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Artificial Intelligence and China's Grand Strategy

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ABSTRACT: This paper offers a preliminary study analyzing the role of artificial intelligence (AI) in the People's Republic of China's grand strategy. This paper examines the discourse on the role of artificial intelligence in China and how it fits into China's grand strategy policies. Particularly, this paper will focus on three grand strategy themes: leader's perception, grand strategy means, and grand strategy ends. China's evolving national interests and strategic ideas are the central concern for its grand strategy. Beijing has the most ambitious AI strategy of all nations and provides the most resources for AI development. Since 2017, the development of AI has become part of China's grand strategy plans settings out goals to build a domestic artificial intelligence industry. The AI sector has turned into a national priority which was included in President Xi Jinping's grand vision for China. China's goals are to make the country "the world's premier artificial intelligence innovation center for AI" by 2030. Ultimately, AI will foster a new national leadership and establish the key fundamentals for great economic power. There are many AI applications in several grand strategy means, including military and economic policies. This paper uses a qualitative content analysis method to examine the case. Data was collected from Chinese leaders' speeches, government statements, official publications, and Chinese state media. This paper concludes that AI will become one of the key components in China's grand strategy means, including economic, military, and intelligence capabilities. By promoting AI technology, China's grand strategy ends are to maintain national power, national face, and international reputations.

KEYWORDS: China's grand strategy, Artificial intelligence, China dream

Introduction

The grand strategy of the People's Republic of China (PRC) has become a focal point in International Relations (IR), Security Studies, and Strategic Studies since the rise of China at the end of the Cold War era (Lin 2019, 208). The People's Republic of China (PRC) is an emerging power that became the second-largest economy in 2010. To maintain economic growth and industrial competitiveness, China emphasizes its economic and technological development. The Chinese government considers a new industrial revolution which could be the key to retain Chinese economic and military power. Artificial intelligence (AI) is then a key technology that would make China stand out globally. With the world's largest population, its large internet audience, and data resources, AI would become the "new oil" of world politics (Nye 2020, 125). In fact, over the past years, China has been investing heavily in the research and development of AI and has set a goal to be the global leader in artificial intelligence by 2030. Some experts believe that China could achieve its goals, given the importance of machine learning as a general-purpose technology that affects many domains, China's AI development in its strategy has particular importance (Lee 2018; Nye 2020, 126).

Therefore, this paper asks: "what is the role of artificial intelligence in China's grand strategy?" The term "grand strategy" was officially introduced by Liddell Hart in 1929, emphasizing that grand strategy – higher strategy – was about more than winning the war, but achieving "a state of peace, and of one's people, [that] is better after the war than before" (Hart 1967). Later, according to Bernstein et al. (1994), grand strategy expands on the traditional idea of strategy beyond military means to include diplomatic, financial, economic, informational means (Murray, Knox, and Bernstein 1996). In later interpretations, Barry Posen describes grand strategy as "a political-military, means-end chain, a state's theory about how it can best "cause" security for itself" (Posen 1986). John Lewis Gaddis posits that grand strategy "is the calculated relationship of means to large ends" (Gaddis 2002). This

author adopts the definitions proposed by Barry Posen and John Gaddis. A grand strategy is a nation-state's theory about producing security for itself (Posen 2014). In this paper, the author first offers an overview of AI development in China, followed by a theoretical perspective of China's grand strategy concepts. Next, this author explains the methods used to conduct empirical analysis. Finally, this author presents the results and discussions. Although this paper is a preliminary research on the role of AI in China's grand strategy, this study has its significance, as the Chinese use of AI in its grand strategy is still an understudied topic.

The Development of Artificial Intelligence Plans in China

In May 2015, Chinese Premier Li Keqiang and his cabinet released "Made in China 2025" (MIC 2025, *zhongguozhizao erling erwu*), a national strategic plan to further develop the manufacturing sector of China (The State Council of China 2015). The plan aims to upgrade the Chinese industrial manufacturing capabilities, growing from labor-intensive workshops into a more technology-intensive powerhouse (The State Council of China 2017a). The key objective of MIC 2025 is to identify essential technologies, such as artificial intelligence, 5G, aerospace, semiconductors, electric vehicles, and biotech, to level up Chinese industrial power and alter the dynamics in global markets. On July 20, 2017, the State Council of China (2017b) issued the "New Generation Artificial Intelligence Development Plan" (AIDP, *xin yidai rengong zhineng fazhan guihua*). This policy outlines China's strategy to build a domestic AI industry and become a leading AI power by 2030, and China will become the world's premier artificial intelligence innovation center. Chinese President Xi Jinping called for embedding advanced technologies into the real economy to foster growth engines and new business models (Xie and Jing, 2017). This was the first time AI was mentioned explicitly in a Communist Party of China work report (Future of Life Institute, 2020). The two aforementioned documents "form the core of China's AI strategy" (Allen 2019, 3). At the operational level, in 2016, China's Minister of Industry and Information Technology (MIIT 2020) released the "Three-year Guidance for Internet Plus Artificial Intelligence Plan (2016-2018)," which focuses on enhancing AI hardware capacity, strong platform ecosystems, AI applications in important socioeconomic areas, and AI's impact on society.

In December 2017, the MIIT issued the "Three-Year Action Plan for Promoting Development of a New Generation Artificial Intelligence Industry (2018–2020)," which sets out targets that strive to achieve major breakthroughs in basic research and a series of artificial intelligence products by 2020, form an international competitive advantage in key areas, deepen the integration of artificial intelligence and the real economy, and integrate AI into manufacturing industries (Bhunia 2017). The Ministry of Science and Technology (MOST), and a new office called the "AI Plan Promotion Office" are responsible for implementing and coordinating the emergent AI-related projects. An AI Strategy Advisory Committee was also formed in 2017 to research strategic issues related to AI. Additionally, an AI Industry Development Alliance was also established, which is co-sponsored by more than 200 enterprises and agencies nationwide and focuses on building a public service platform to develop China's AI industry (Future of Life Institute 2020).

In 2018, The National Innovation Institute of Defense Technology (NIIDT) had established two research organizations focusing on the military use of AI and related tech: the Unmanned Systems Research Center (USRC) and the Artificial Intelligence Research Center (AIRC). The AIRC also likely conducts classified work for the Chinese Military and Intelligence Community (Allen 2019, 8). In May 2019, the Beijing AI Principles (*rengong zhineng Beijing gongshi*) were released by the Beijing Academy of Artificial Intelligence (BAAI). The principles are proposed as an initiative "for the research, development, use, governance and long-term planning of AI, calling for its healthy development to support the construction of a community of common destiny, and the realization of beneficial AI for

mankind and nature (BAAI 2019)." The principles have been officially endorsed by leading universities (including Tsinghua University and Peking University), national research institutions (including Institute of Automation, Chinese Academy of Sciences, Institute of Computing Technologies, and Chinese Academy of Sciences), and the Artificial Intelligence Industry Technology Innovation Strategic Alliance (AITISA).

Variables of China's Grand Strategy Analysis

This paper differentiates three variables for analysis. The first variable is the leader's perception in grand strategy decision-making. Andrew Scobell (2014) argues that there are two faces of Chinese strategic culture, which affects leader's images. The first face of strategic culture is concerned with a country's self-image (the perceptions and realities of its own dominant strategic traditions and the policy outcome they produce). The second face of strategic culture involves the image constructed by the Chinese leaders towards other countries (Scobell 2014, 52). In an empirical study, Lin concluded that "Chinese leaders view themselves as peaceful and defensive, which is based on traditional cultural philosophy.

On the contrary, Chinese leaders tend to characterize the United States as more focused on aggressive and offensive intentions concerning China" (Lin 2021, 18). Guiding ideology is another factor. Dominant ideologies can affect the state's attitudes toward international affairs and willingness to use force (Haas and Haas 2005). Political ideology is a "set of beliefs about the proper order of society and how it can be achieved" (Erikson and Tedin 2015). Marxism-Leninism became the first official ideology.

The second variable is grand strategy means. This paper argues that the Chinese grand strategy policy includes military policy, diplomacy, economic policy, intelligence instruments, and state extraction of resources. Military policy is a set of ideas implemented by military organizations to pursue desired strategic goals (Gartner 1999, 163). Diplomacy is the implementation of foreign policy, as distinct from the process of policy formation. Diplomacy can also help drive and guide cooperation between military, economy, and intelligence services (Griffiths, O'callaghan, and Roach 2008, 79). Economic policies are the actions that a government takes to influence the economy of a state (Brown and Ainley 2009, 5). Intelligence instruments are essential tools for Chinese foreign policy and grand strategy. Sun Tzu's words have often been quoted: "Know the enemy and know yourself; in a hundred battles, you will never be in peril" (Tzu 2007). Neoclassical realism identifies state extractive and mobilization capacity of domestic resources as a crucial intervening variable between systemic imperatives and the grand strategy policies states undertake (Schweller 2009).

The third variable is grand strategy ends. The goal of the Chinese grand strategy is a debated issue as the Chinese government did not reveal it explicitly to the public. There are at least three grand strategy goals that can be identified. First, maintaining national power. Waltz claims that national power is constituted by a web of military, economic, and political capabilities, asserting that a "state's political competence and stability" constitute an inseparable element of national power (Waltz 2010, 131). Second, China's grand strategy is to maintain the Chinese national face and international reputation. Peter Hays Gries termed it as "face nationalism," which is linked to China's domestic audience and external relations (Gries 1999, 63).

Methods, Data Collection, and Coding Procedures

This paper employs qualitative content analysis to understand the role of AI in China's grand strategy. Data was collected from state media, government officials' speeches, and Chinese Communist Party official publications (all in the Chinese language). The author used Chinese keywords searching AI strategy, AI policy, and AI development. The data ranges from 2015 to

the present time. Since only a small number of texts meet this criterion, this researcher analyzes all of them. This author determined 14 documents as evidence for analysis, and 58 codes have been coded from the documents.

Regarding the set of categories and coding rules, this paper uses variables based on the above theoretical perspective to examine the role of AI in China's grand strategy. Three groups of categories are examined, including leader's perception, grand strategy means, and grand strategy ends. In the "leader's perception" category, this author assesses the texts relating to indicators, including "leader's perception on the role of AI," "ideology," "China's self-image," and "image towards others." In the "grand strategy means" category, this author investigates AI applications, including military policy, diplomacy, economic policy, intelligence instruments, and state extraction of resources. In the "grand strategy means" category, this author examines the related concepts of national power, national face, and international reputation.

Within the coding and analysis process, this author located the key terms in documents, identified what other words or phrases appear next to it, and analyzed the meanings of these relationships to understand better the role of AI in China's grand strategy. After reviewing the data, this author manually coded the data in the appropriate categories. Next, this author used MAXQDA software to help the process of counting and categorizing words and phrases. MAXQDA is a software program designed for computer-assisted qualitative methods of data and text analysis. After completing the coding, the collected data is analyzed to find patterns, translated into the English language, and conclusions are drawn in response to the research question.

Since this is a preliminary study, this study needs to highlight some research limitations. First, content analysis can sometimes be overly reductive, neglecting some context and ambiguous meanings. Second, the coding process and results interpretation could be biased, which could affect the reliability and validity of the results and findings.

Results and Discussion

Figure 1 shows the relationships between different codes and the frequency of each code. The following codes that have no relations have been ignored by the software, including "state extraction of resources," "diplomacy," "ideology," and "image of others." The code map shows that the discourse of AI in grand strategy focuses on the perception of the roles and functions of AI, which are mainly connected to the discourse of military policy and national power. Military power is connected with intelligence instruments. National power has strong relationships with economic policy and international reputation.

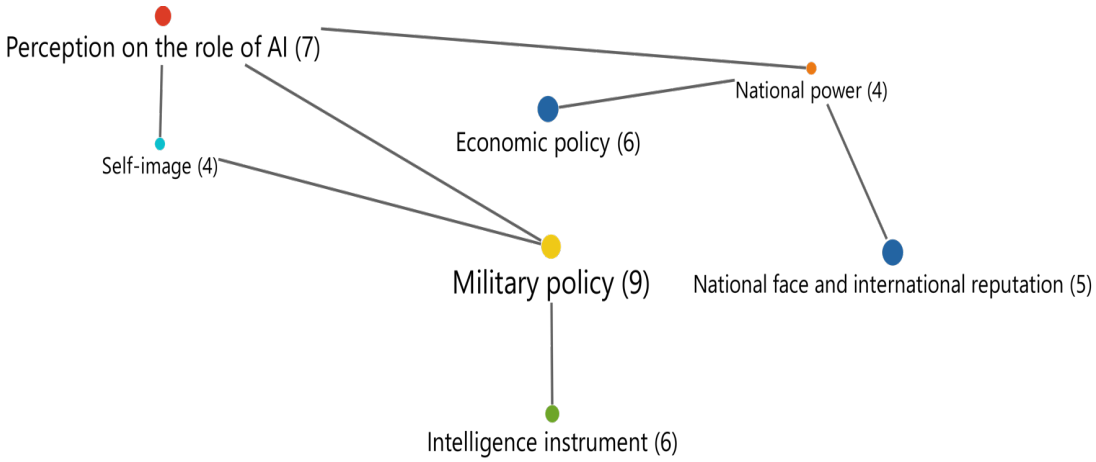

Figure 1. Code Map of AI in China's grand strategy discourse

In Figure 2, the discourse of AI centers on AI as a means of grand strategy, including the military policy, intelligence instrument, and economic policy. The field of military policy shows more weight in the results. There is almost no mention of diplomacy as a grand strategy means. Although China does not make an explicit connection between AI and its foreign policies, China's leadership believes that AI technology is critical to the future of global military and economic power competition. A leader's perception of the role of AI is a key factor in China's grand strategy discourse. Regarding the grand strategy ends, national power and international reputation appear less than the grand strategy means.

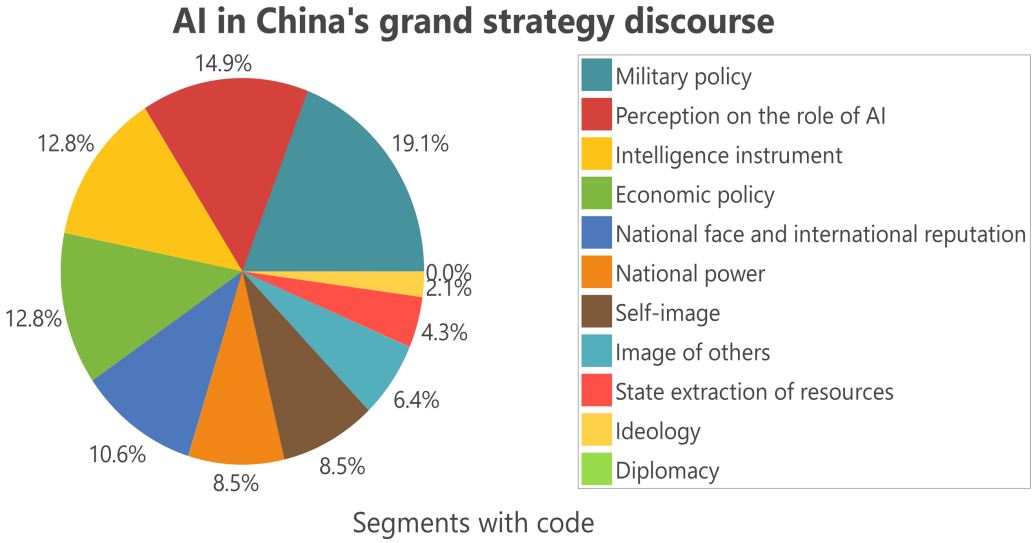

Figure 2. Segments with code (AI in China's Grand Strategy Discourse)

Leader's perception

Chinese top leaders believe that AI will become a crucial tool for China's long-term development. The guiding ideology for the development of artificial intelligence is Xi Jinping thoughts. In the "*Notice of the State Council on Issuing the Development Plan for the New Generation of Artificial Intelligence*," based on "the spirit of the 18th National Congress of the Communist Party of China and the third, fourth, fifth, and sixth plenary sessions of the 18th National Congress of the Communist Party of China" and the "spirit of General Secretary Xi Jinping's series of important speeches," China aims to accelerate the deep integration of artificial intelligence with the economy, society, and national defense (The State Council of China 2017b).

Regarding the self-image of the role of AI, China's leadership believes that AI technology will be the "dominant factor in determining future battles (Xinhua 2019)," emphasizing AI's critical role in the future of global military and economic power competition. Chinese leaders posit that, over the past years, Chinese AI technology is becoming increasingly mature, making China one of the major countries in artificial intelligence industrialization (Zijuan 2021). However, there is still a gap between China and the developed countries on the overall AI development (State Intellectual Property Office 2018). About the image of others on the role of AI, China perceives that world science and technology are soon going to have a breakthrough in the development of AI. Therefore, the Chinese People's Liberation Army (2019a) "must accelerate the advancement of military intelligence construction and accelerate the forging of an intelligent army." In an official talk, President Xi pointed out that "Artificial intelligence is a strategic technology that leads this round of scientific and technological revolution and industrial transformation…and an important strategic instrument for us to win the initiative in global technological competition (Xinhua 2018)."

Grand strategy means

Chinese leaders consider AI as an important military and intelligence means. In his report to the 19th National Congress of the Communist Party of China, President Xi points out that AI in military development will help achieve the party's goal of strengthening the military in the new era (Zhi-Zhong 2020). He vows to accelerate the development of "intelligenized military" (*junshi zhineng hua*). To use AI in developing weapons, China focuses on the dual needs of intelligent warfare system operations and constructing an intelligent weapon and equipment system (People's Liberation Army News 2019b). AI in military development is becoming a powerful driving force to promote military reforms, and it will have a profound impact on rules of operations and methods of combat in the future (Xinhua 2019).

AI is also an economic means. Specifically, Chinese leaders consider AI as the "new engine" (*xin yinqing*) of economic development. AI will release the enormous energy accumulated in previous technological revolutions and industrial transformations profoundly changing human production (The State Council of China 2017b). President Xi states that AI development is an important strategic starting point for China to win the global science and technology competition and an important strategic resource to promote the optimization and upgrading of industries and the overall rise of productivity (People's Net 2019). Xi argues that China must seize the opportunity to integrate AI into industrial development providing new momentum for high-quality development, improving the intelligent level of traditional infrastructure, and forming an infrastructure system that meets the needs of the Chinese economy and society (Xinhua 2018). For example, China uses the Belt-and-Road Initiative, in which AI "has become an important theme of international cooperation on the BRI, sharing opportunities for intellectual development (Xinhua 2020a)."

Grand strategy ends

The goals of pursuing the China Dream (*zhonggue meng*) and the Strong Army Dream (*qiang jun meng*) are the primary grand strategy ends, enhancing Chinese national power and international prestige. China's 2017 National AI Development Plan identifies AI as a "historic opportunity" for national security leapfrog technologies, and suggests China should "firmly seize the major historic opportunity for the development of AI . . . and support national security, promoting the overall elevation of the nation's competitiveness and leapfrog development." Chinese leaders believe that China is still in a period of important strategic opportunities that can expand AI technologies. With the help of AI, China will develop better network power, digital power, further advance the industrial base, modernize the industrial chain, and improve economic quality, efficiency, and core competitiveness (Xinhua 2020b). China aims to enhance the new generation of artificial intelligence technological innovation capability, develop a smart economy, build a smart society, and maintain national security. China also invests resources to accelerate the construction of an innovative country with scientific and technological power. The goals include the "two centenary" (*liang ge yibai nian*) goals and the Chinese dream of the "great renaissance" (*weida fuxing*) (State Intellectual Property Office 2018). With the current plans, Chinese leaders believe that China will become a global artificial intelligence competition leader. China will build an open, shared, high-quality and low-cost artificial intelligence technology and application platform that is inclusive of the world and cooperate with the construction of the BRI projects and promote a "community with a shared future for mankind" (*renlei mingyun gongtongti*).

Conclusion

From this analysis, the role of AI in China's grand strategy centers on grand strategy means. The roles and functions of AI are crucial in China's military, economic, and intelligence capabilities.

To prepare for an "intelligentized warfare," China stresses on the applications of AI in military and intelligence fields. Economic capability is another focus, which is often connected with the discourse of national power. China is determined to ensure that it will catch up with the AI technologies and applications, competing with other economies. The overall goals are to increase the national power, national face and international reputation of China. Chinese leaders, including Chinese President Xi Jinping and Premier Li Keqiang, believe that the development of AI is an opportunity to build strategic capability and impact a state's future competitiveness. The importance of AI in China's grand strategy will only gain more ground in the future.

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References

Allen, Gregory C. 2019. Understanding China's AI strategy: Clues to Chinese strategic thinking on artificial intelligence and national security. Center for a New American Security Washington, DC.

BAAI. 2019. "Beijing AI Principles." *BAAI.* May 25, 2019. https://www.baai.ac.cn/news/beijing-ai-principles-en.html.

Bhunia, Priyankar. 2017. "Chinese Government sets out specific targets in three-year action plan on artificial intelligence." *Open Gov.* December 19, 2017https://opengovasia.com/chinese-government-sets-out-specific-targets-in-three-year-action-plan-on-artificial-intelligence/.

Brown, Chris, and Kirsten Ainley. 2009. *Understanding International Relations.* 3rd Revise. Palgrave Macmillan.

Erikson, Robert S, and Kent L Tedin. 2015. American public opinion: Its origins, content and impact. Routledge.

Future of Life Institute. "AI Policy – China." Future of Life Institute Website. https://futureoflife.org/ai-policy-china/?cn-reloaded=1.

Gartner, Scott Sigmund. 1999. *Strategic assessment in war.* Yale University Press.

Gries, Peter Hays. 1999. "A"China Threat"? Power and Passion in Chinese" Face Nationalism." *World Affairs* 162 (2):63-75.

Griffiths, Martin, Terry O'callaghan, and Steven C Roach. 2008. *International relations: The key concepts.* Taylor & Francis.

Haas, Mark L, and Mark L Haas. 2005. *The ideological origins of great power politics, 1789-1989*. Cornell University Press.

Hart, Liddell B.H. 1967. *Strategy: The Indirect Approach*. London: Faber & Faber Limited.

Lee, Kai-Fu. 2018. AI superpowers: China, Silicon Valley, and the new world order. Houghton Mifflin Harcourt.

Lin, Leo SF. 2019. International Events and Grand Strategy Adjustment after the Cold War: Examining Chinese Grand Strategy Using a Neoclassical Realist Model.

Lin, Leo SF. 2021. "An Analysis of Chinese Leaders' Images Towards the United States During the Covid-19 Pandemic." *Scientia Moralitas Conference Proceedings*, November 22-23, 2020.

Minister of Industry and Information Technology. 2020. "Thee-Year Guidance for Internet Plus Artificial Intelligence Plan." *StipCompass.* July 28, 2020. https://stip.oecd.org/stip/policy-initiatives/2019%2Fdata%2Fpolicy Initiatives%2F24471.

Murray, Williamson, MacGregor Knox, and Alvin Bernstein. 1996. The making of strategy: rulers, states, and war. Cambridge: Cambridge University Press.

Nye, Joseph S. 2020. "Perspectives for a China Strategy." *Prism* 8 (4):120-131.

People's Liberation Army News. 2019a. "Accelerate the advancement of military intelligence." Ministry of National Defense. October 8, 2019. http://www.mod.gov.cn/jmsd/2019-10/08/content_4852384.htm (in Chinese).

People's Liberation Army News. 2019b. "Intelligent warfare is not far away." *Xinhua News*. August 8, 2019. http://www.xinhuanet.com/mil/2019-08/08/c_1210233985.htm (in Chinese)

People's Net. 2019. "Xi Jinping: artificial intelligence has a strong "head goose" effect." *CPCNews.* July 26, 2019. http://cpc.people.com.cn/n1/2019/0726/c64094-31256975.html (in Chinese).

Posen, Barry R. 2014. *Restraint: A new foundation for US grand strategy*. NY: Cornell University Press.

Scobell, Andrew. 2014. "China's Real Strategic Culture: A Great Wall of the Imagination." *Contemporary Security Policy* 35 (2): 211-226.

State Intellectual Property Office. 2018. "China' patents in the field of artificial intelligence are growing steadily." *State Council of the People's Republic of China*. October 18, 2018. http://www.gov.cn/xinwen/2018-10/18/content_5331996.htm (in Chinese).

The State Council of China. 2015. "Notice of the State Council on Printing and Distributing Made in China 2025." *The State Council of China.* May 19, 2015. http://www.gov.cn/zhengce/content/2015-05/19/content_9784.htm (in Chinese).

The State Council of China. 2017a. "China to invest big in 'Made in China 2025' strategy." *Xinhua.* October 12, 2017.http://english.www.gov.cn/state_council/ministries/2017/10/12/content_281475904600274.htm.

The State Council of China. 2017b. "Notice of the State Council on Issuing the Development Plan for the New Generation of Artificial Intelligence." *The State Council of China.* July 20, 2017. http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm (in Chinese).

Tzu, Sun. 2007. *The Art of War* (trans. Lionel Giles). Forgotten Books.

Waltz, Kenneth N. 2010. *Theory of international politics*. Waveland Press.

Xinhua. 2018. "Xi Jinping: Promote the healthy development of a revolutionary new generation of artificial intelligence." *Xinhua*. October 31. http://www.xinhuanet.com/politics/leaders/2018-10/31/c_1123643321.htm (in Chinese).

Xinhua. 2019. "Military intelligence is profoundly affecting future operations." *Ministry of National Defense.* September 10, 2019. http://www.mod.gov.cn/jmsd/2019-09/10/content_4850148.htm (in Chinese).

Xinhua. 2020a. "'China's New Generation Artificial Intelligence Development Report 2020' was released at Pujiang Innovation Forum." *Xinhua.* October 22, 2020. http://www.xinhuanet.com/tech/2020-10/22/c_1126642746.htm (in Chinese).

Xinhua. 2020b. "Xi Jinping: Explanation of the 'Proposals of the Central Committee of the Communist Party of China on Formulating the Fourteenth Five-Year Plan for National Economic and Social Development and Long-Term Goals for 2035'" *Xinhua*. November 3, 2020. http://www.gov.cn/xinwen/2020-11/03/content_5556997.htm (in Chinese).

Yu, Xie and Meng Jing. 2017. "China aims to outspend the world in artificial intelligence, and Xi Jinping just green lit the plan." *South China Morning Post.* October 18, 2017. https://www.scmp.com/business/china-business/article/2115935/chinas-xi-jinping-highlights-ai-big-data-and-shared-economy.

Zhi-Zhong, Wu. 2020. "Accelerate the development of mechanization, informatization, and intelligent integration-learning and implementing the spirit of the Fifth Plenary Session of the 19th Central Committee." *Guangming Daily.* November 8, 2020. http://www.jsw.com.cn/2020/1108/1588828.shtml (in Chinese).

Zijuan, Li. 2021. "Accelerate the high-quality development of the artificial intelligence industry." *CPCNews.* February 7, 2021. http://theory.people.com.cn/n1/2021/0207/c40531-32024707.html (in Chinese).