



Journal of Geography, Politics and Society

2023, 13(3), 13–21

<https://doi.org/10.26881/jpgs.2023.3.02>



AI: SOCIAL PERCEPTION AND THE STATES POLICY

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Citation

Bógdał-Brzezińska A., 2023, AI: social perception and the states policy, *Journal of Geography, Politics and Society*, 13(3), 13–21.

Abstract

The specificity of advanced technologies constitutes a transformation challenge in terms of the conditions of social development and influence on state policies. In the last few years, this process has been seen as a consequence of the development of artificial intelligence – a general-purpose digital technology. Due to its complexity, the AI technology has enormous potential for social change, which raises both deepening hopes and fears. AI also influences the policies of countries, which for its development use both the current achievements in the development of ICT (information and communication technology), as well as the demographic potential and accumulated digital data resources, the diversity of the political system and the dominant importance of their own digital sector with international influence. It can be considered that those countries that have been successful as digital powers are taking on the role of AI superpowers with greater freedom and innovation. At the same time, there is a rapid increase in the number of countries that aspire to become AI leaders and those that treat artificial intelligence technology as an opportunity to improve their international position. Public perception is a factor supporting the adoption and implementation of national development strategies and legal regulations for AI. It reveals social fears and hopes associated with the technology in question, influencing the views of both politicians and citizens.

Key words

AI, political system, security, state, strategies, technology.

Received: 13 November 2023 **Accepted:** 18 December 2023 **Published:** 29 December 2023

1. Introduction – specificity of the AI technology

“Technology has played both driving and transformative roles throughout history” (Zacher, 2016, p. 35). The importance of technology for political and state-building processes has been recorded since ancient times. Land irrigation techniques contributed to the creation of the first city states of the Sumerian era, and paved roads strengthened the logistic capabilities of the army of the Roman Empire. However, it was only the industrial revolution in the 18th century that contributed to the massive development of technological solutions

that strengthened the economic and military potential of Western European countries, deepening and accelerating the processes of globalization of the international order based on potential colonial powers (Horowitz et al., 2018). Capitalism deepened the development gap between metropolises and colonies, consolidating the Eurocentrism of the international order until World War I. Nowadays, it is recognized that technologies are a catalyst for changes in the international order. The current logic of state power cycles (Gałganek, 1992; Kennedy, 1994) will be verified by the adaptation of technological innovations under the control of governments.

This study assumes that artificial intelligence (AI), like other breakthrough technologies for the functioning of society and individuals, will influence the functioning of states and changes in international perception. Technologies (technological innovations) can have a three-fold impact on state policies: 1) they introduce new attributes of power (from the fact of having strategic raw materials to the advantage resulting from lifestyle and the dominance of the language on which new media are based); 2) they revise the importance of traditional factors of power and security (exclude the inviolability / impassability of natural borders, lower the rank of the main element of the current advantage of the leading countries, e.g. navy and air force); 3) they provide opportunities for radical advancement in the structure international system, in the case of using fields that were previously marginal but are now leading.

Using the potential of AI brings great development potential to every international entity. This is indicated by publications analyzing current and forecasting new areas of use of this dynamic and unpredictable technology in the international dimension (Vijayakumar, 2023; Sajduk, 2019). From the perspective of international research, AI is a disruptive technology, which should be understood as causing a fundamental change that revises the current system of social, economic and political relations (Sajduk, 2020). "They show enormous transformative potential and over time they themselves transform into broadly applicable technologies" (Śledziowska, Włoch, 2020, p. 36). They lead to changes in the functioning of international regimes (understood as sets of rules, norms, principles and decision-making procedures developed by states and other actors).

The transformative effects of artificial intelligence are particularly important to understand in the context of international relations. Due to integration with various sectors of society's activity, this technology is slowly shaping geopolitical trends (Kapetas, 2020). In early November 2023, representatives of 28 countries from different regions of the world took part in an intergovernmental conference in Bletchley Park near London devoted to unifying positions on the control and legal regulation of the further development of artificial intelligence. The final political declaration committed to "identifying security threats related to artificial intelligence" and building policies that take into account the risks associated with experiments of the technological commercial sector operating under the jurisdiction of the conference participants (Bletchley Declaration, 2023). The choice of the conference location was to remind contemporaries that it was countries, not technology corporations,

that inspired the creation of AI 80 years ago. Research on artificial intelligence emerged during the Cold War, when the technological race between the communist bloc and Western democracies supplemented the traditionally understood arms race. In this case, the term arms race is commonly understood as competition between superpowers in terms of military potential in order to gain a numerical and qualitative advantage. It was from Bletchley Park that the cryptography genius Alan Turing was associated, he was considered the creator of the so-called artificial intelligence test (Turing test). Together with the creator of the system theory – John von Neumann, A. Turing is considered a precursor of research on the issue of "machine thinking". A. Turing was associated with the Government Communications Headquarters, where he coordinated the work of the international team involved in decoding the German ENIGMA encryption device. In turn, J. Neumann was involved in the Manhattan Project. This gave an impulse to create new areas of cybernetics. Progress in the field of digital technologies was combined with the basics of AI, i.e. machine learning, which was essentially the improvement of the autonomy of algorithms in computer systems. Over the following decades, policy impacted digital technologies in an increasing number of areas, and this impact did not imply clear definitions allowing the identification of AI.

"In the current stage of AI development, it can perform activities including recognition of patterns, statistics, and images and natural language processing" (Vijayakumar, 2023, p. 8). AI permeates all human activity, including all spheres of the functioning of states (Wendt, 2022). However, more important is not its comprehensive application but the depth of autonomy of the functions it performs and will perform. Hence the current working division into weak AI (focused on specific scope of machine learning), general AI (which is supposed to have the ability to para-intuitive self-learning and decision-making), and finally artificial superintelligence – equipped with consciousness (and therefore – potentially – personality). Other divisions are also used (Economic..., 2017):

- Large-scale Machine Learning: design of learning algorithms, as well as scaling existing algorithms, to work with large data sets;
- Deep Learning: model composed of inputs such as image or audio and several hidden layers of sub-models that serve as input for the next layer and ultimately an output of activation function;
- Natural Language Processing (NLP): algorithms that process human language input and convert it into understandable representations;

- Collaborative Systems: models and algorithms to help develop autonomous systems that can work collaboratively with other systems and with humans;
- Computer Vision (Image Analytics): the process of pulling relevant information from an image or sets of images for advanced classification and analysis;
- Algorithmic Game Theory and Computational Social Choice: systems that address the economic and social computing dimensions of AI, such as how systems can handle potentially misaligned incentives, including self-interested human participants or firms, and the automated AI-based agents representing them;
- Soft Robotics (Robotic Process Automation): automation of repetitive tasks and common processes such as customer servicing and sales without the need to transform existing IT system maps.

“The use of AI to automate tasks involved in surveillance (e.g. analyzing mass-collected data), persuasion (e.g. creating targeted propaganda), and deception may expand threats associated with privacy invasion and social and nations manipulation” (Brundage et al., 2018, p. 6). This study assessed selected components of AI development at the state level, outlining the relationship between the state political system and between the social perception of AI and the dynamics of the development of this technology.

2. Materials and Methods: Political strategies and geographical distribution of AI leader countries

AI development statistics show a dramatic acceleration in investment by the private sector and states since the second half of the last decade. In this study, data from two research centers were selected for analysis. The first is the Stanford University research team authorizing “The AI Index 2023 Annual Report” (Maslej et al., 2023). The second is the British news portal Tortoisemedia, specializing in independent research analogous to the work of think tanks. The subject of the analysis was data contained in “The Global Artificial Intelligence Index 2023” in the field of investment, innovation and AI implementation from 62 countries that have entered the path of consciously building AI development policy (Mostrous et al., 2023).

The overall results of AI development in the world for 2022 indicate the leading position of the US, followed by China, Singapore, Great Britain,

Canada, South Korea and Israel (Mostrous et al., 2023). The overall results of the USA marked with the total value of parameters = 100, indicate a large development distance in relation to the next in the ranking: China (61.5), Singapore (49.7), Great Britain (41.8). However, other countries have the most comprehensive AI development strategies: Saudi Arabia, Germany, China, Spain (which is the only country in Europe that has a separate ministry for AI), South Korea and Russia. The US is in 8th place in this ranking, and Poland is in 11th place (Mostrous et al., 2023).

In the European region in 2022, there are noticeable disproportions in government spending for AI development. Countries such as Germany and France allocate between USD 5 and 4 billion for this purpose, while Great Britain and Italy spend just under USD 3 billion. A stark contrast is the spending of Russia and the Netherlands, which oscillates between USD 1.5 billion and USD 1.1 billion. Among the surveyed European countries, Poland ranks penultimate with the result of USD 15 million, and in the proportion of government expenditure to GDP – it ranks last (Mostrous et al., 2023).

The UK initiative for global regulation of the rules of AI development was mentioned above. It is worth noting that over the last 4 years there has been a deepening involvement of the British authorities in promoting the idea of AI as a tool of state power, and Prime Minister Sunak’s initiative indicates that he is the voice of talented programmers from the British Commonwealth countries interested in their professional future and life in Europe (Rashi Sunak is the son of Hindu immigrants). In this context, it is worth mentioning the rankings regarding the professional competences of programmers from individual countries, indicating the greatest IT human potential in Ukraine, China, Poland, the Philippines, Romania, Brazil, Taiwan, the Czech Republic, Canada and India (Tagliaferri, 2023).

State authorities diagnose the need to create a legal framework post-factum, i.e. in response to the identification of subsequent industry applications of AI, and treat these regulations as elements of protecting social security (Dutton, 2018a). In the case of artificial intelligence, there is a growing need to take the government initiative in the legal regulation of database management as a basic tool for improving AI. Artificial Intelligence Index 2023 documents that 37 countries have legal regulations in the field of AI, while in 2016 only one country had such solutions (Maslej et al., 2023, p. 269). In the last year, the largest increases in regulations have been recorded in the USA (9), Spain (5) and the Philippines

(4). From 2016 to 2022, the US also led (22), followed by Spain (13), Portugal (10), Italy and Russia (9).

The rankings of countries that had AI national strategies in 2017–2022 show great dynamics, which is reflected in both expert analyses and rankings. By mid-2018, 24 countries as well as the European Commission had adopted AI development strategies (Dutton, 2018b). In 2017, three countries had such strategies: China, Canada and Finland, which indicated relative proportionality in terms of geographical representation; in 2018 – 7 countries: Australia, France, Germany, India, Mauritius, Mexico and Sweden. In 2019, there was a culmination of announcing AI strategies in 26 countries and regions: the most, i.e. 12, in Europe: in Austria, Cyprus, the Czech Republic, Denmark, Estonia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, in Romania, Russia; 5 countries in the Americas: Argentina, Chile, Colombia, the USA and Uruguay; 4 in Asia: Bangladesh and Singapore, the United Arab Emirates, Qatar; 3 countries in Africa: Botswana, Kenya, Sierra Leone. The year 2020, due to the COVID 19 pandemic, brought a decrease in the adopted strategies to only 14. Europe dominated (10 countries): Bulgaria, Croatia, Greece, Hungary, Latvia, Norway, Poland, Serbia, Spain, Switzerland, which was related to the acceleration of work on the White Paper on Artificial Intelligence (February 2020). In Asia, Korea, Saudi Arabia and Indonesia adopted strategies, while in Africa it was Algeria. In 2021, strategies were announced in Brazil, Ireland, Peru, Philippines, Slovenia, Tunisia, Turkey, Ukraine, United Kingdom, Vietnam, and in 2022 in Italy and Thailand.

3. Results and Discussion

3.1. Social perception of artificial intelligence – between optimism and caution

Technology is the result of social demand and ways of meeting it (Suchman et al., 1999). The AI technology is presented by researchers as a product of social practices in the field of digital technologies (Brauner et al., 2023). At the current stage of creating reports and analyses of AI development factors in individual countries, public opinion and its ideas are also taken into account. The Artificial Intelligence Index 2023 developed at Stanford University indicates large disparities in the perception of AI between individual nations. Residents of China (78%), Saudi Arabia (76%), India (71%), and Peru (70%) see the greatest benefits from the development of AI. The

level of optimism is falling among Western countries: it is the lowest in France (31%), Canada (32%), the Netherlands (33%), the USA (34%), Germany and Australia (37%). Polish public opinion, despite typical distrust, achieved a higher trust rate, i.e. 48%. This study shows that the greatest enthusiasm towards AI is demonstrated by societies in countries that see AI as a tool for a development leap, or that have adopted AI development strategies in recent years, supported by a broad information campaign at the government level. For these reasons, in the study of regions in terms of attitudes towards the positive impact of AI on development in a 20-year perspective, a huge advantage was recorded in the East Asian region, and the greatest skepticism in Africa (Maslej et al., 2023, p. 328).

Since most of the public has no IT education, they base their knowledge on guesses and analogies, and replace thinking with beliefs and emotions. The four main narrative scenarios of hope, as well as the four scenarios of fear, are reflected in both individual opinions about AI and trends in the AI management policy (Cave, Dihal, 2019). Optimists see technologies as a source of potential human immortality, protected by advanced medical techniques and progress in pharmacology. Pessimists are ready to attribute a turn towards the dehumanization of individual lives to the same trends, linking medical progress with transhumanism. Supporters of freedom from the need to perform work that can be assigned to robots stand in opposition to skeptics who accuse the human species of technological regression. Another dimension of this debate is the juxtaposition of the culture of pleasure deepened by technological solutions (care, service, substitute for partnership) with extreme alienation, where thinking machines can even mediate interpersonal relationships. "In a dystopian vision, super-intelligent machines would exceed the ability of humanity to understand or control. "If computers could exert control over many critical systems, the result could be havoc, with humans no longer in control of their destiny at best and extinct at worst" (Cave, Dihal, 2019, p. 77).

The polarity of the narrative about AI is based on the exploitation of pessimistic and optimistic moods, which in the case of democratic countries are an important factor of pressure on the authorities. In recent years, the herald of the indispensability of state supervision over the development of AI has been the hundred-year-old (sic!) former adviser to American presidents and still an extremely active researcher, Henry Kissinger. His book titled *The Age of AI: And Our Human Future* written with the participation of Daniel Huttenlocher and Eric Schmidt

was published in fragments in the American press before its full edition (Kissinger et al., 2021). Kissinger and co-authors warn against the loss of control over technological progress, dehumanization and the threats of mass destruction from the AI arms race (Huttenlocher et al., 2021). UN Secretary General Antonio Gutierrez has been speaking in a similar tone for several years, leading to the creation of an expert Advisory Group on AI in mid-2023. Members are professionally involved in various fields of AI development, management, implementation and legal regulation and, in accordance with the principle of parity, come from all regions of the world (S-GABM-AI, 2023). This structure is similar in nature to the High-Level Expert Group on Artificial Intelligence (HLEG) operating since June 2018 within the European Commission, composed of fifty-two researchers. AI), whose task was to develop recommendations for the development of the artificial intelligence policy. In June 2023, the EU draft "AI Act" was adopted by the European Parliament, i.e. the EU law on the harmonization of the rules for the use of AI, excluding the defense and science and research sectors. Public perception of AI is fundamental to how AI is implemented, developed, and legally protected. It also indirectly affects the foreign and security policy and it affects the style of involvement of technological powers with different political systems in AI geopolitics (Potulski et al., 2022).

3.2. Political system and technological development styles of AI superpowers

In international relations research, the development of AI refers to changes in the international position of states as a group of participants in international relations, and even more often – to potential changes in the international hierarchy of states. Currently, this is expressed in the assessment of the rankings of the development of the AI sector, both on a global and regional scale. The subject of reflection is also a diagnosis of how AI is used by governments to strengthen or maintain the current international status (Bógdał-Brzezińska, 2020).

It was mentioned above that the development of digital technologies was initially conditioned by the Cold War arms race of the then superpowers: the USSR and the USA. With this in mind, one can question the belief in the uncontrolled influence of technology on the international position of countries. Politics regulates technological progress as a specific process of using new knowledge, and the alliance of knowledge and power does not exclude modern technologies. It is worth noting, however, in the case of the main powers active in the field of cyberpolitics and information policy on the Internet, that these countries clearly differ from each other in the way they develop global digital dominance, in their time and context (Table 1.).

Tab. 1. Components of the ICT policy of the USA, Russia and the PR China.

State	Political system	Beginning of ICT Development	Leading components of the ICT policy
USA	Democratic	90th	Difficulties in protecting critical infrastructure – lack of regulations and tools to influence the private sector, collision between individual freedom and economic liberalism and national security, attempts to shorten the distance from rivals using cyberattack tools
Russia	Non-democratic	90/2000.	Initial attempts at technological autonomy, abandonment of KBE development, focus on military ICT applications, specialization in information combat
PR China	Non-democratic	2000 th	strategy of imitation of Western technological solutions, non-compliance with intellectual property protection rules

Source: own study.

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It should be noted that Western countries, led by the USA, are becoming hostages of the political system specific to liberal democracies. It was in the USA that the Internet and large transnational companies that currently support online communication (Google, Facebook) were

developed. However, despite the early use of ICT in the development of the state's international potential, American political principles, i.e. freedom of speech, the right to privacy and the policy of economic liberalism, weaken the US participation in international competition.

The USA – a leader in the field of computerization of sectors of the national economy – has become imperceptibly defenseless due to the lack of protection of critical infrastructure, because its significant part is operated by the private sector, on which the central authorities have not yet effectively imposed the obligation to protect digital resources against cyberattacks.

The United States is currently in first place in the overall parameters of AI development. Even during Obama's presidency, cross-sectional documents appeared regarding the development of AI in relations between the government and the private sector: "Preparing for the Future of Artificial Intelligence" or "National Artificial Intelligence Research and Development Strategic Plan". Trump's presidency linked state patronage in the field of AI with the demand for world leadership and national security. However, AI gained a regulatory dimension only in the fall of 2023 in the form of President Biden's "Order on Safe, Secure, and Trustworthy Artificial Intelligence", which promises to fight disinformation, protect safety in the use of AI and consolidate American global leadership. The US IT/AI development advantage so far has been based on several variables: the lack of a barrier to using English as a programming and communication tool in the technology sector, a liberal economy favoring the inflow of talented IT staff from other countries. This last variable is also a threat. In the USA, there are students and scientists and IT specialists who work as emissaries of white intelligence and acquire knowledge and know-how that can be transferred to the US's rivals, i.e. Russia and China. Another challenge is the lack of government pressure to educate programmers for the defense sector and incentives for cooperation with the army addressed to young hackers from poorer social backgrounds. The USA still has the largest number of AI-oriented start-ups, and above all, a kind of private-public partnership connects the American state with GAFAM corporations (Smyrnaiois, 2016), even in conditions of their financial instability and restrictions on their influence by regulations limiting access to digital data from the EU (Smyrnaiois, 2023).

In the case of Russia, state control was lost over two republics developing the IT sector within the structures of the USSR: Belarus and Estonia (Wendt, Bógdał-Brzezińska, 2022). At the beginning of the 21st century, attempts to introduce native Cyrillic

software were not successful, and the concept of redirecting the socialist economy towards a knowledge-based economy was abandoned (Bógdał-Brzezińska, 2004). At the same time, Runet was consistently developed as the "national space of the Internet", introducing mechanisms of censorship and information warfare (Bógdał-Brzezińska, Wendt, 2020). The first served to limit the activity of the opposition and the possibility of confronting knowledge from independent sources with official state propaganda. The second has now become a key method of non-military influence on the international environment.

In September 2017, Russian President V. Putin, calling AI the future of the world, signaled Russia's entry into the competition between technological powers. The Russian political system, described as hybrid, combines elements of democracy with traditionally understood authoritarianism. Russia's political regime, combined with the strong position of its defense sector, aims at deeper development of artificial intelligence in controlling the international information environment. The challenge of Russia's defense potential is the demographic deficit of soldiers in potential future wars. Therefore, research in the field of autonomous weapons is promoted: drones, unmanned ground vehicles, unmanned mini-submarines for transporting nuclear loads. Artificial intelligence, defined in terms of national security (Wendt, 2023), is becoming a means of reviving Russian superpower understood as the ability to have cutting-edge technological solutions. It is also a factor in Russia's participation in the AI arms race (Geist, 2016; Blumenthal, 2023). In 2019, the Russian authorities conducted a successful experiment in disconnecting the Russian Internet from the global network (Bógdał-Brzezińska, Wendt, 2020). A presidential decree on the development of artificial intelligence was also announced, containing an AI development strategy until 2030 (Ukaz..., 2019).

In the case of the PRC, a clearly delayed accession to the cyber powers could be observed, with a characteristic failure to comply with the principles of patent protection and intellectual property rights in the process of technological development. It is worth noting that the strategy of mimicry used on this occasion, which from the Western point of view is a type of appropriation, is not a new, endemic Chinese way of proceeding. Japan's Westernization developed in a similar way after 1868, but it took place in a different international legal environment that did not expose it to accusations of patent theft. In the case of China, an additional factor strengthening its position in global ICT was the scale of production resulting from low production costs

combined with enormous human potential.

Putin's statement quoted above was a reaction to China's technological activation in the middle of the last decade. China presented the Next Generation AI Development Plan 2017–2030 in 2017 (Next Generation AI..., 2017). This can be read as a formalization of technonationalism, which has been developing for over a decade and is associated with deepened surveillance and social control. The high level of digital technologies available to citizens goes hand in hand with the digital loyalty policy symbolized by the Social Credit System (Dziwisz, 2020). It was declared to achieve a series of breakthrough AI products by 2020 and establish an international competitive advantage over other countries. With its specific mixture of authoritarianism and dynamic capitalism, China is gaining an advantage in technological competition. Collectivism and the digital surveillance system (so-called cyber-authoritarianism) reduce individual ambitions, while capitalism favors innovation. The potential for advantage lies in the number of young adults interested in rapid social advancement. China's challenge at this stage is the poor knowledge of English among middle and lower-level programming staff. The advantage, however, is the specific private-public partnership between the government and the private sector, which results in the division of tasks between the companies of the Chinese equivalent of GAFAM: Baidu is responsible for autonomous vehicles, Alibaba Cloud (Aliyun) for smart cities, Tencent for medical imaging, and iFlytek for smart voice. It is worth noting that Baidu leads China's National Engineering Laboratory of Deep Learning Technology and Applications and the National Engineering Laboratory of Brain-Inspired Intelligence Technology and Applications.

In the case of authoritarian states, it is easier to use large databases for military purposes because access to them is supported by digital censorship mechanisms. Moreover, public discourse is shaped in such a way that national security justifies all forms of violations of the law, from human rights in the field of privacy protection to intellectual property rights in the field of infringement of patent rights. Therefore, researchers claim that the near future of using AI for geopolitical purposes belongs to authoritarian regimes (Dominioni, 2019, p. 166–169).

4. Conclusions

The question about the validity of concerns about the development of AI is answered by both sociologists and international relations analysts. Researchers of the usefulness of the theory of international

relations for the study of AI, Bhaso Ndzendze and Tshilidzi Marwala, (Ndzendze, Ndzendze 2023, p. 36) point out that threats regarding bioethics and the protection of human species identity will not be provided by current AI in the narrow sense (i.e. intended for acquiring skills within the scope of defined tasks), but AGI, i.e. artificial general intelligence, understood as software capable of projecting skills acquired in one area to other areas of application. From the perspective of political realism research, there is a belief that AI will require redefining the key position of countries in the technological race using artificial intelligence. In a similar way, the problem can be perceived from the perspective of another trend – social constructivism, where the key question about the identity of an actor in international relations took into account the individual subjectivity of an individual, the collective subjectivity of a social movement and the institutional subjectivity of an international organization, but has not yet taken into account the agency of impersonal intelligence. The reflection on the need to notice upcoming changes thanks to new entities has already appeared in research in the past decade. The causative influence of “non-human” elements of the international environment (Internet of Things) was emphasized. The impact of the “new geography of innovation” on international policy was diagnosed (Stępień, 2016). The moment of a great perceptual breakthrough was heralded, which would revolutionize theoretical thinking about international relations and the patterns of decision-making processes in international relations. “Automated systems are consequential actors in global politics” (Kiggins, 2018, p. 211), which indicates that digital innovations of AI can be perceived as an actor replacing humans in defense or propaganda activities. It was noted that the innovation sector (science and business) would redefine social norms and practices on a global scale. This assumption contradicted empirical research from the end of the 20th century, which showed that technologies have socially integrating properties, but their application values much more depend on the cultural specificity of a country or a region of the world than on the level of technological development (Suchman et al., 1999, p. 404). This article seems to confirm the necessity to revise “the concept of ‘power’ in the era of increased machine autonomy” (Ndzendze, Marwala 2023, p. 66). As part of the debate on the world powers, reference should be made to countries' innovativeness, patent trends and the export of the AI technology. The issue of the relationship between the international position of a country and the level of social fears and hopes related to AI should also be taken into account.

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