61].
The analyst, who for years co-created the erroneous strategy of the United States towards China, writes nowadays :"The starting point for a better approach is a new degree of humility about the United States' ability to change China. Neither seeking to isolate and weaken it nor trying to transform it for the better should be the lodestar of U.S. strategy in Asia. Washington should instead focus more on its own power and behavior, and the power and behavior of its allies and partners. Basing policy on a more realistic set of assumptions about China would better advance U.S. interests and put the bilateral relationship on a more sustainable footing. (...)... the first step is relatively straightforward: acknowledging just how much our policy has fallen short of our aspirations" [Cambell, 2018, p. 70].

Thomas J. Christensen, Deputy Secretary of State under the leadership of President George W. Bush, believes that since the beginning of the reforms in China, no country has done more to increase China's power than the United States. The United States itself has created the greatest threat to its global interests. For the first time, they are competing with a country with comparable economic potential and vast strategic experience based on a sense of its historical uniqueness [Christensen, 2015, Prologue].

Deng Xiao Ping was the main creator of the strategy for rebuilding China's power. It is worth remembering that Deng Xiaoping has a long military career behind it. He commanded the army that conquered Tibet in the 1950s. Then, as Secretary General of the CCP, after the "100 Flowers" campaign, he brutally exterminated the "anti-party elements" on the order of Mao Tze Tong. He was responsible for the so-called "big leap" in 1958-62. He was responsible for the so-called "big leap" in 1958-62. It led to the tragedy of the "great famine". According to F. Dikötter, the number of victims could reach 45 million people [Dikötter, 2013, p. 455]. This is considered to be the greatest famine in the history of the world, and Mao was at the mercy of the Cultural Revolution. These personal experiences had a major impact on his concept of modernising China and his strategy game with the USA. Deng Xiaoping left clues for his successors. They have the character of short advice (chengyu). They present China's strategy for the future. As B. Góralczyk notes, "he addressed his successors with the following recommendations and even commandments:

- *Lengjing guancha* - to carefully observe the situation and analyse it coolly;
- *Yousuo zuowei* - to attempt to contribute;
- *Wen zhu zhenjiao* - to hold firmly to the ground and firmly defend your own interests;
- *Chenzhuo yingfu* - to approach the changes in progress calmly and with confidence;
- *Shanyu shouzhuo* - to be careful not to exalt yourself;
- *Juebu dang tou* - do not try to be a leader;
- *Taoguang yanghui* - the hide the skills and intentions" [Góralczyk, p. 161].

Especially the last three councils (chengyu) - *shanyu shouzhuo, juebu dang tou* and *taoguang yanghui* indicate that Deng recommended great caution in relations with the USA. He clearly recommended not to provoke the United States - to hide not only his potential but also elements of his own strategy. All the successive leaders of the PRC followed these principles. It was only Xi Jinping who openly broke these rules.

2. Between the United States and China, the most dangerous and unpredictable arms race in the history of mankind is taking place to gain a strategic advantage over the opponent thanks to AI.

In July 2017, China's government adopted the National Artificial Intelligence Development Program [Ding, p. 31]. A strong impulse for the creation of this program was the event of March 2016. The AlhaG algorithm defeated the Chinese champion Lee Sedol, one of the highest rated players in the world in the Go game. The algorithm was based on MCTS (Monte Carlo Tree Search) heuristics created by DeepMind, acquired in 2014 by Google. Creating a program that could beat a professional player in Go was extremely difficult due to the great complexity of this game. To analyze 3 moves forward you need to calculate 8 million combinations. The calculation of 15 forward movements requires an analysis of the number of combinations greater than the number of atoms in the universe [Ding, p. 51]. In the Chinese tradition, this game played a special role in learning strategy. The AlphaGo algorithm uses *deep learning* artificial neural networks. Tom Walsh compares the AlphaGo algorithm with Deep Blue, which he beat in Kasparov's chess. As he notes, "Deep Blue used specialized equipment to study about 200 million movements per second. For comparison, AlphaGo sets only 60,000 positions per second. Deep Blue's approach used brutal force to find a good move - but that doesn't translate

well into a more complicated Go game. In contrast, AlphaGo had a much greater ability to evaluate his position, and he learned that skill by playing billions of games with himself" [Ding, p. 3].

The fact that the company is a part of the American corporation and also co-creates, with IBM, Microsoft, Amazon and Facebook. The partnership for AI, which created such an advanced algorithm, was a strong impulse for Chinese politicians to increase spending on AI in the PRC. The Future of Humanity Institute (FHI) of Oxford University, in its report "Deciphering China's AI Dream", thoroughly evaluated the Chinese AI development programme. FHI analysts point out that the country is systematically increasing its spending on the development of artificial intelligence, but at present it is accelerating rapidly. Over three years - from 2017 to 2020 - they are expected to increase tenfold [Ding, p. 3]. What is characteristic for the Chinese strategy is a strong reliance on domestic companies such as Bajdu, Alibaba, or iFlyTek and supporting them financially as well as creating a base for the development of own technologies and research. China is also skillfully using large amounts of data for the development of AI, which in turn is being blocked from access by companies and scientific institutions from other countries [Ding, p. 3]. At the same time, the system of searching for and recruiting people with special IT talents is being developed at the regional and national level. The largest companies also open foreign branches in order to search for and attract the most talented people to cooperate with. They are also offered attractive jobs in China itself [Ding, p. 4]. The report points to a particular emphasis on the development of robotics and intelligent production processes, which are to be based on domestic solutions and technologies [Ding, p. 5].

According to the plan, China intends to develop its AI industry to the level of the most developed countries in the area by 2020. By 2025, they want to gain a lead in some AI areas and by 2030, the PRC is expected to become a global centre of research and innovation related to artificial intelligence, with Chinese production exceeding USD 60.3 billion[Ding, p. 5]. The PRC has made a special leap in building supercomputers. Still in 2014 in the global Top 500 list Americans had 232 units (46.4%) and China 76 (15.2%), but already 3 years later in the Top500 in June 2017. The PRC had 159 supercomputers (31.8%) and the USA 168 systems (33.6%) [Ding, p. 24].

More importantly, the report indicates that the Middle Kingdom has already in 2014 overtaken the United States in terms of registering patents related to AI as well as scientific articles on *deep learning* processes. However, they are still far from the USA in the field of basic research [Ding, p. 26]. The report shows that more and more analysts indicate that the potential of AI developed by the USA and the PRC may play a key role in gaining strategic advantage over the opponent by one of these countries. The high degree of civil-military fusion in the PRC raises legitimate concerns about the widespread use of the AI's potential in the Chinese armed forces [Ding, pp. 32-33]. Little information reaches the general public about the research conducted in China in this area of AI development. However, the level of advancement of the implemented projects is confirmed by the global position of many companies based in the Middle Kingdom. Megvia and SenseTime dominate in face recognition algorithms. The technology, which is supposed to allow active observation of citizens using 170 million CCTV cameras and China Mobile devices, has been developed by SenseTime. In November 2016, researchers from Shanghai Jiao Tong University in China presented a system that learns to distinguish criminals from other people on the basis of their photos [Walsh, 2018, pp. 226]. DJI (The Futureis Possible) has a 70% share in the global drones market. Its products are equipped with algorithms to recognize objects in the field. Ubtech Robotics has a strong position in the market of humanoid robots. Cambricon Technologies equips Huawei smartphones with chips that allow them to use deep learning algorithms. iFlytTek specializes in algorithms that allow people to talk to the machine, and Cloudwalk specializes in AI technologies that ensure public safety

[Cieślik, 12]. Little information reaches the general public about the research conducted in China in this area of AI development. However, the level of advancement of the projects is confirmed by the global position of many companies based in the Middle Kingdom. Megvia and SenseTime dominate in face recognition algorithms. The technology, which is supposed to allow active observation of citizens using 170 million CCTV cameras and China Mobile devices, has been developed by SenseTime. In November 2016, researchers from Shanghai Jiao Tong University in China presented a system that learns to distinguish criminals from other people on the basis of their photos [Wójcik, 2009, p. 185]. DJI (The Futur eis Possible) has a 70% share in the global drones market. Its products are equipped with algorithms to recognize objects in the field. Ubtech Robotics has a strong position in the market of humanoid robots. Cambricon Technologies equips Huawei smartphones with chips that allow them to use deep learning algorithms. iFlytTek specializes in algorithms that allow people to talk to the machine, and Cloudwalk specializes in AI technologies that ensure public safety [Wójcik, 2009, p. 185]. The most dangerous and unpredictable race in the history of mankind is taking place mainly between the USA and China. Both sides are interested in gaining strategic advantage over the opponent. The AI applications with the greatest importance for combat and strategic advantage will also be the most difficult to regulate, as states will be interested in investing in them and their further unrestricted development. The arms race will increasingly be based on forecasts of the future battlefield created by autonomous systems to combat autonomous systems.

3. The American-Chinese race for strategic dominance in the field of artificial intelligence can lead to the creation of a superintelligence that will become independent of humanity.

Nick Bostrom believes that "it may be reasonable to believe that human-level machine intelligence has a fairly sizeable chance of being developed by mid-century, and that it has a non-trivial chance of being developed conciderably sooner or much later" [Bostrom, p. 25]. Analysis of several areas where AI technologies are being developed shows that the pace of Artificial Intelligence is accelerating more and more. It is becoming a real perspective of the present generation entering adult life. When it appears, it will radically change our cognitive perspective and our place in the world. Ray Kurzweil clearly states, "The intelligence we will create through reverse brain engineering will have access to its own source code and will be able to quickly improve over repeated design cycles" [Kurzweil, 2018, s. 363]. The key issue we face in the next 30 years is the dynamics of the AI explosion. Nick Bostrom says that a slow exit - counted in decades - is a chance to build a security infrastructure: "Nations fearing an AI arms race would have time to try to negotiate treaties and design enforcement mechanisms" [Bostrom, p. 77]. This is, however, a scenario that seems less likely.

The analysis should also consider an option that is extremely unfavourable to humanity. This is a violent explosion of the AI. Bostrom notes that: "A fast takeoff occurs over some short temporal interval, such as minutes, hours, or days. Fast takeoff scenarios offer scant opportunity for humans to deliberate. Nobody need even notice anything unusual before the game is already lost. In a fast takeoff scenario, humanity's fate essentially depends om preparations previously put in place" [Bostrom, p. 77].

The strategic perspective of mankind must take into account the emergence of artificial intelligence and also include an option in which it goes beyond the critical point and achieves a huge advantage over humans in all areas of knowledge. General Robert H. Latiff rightly points out that Few understand what the future holds, and frighteningly few seem to care [Latiff, 2018, p. 23]. Further research on AI cannot just include a strategy for its development. The new risk logic must increasingly be taken into account. Whether we change the paradigm of the

security sciences and take into account the reality of the AI explosion scenario may determine not only our future, but our existence as humanity.

Conclusion

The different strategic culture of the USA and China increases the likelihood of confrontation between the two countries. The main area of the struggle for domination will be modern technologies. Both countries believe that winning the race in the area of artificial intelligence will give them a strategic advantage over their opponents.

However, the US and China must take into account the fact that their competition for primacy in the area of artificial intelligence may lead to the emergence of superintelligence, which will have a huge advantage over people in all fields of knowledge. Danetisation of the human environment and the development of Artificial Intelligence technologies will lead to the development of autonomous systems and increase their independence. The Multinational Capability Development Campaign (MCDC) project has adopted a scale of autonomy that distinguishes between 6 types of autonomy. On this scale it means level 0: "The machine performs missions and is under full human control", and on level 6 "based on knowledge of the wider environment, the machine can automatically initiate a mission. The machine collects, filters and prioritises data. It integrates and interprets data and makes forecasts. Performs the final ranking. Under no circumstances is information displayed to people. The machine does the work automatically and does not allow human intervention". The ongoing technology race between the USA and China has a military dimension. Toby Walsh warns that autonomous weapons will destabilize the current geopolitical system. It will destroy the delicate balance built after World War II. Our planet will become a more dangerous place[1]. In an arms race in which the US and China use AI technologies to gain strategic advantage, it will eventually accelerate its development and we will reach for solutions that will make machines autonomous on the sixth scale - without human intervention.

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