

The New World Order: Exploring AI Policies Through Power Transition Theory

The US and China

By

Beste Yaren Budak

Submitted to

Central European University

School of Public Policy

In partial fulfillment of the requirements for the degree of

Master of Arts in Public Policy

Supervisor: Cameran Ashraf

Budapest, Hungary

2020

Authorship Declaration

I, the undersigned Beste Yaren Budak hereby declare that I am the sole author of this thesis. To the best of my knowledge this thesis contains no material previously published by any other person except where proper acknowledgement has been made. This thesis contains no material which has been accepted as part of the requirements of any other academic degree or non-degree program, in English or in any other language.

This is a true copy of the thesis, including final revisions.

June 12, 2020

Beste Yaren Budak

Abstract

China's ambitious goal for being the world's AI leader brings within several questions regarding global power dynamics in the future. Power Transition Theory argues that shift in power constitutes major threat against global stability and peace. Unlike the historical examples of power transition, today humanity has the possession of most advanced weapons fueled by technological advancement. Along with the influence of Artificial Intelligence, how the next shift in power will take place and who will be the main actors is a big topic of discussion. The aim of this research is to explore the potential change in the power balance the Us and China with the crucial effect of Artificial Intelligence.

key words: artificial intelligence, power transition theory, China, the US, surveillance

Word Count :10.805

Acknowledgements

I would like to thank my supervisor Dr. Cameran Ashraf for guiding me with his valuable contributions throughout my thesis writing process and for motivating me with his positive personality.

I would like to thank my mom and dad for teaching me the valuable things in life and encouraging me when I am pursuing them.

I would like to express my gratitude to my Kanlıca family who never stopped making me feel like village egg.

I would like to thank myself for finishing this thesis in the middle of a global pandemic with series of additional unfortunate events.

My greatest thanks to Lilia and Kristina whom I share the same tough road for reminding me the joy of sisterhood in the time of a global crisis.

And I would like to express my sincere gratefulness to Atakan for not letting me lose hope.

Table of contents

Abstract	ii
Acknowledgements	iii
Table of contents	iv
List of Figures	v
List of Abbreviations	vi
Introduction	1
Chapter 1 – Literature Review	4
Chapter 2 - Methodology	8
Chapter 3 – Background	11
Chapter 4 - Analysis.....	14
Conclusion	29
Bibliography or Reference List.....	32
Appendices.....	37

List of Figures

Figure 1 12

Figure 2 15

Figure 3 23

List of Abbreviations

AIDP	New Generation Artificial Intelligence Development Plan
AIRC	Artificial Intelligence Research Center
CAIC	China Academy of Information and Communications Technology
CCW	Convention on Conventional Weapons
CGTN	China Global Television Network
CSC	China State Council
CSET	Center for Security and Emerging Technology
DOD	Department of Defense
LAWS	Lethal Autonomous Weapons Systems
NDRC	The National Development and Reform Commission
NUDT	The National University of Defense Technology
NIDTR	The Networking and Information Technology Research and Development
NSTC	National Science and Technology Council
OMB	Office of Management and Budget
OSTP	Office of Science and Technology Policy
PLA	Chinese People's Liberation Army

PTT	Power Transition Theory
SCSs	Social Credit Systems
USRC	Unmanned Systems Research Center
USTR	The Office of the United States Trade Representative
WTO	World Trade Organization

Introduction

Technology has always been the milestone of events that transformed humanity. Today, the history of humanity evolving around the goal of constant progress has been experiencing another transformation fueled by advanced technology. Humans' urge for pushing the limits of physical world is reaching another dimension with the development of artificial intelligence. So that, AI is referred as the main driver for fourth industrial revolution which will change the dynamics of society, economy and politics.

John McCarthy defines AI as “the science and engineering of making intelligent machines especially intelligent computer programs” (2007, 2) where the term intelligent refers to the ability to “achieve goals in the world” (2007,2). Through sub-mechanism such as machine learning, big data processing and evolutionary computation AI can perform tasks more effectively and efficiently than a human being. Because technological advancement is a key determinant for a nation's global power (Modelski and Thompson, 1996), the potential advantage provided by AI became a major interest globally. Global agenda for AI is adopted by China with an ambitious goal of being the world's AI leader by 2030 (Ding,2018). For this purpose, China immediately established an ecosystem for AI to be developed within its boundaries. With the effect of national narrative, China's AI ambition is embraced by the private sector, academia and the public. As a result, AI became the key driver of China's domestic and foreign policies. In parallel to the ongoing trend, China's rapid economic expansion echoed in the international arena and its relationship with the US accelerated the speculations regarding possible power-transition in the future. In academic discussions, the dynamics between the US and China are defined as power transition process which will be observed in the next 30 years and beyond (Lai, 2011).

Power Transition Theory, which is found by Organski in 1958, provides a comprehensive perspective to grasp the core of global dynamics. Theory frames world order as hierarchical structural where the system works for the benefit of dominant power and its allies. (Organski, 1968). Because of its dynamic feature, the theory can be adopted regardless of time period. Since Organski started to analyze the relationship between the US and China in 1958, the dynamics between two parties and global power structure have unfolded in different dimensions. The theory frames national economy and national security as indicators that predict nation's relative power. In the discourse of Power Transition Theory, researchers have been widely emphasized these two indicators to observe their effects on the status of a country in the international system. There is no doubt, the economy is a major power indicator as well as the national security since they are the pillars of any nation state. However, the theory which is still valid and applicable for US and China rivalry, should be aligned with the innovations of 21st century. For example, Steve Chan mentions technological capacity as an indicator for a country's power yet, its effect has been analyzed through the concept of economic productivity. There is also very little telling yet that defines artificial intelligence as an indicator of power within PTT. While the China's ambition for global AI leadership is becoming an agenda this gap in the literature should be addressed by employing AI technologies as an indicator for global power. By doing so, we can execute an idea about future dynamics according to reflections of China's AI strategies both in the global level and in the US. Guided by this purpose, this paper will explore the potential change in the power balance the Us and China with the crucial effect of Artificial Intelligence.

First, I will focus on China's AI strategy and its position as an "emerging global power" through analyzing the relationship between AI, national economy and national security. Second, I will propose the indicator of "democracy" to be analyzed within the framework of Power Transition. With democracy indicator, I will attempt to determine the impact of

surveillance AI technologies on democratic regimes. Thirdly, I will employ a recent product of AI as the fourth indicator which is AI policy maker. I will conduct my analysis based on these four indicators and explore their impact on global world order.

Chapter 1 – Literature Review

1. AI Governance in the US-China Context

In recent years, as the pace of AI development increased, the literature focusing on AI and social, ethical, economic and political effects of its implementation has expanded. Since, the potential comparative advantage of global AI leadership has fueled the rivalry among countries, majority of the discourse evolves around China due to its ambitious development plan for AI and the US due to its long-lasting dominance in the industry. In this regard, the book called “AI Superpowers” written by Kai-Fu Lee in 2018 provides a comprehensive framework which has a comparative approach to elucidate how China and the US became the two important actors in this field. Lee (2018) argues that, China’s initial “imitator of Silicon Valley” status in the technology world is no longer valid because of two important transitions which are “from the age of discovery to the age of implementation” and “from the age of expertise to age of data”. Based on the shift towards implementation, China’s weak innovative design capabilities won’t be a challenge as it used to be for the age of discovery. On the second shift which prioritizes data over expertise, Lee highlights China’s superiority based on its capability of capturing massive amount of data in this digital universe which is supported by the cooperation of private sector and the government. In the report called “Deciphering China’s AI Dream”, Jeffrey Ding (2018) agrees with Lee for the China’s advantage of massive data collection but also expresses his concerns regarding its detraction from international data pool due to data protectionism. In contrast to that, in a research paper published by German Institute for International and Security Affairs, puts an emphasis on “technopolitical spheres of influence” which is built on digital products and services provided by a specific country (Lippert and Perthes ,2020). To this extent, China’s global influence which is built on importing digital products and services will eventually contributes to China’s data pool. Additionally, Schäfer

argues that internationally expanded Chinese state media (China Global Television Networks) with the impact of 60 million ethnic Chinese living abroad conduces the Chinese influence (Schäfer,2019) which will lead to deployment of its technologies overseas.

Beside the contribution of Chinese foreign policies to data collection capabilities, Schulze and Voelsen (2020) shed a light on the relationship between technology and social /political dimension by saying that technologies are not value neutral. Perthes (2020, 5)) sees this political dimension embedded in two extremes such as “liberal and democratic paradigms and authoritarian”. Additionally, Rudolf (2020) mentions the US narrative in his article “The Sino-American World Conflict”, which portrays the issue as a systemic conflict between “digital authoritarianism and liberal democracy” (Wright,2018). Based on this argument, academic discussions around aftermath of China’s surveillance technology go to both sides. For instance, Western narrative evolves around more critical approach regarding AI governance which has “authoritarian undertones of pervasive control” (Roberts et al, 2019). Ding (2018) also draws concern regarding dispersal of Chinese AI technologies to “provide a model of robust authoritarianism. While the anxiety towards denouement of democracy under AI developments led by China is expressed widely in academic and political platforms, there are also other approaches which consider governments’ enthusiasm as the necessity for global shift towards authoritarianism. Jessica Chen Weiss (2019) supports this approach in her article “A World Safe for Autocracy?” by arguing that Western fear for Chinese influence is wrong in a sense that surveillance technology won’t suddenly enable governments to control society as long as they have strong democratic institutions. From European perspective which prioritizes democratic values and human rights, its distant position remains while acknowledging China as “systemic rival promoting alternative models of governance” (Lippert et al 2020,8; EU Comission,2019).

2. Power Transition Theory

The concerns regarding China's increasing global power should be analyzed from a multidimensional approach in order to have genuine understanding of the power dynamics between China and the US. To do so, I will consult The Power Transition Theory, which is employed by several scholars to define the rivalry between the US and China.

The roots of the theory can be traced back to 1958 when Organski first developed the idea, however the theory still remains valid by being remodeled through generations in accordance to timely events while the core idea remained the same. (Tammen et al, 2017). The dynamic nature of the theory allows it to be applicable as the history progresses with the contribution of every generation. Basically, the theory focuses on the hierarchical world order where every country has a place with different levels of power in the international system. Steve Chan portrays PTT's core idea as a "contest for world primacy by the most powerful states and such" (2007, 11). In the world order, the dominant power is responsible to maintain the harmony within the international system and have to satisfy its allies with stable political and economic environment. Ideally the leader nation is willing to fulfil these requirements because "it benefits disproportionately from the existing arrangement" (Chan 2007, 63). From that perspective, when a follower country who is dissatisfied with the status quo starts to challenge the dominant power, the stability of the global system can be jeopardized (Lippert and Perthes, 2020). And if the dissatisfied nation manages to overtake the leading power, the transition starts (Chan, 2007). The main point here is to question what constitutes power and what determines the position in the world order, and to apply the theory to real life from this perspective.

In order to determine a position of a nation in a global context, there are different indicators of power to be contemplated such as "economic wealth, population and high political capital" (Akdag 2018, p). Chan (2007) also underlines the importance of "accurate and reasonably

intersubjective” indicators of power in order to make realistic inferences after the theory is implemented in certain context. In that extent, the theory provides a comprehensive framework in which various interdependent factors lead to the shift in power and eventually change the global dynamics in terms of values, norms, trade relations, politics and the society. The expanding literature successfully managed to analyze China and the US relationships within the framework of PTT however, indicators of power which still lack technological dimension, undermine a comprehensive and accurate analysis. Even though Chan (2007) mentioned the importance of technology for national power in his book “China, the US and Power Transition Theory”, the analysis was mostly focused on its relationship with economy. At this point, AI technologies which hold the potential of being the most impactful among any other industrial revolutions (Marr, accessed June 4, 2020), should be integrated into the indicators not just as a component of economic growth but also as an independent variable that can transform even the definition of power. In order to address this gap in the literature and to pave the way for further discussions, I will investigate two existing indicators with the emphasis on AI which are economy and military. Then I will employ two additional indicators as democracy and policymaking in order to observe the impact of AI technologies on political sphere.

Chapter 2 - Methodology

The aim of this research is to understand the potential change in the power balance in the world politics with the crucial effect of Artificial Intelligence. This research is an exploratory research which attempts to investigate China's role as an emerging global power based on its ambitious AI policies. Therefore, main research question of this study can be stated as "What are the possible implications of power transition from the US to China in the age of AI?"

In the academic realm, the relationship between the US and China has been referred under the Power Transition Theory which is founded by Organski in 1958. However, the theory's assessment indicators for power barely emphasize the role of technology. Although the recent interpretations of the theory imply the importance of technology to exercise global power, they mostly adopt technology as an indicator for economic growth. In specific to AI and its political, social and economic capabilities, a gap has been identified in the literature as a result of extensive literature review. In order to address this gap, the impact of AI should be considered not as an indicator for economy but also as a norm-challenging mechanism. It is especially important to consider AI as an independent mechanism to be able to see bigger picture which its future role as a policymaker. The capability of policy generation from large amount of data can transform both politics and society. At this point, to integrate AI technologies into the framework of Power Transition Theory will pave the way for ethical and legal discussions which will not detailly under the scope of this study. Additionally, this integration of theory and innovation will provide some prospects for researchers and policy makers which may lead to establishment of necessary precautions.

Data collection methodology of this study will be based on secondary data method which includes official government documents of China and the US such as development plans, laws, reports; academic resources, organizational publications and articles. For the theoretical

framework, the recent version of Power Transition Theory written by Chan Lee (2007) will be adopted as a base for theoretical framework in order to protect the validity and actuality of the data analysis.

In order to establish a conceptual framework, academic discussions evolving around AI, China and the US and Power Transition Theory will be presented in the literature review. Since the relationship between China and the US has a long history, background information will be delivered to limit the scope of the study. For this purpose, the common narrative will be adopted which was extracted from the second data analysis. Based on that, 2016 appeared as a critical year for China's rise in the AI field. Starting from 2016, background analysis will provide a historical overview in order to understand the process of AI race between China and the US.

The data analysis will include AI's implications for two indicators from original Power Transition Theory which are economy and, military and defense. These indicators were specifically selected in terms of their evolution within the national AI policies of China and the US. For economy indicator, current dynamics will be referred by analyzing the effects of policy implications from China and the US perspectives. In the analysis of military and defense, AI led innovations will be introduced such as war strategy algorithms and autonomous weapons in order to demonstrate their extensive role in states' strategical position in the world order. In this manner, the research will contribute existing literature on AI induced economy and military and will integrate them into the Power Transition Theory. In addition to existing power indicators provided by the theory, the study will supplement "democracy" as the third indicator in order to analyze the influence of surveillance technologies on global power dynamics. Based on the recent events, China's Social Credit System and COVID-19 pandemic were selected to determine two extremes of surveillance technologies under the China government. Finally, the

research will contribute to the theoretical framework by adopting forth indicator which will focus on the policy making capability of AI. This indicator will be especially introduced in the analysis in order to explore the possible outcomes of wide scale utilization of such technologies. Using AI for policy making is a novel practice which is still in the phase of development. Based on the privacy, transparency and accountability issues, policy-making function of AI will be explored in the analysis. While tackling with the concept, the research will be guided by the new applications in the field such as lethal autonomous weapons, social credit system and COVID-19 outbreak in order to provide a realistic framework for prospection.

There are 2 limitations for this study which are time constraint and wide scope of history between China and the US. The first limitation occurred due to COVID-19 pandemic which was an impossible problem to overcome. In order to overcome the second analysis, the scope of the context analysis was narrowed down to 2016 as the starting point based on the common narrative within the literature review.

Chapter 3 – Background

According to narrative embraced by many scholars, China's ambitious goal for being a trendsetter in AI field started in 2016. In 2016, AlphaGo which is an AI system owned by Google, competed against Mr Lee Sedol who is known as the greatest Go player of the past decade. (DeepMind). Go is a Chinese game which has more than 3,000 years of history. Since the game is extremely complex and requires multi-layered strategical thinking, when AlphaGo win over Sedol by 4-1, it was an important achievement for an AI system in terms of being able to generate winning strategies. After this moment in which Lee (2018,18) refers to as "China's Sputnik moment", China's strategic and comprehensive AI development started become a nationwide aspiration embedded in public and private sector. In 2016, "Robotics Industry Development Plan" came into force with the aim of "100,000 industrial robots produced by domestic technology" (BBC,2016). Again in 2016, "13th Five-Year Plan for National Science and Technology Innovation" was established which designates AI as "new generation information technologies" and ranks AI development 6th among 69 major national strategies (He,2017). Additionally, there are also policy documents such as "State Council Guidelines on Promoting the Healthy and Orderly Development of the Internet of Things" which focus on positive implementation of AI technologies (CIST,2018). By 2017, China's ambitious AI plan manifested itself through "New Generation AI Development Plan" issued by State Council which aims to allocate over \$150 billion in government funding to become a world leader in AI field by 2030 (CSC,2017). The plan consists of three short term objectives as following (Ding 2018, 10)

- i. China intends for its AI industry to be "in line" with the most developed nations by 2020 with a gross output over \$150.8 billion.

- ii. China seeks to achieve a “world-leading” status in some AI fields by 2025 with a gross output over \$ 754.0 billion.
- iii. China aims to become the “primary” AI innovation center globally by 2030 with a gross output over \$ 1.5 trillion.

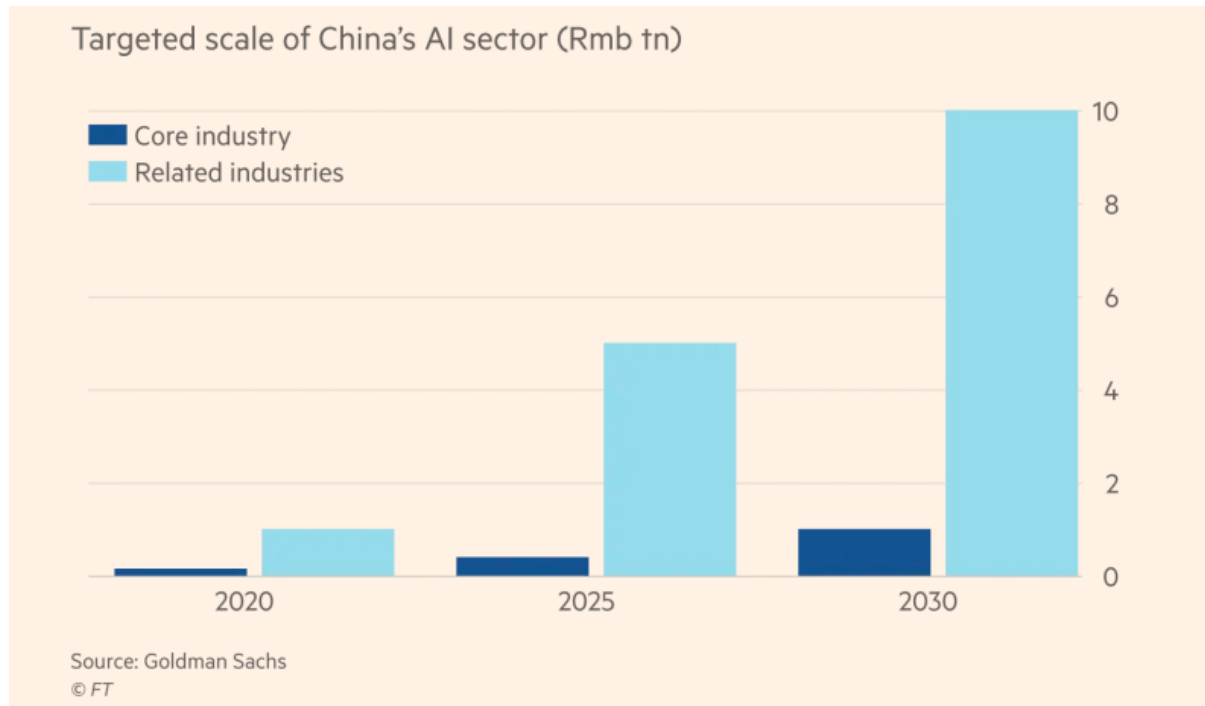


Figure 1

There is no doubt, the Chinese approach for AI development which strongly emphasize the status shift from trend-follower to trend-setter is in the core of country's AI strategy. In parallel to this, China's “techno-utilitarian political culture” creates a stable technological ecosystem where investment and participation are rewarded (Lee 2018, 191) At this point, it's wort to mention the coordination between central and local governments in order to understand China's efforts for all-inclusive system. As a result of that effort, “use of local government guiding funds” increased from \$7 billion to \$27 billion between 2013 and 2015 (Lee 2018,152). Aligning local policies with central government's plan is an advantage for China to incentivize nationwide investments therefore accelerate the progress towards its core purpose. Integrating the large Chinese population into the process through local governments' support enabled

China's AI dream to be embraced by the public as a part of national legacy. Consequently, it paved the way for smoother adaptation of Social Credit System with a high degree of approval from the public (Kotska, 2019).

On the other hand, AI policies of the United States are in under the lead of a few agencies such as NSTC, OSTP and OMB. The NSTC Subcommittee on Machine Learning and AI was established in 2016 to create a "National AI Research and Development Plan" which consists 7 main strategies (NITRD). The objectives of the plan addressed concepts such as the ethical and legal issues, security, safety, effective human-AI collaboration and AI training through datasets (NIDTR). Additionally, a detailed strategic plan created by President Barack Obama's White House also highlighted the objectives regarding healthy integration of AI into the economy to prevent social disruptions (White House). However the report barely got recognition by the media due to the attentions centered in Donald Trump's Access Hollywood Tape (Lee, 2018). Therefore, the report failed to incentivize mayors and governors to support AI-friendly policies (Lee, 2018). Finally, when President Trump came into power in 2017, the focus of the country's AI strategy has shifted to homeland security and national defense.¹ Meanwhile, the R&D investments for AI-driven automation is still an important component for the US in order to maximize its utility for national economic growth. Even though AI objectives of China and the US look quite similar, the main difference between them is "America's combative political system which punishes missteps or waste in funding technological upgrades" against China's techno-utilitarian approach (Lee 2018, 195).

¹ "China AI Development Report 2018." Accessed June 5, 2020. China Institute for Science and Technology Policy at Tsinghua University.

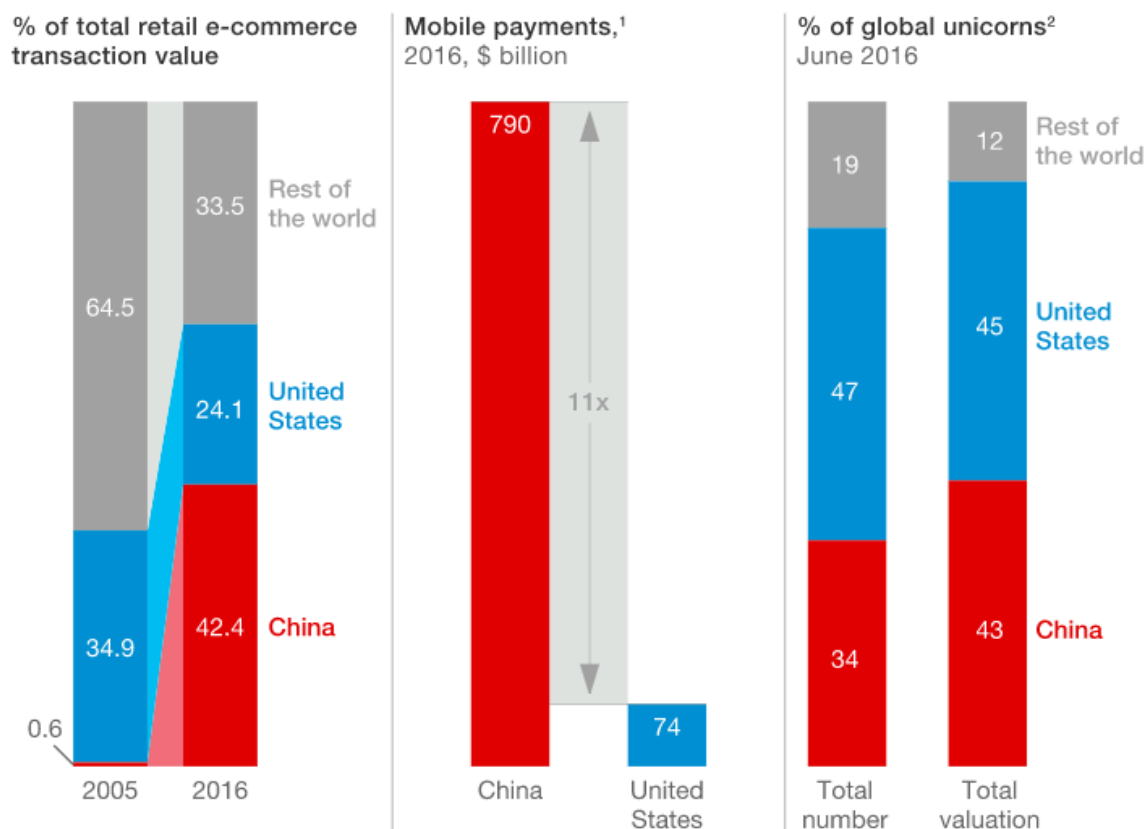
Chapter 4 - Analysis

It has a crucial importance to determine appropriate indicators when one wants to understand an incident within global politics through applying a theory. For this research, the analysis of China and the US relationship can be made through the employment of indicators provided by Power Transition Theory. However, the theory lacks emphasis on AI and its transformative effects which are highly related to the improvement of existing indicators. This gap in the literature should be addressed by integrating AI factor into the indicators in order to expand the scope of the theory to 21st century. Based on this purpose, initially I will employ 3 indicators such as economy, military and defense and democracy which are likely to be most affected by AI deployment. Additionally, I will frame AI as a separate indicator with the emphasis on its potential functions as a policymaker. Finally, I will attempt to make inferences about the future where China has the dominance over global power based on the analysis of its AI strategy in the aforementioned fields

1. Economy

After the rapid growth of researches in the field achieved concrete progress through years, AI become a potential advantage as a strategical tool for economic development (Roy, 2020). This has led countries to adopt immediate strategies to enhance their economy and enhance their national power by integrating AI to their development plan. An important component of Chinese comprehensive AI plan is the close relationship between the government and private sector (Fisher,2018). The reason behind that can be found in the roots of China's economic development strategy which intends a shift from "manufacturing-led growth" to "innovation-led growth" (Lee 2018,154). This approach was fundamental for China to become a global power by meeting the economic requirements for the leader status. Guided by this purpose, China came into prominence with the status of "fastest sustained expansion by a major

economy in the history” (World Bank, 2017). According to PricewaterhouseCoopers, China is more likely to be the top winner with boost of up to 26% GDP in 2030 as a result of the deployment of AI induced industries which transforms the definitions of productivity (Rao and Verweij, 2017). Hilpert argues that until 2030, the position of United States as the world’s largest economy can be overtaken by China “if current growth trends continue.”.(2020,26) By this success China challenged the common belief of political science which is seeing liberal democracy as the only requirement for stable economic growth (Wright,2018). This change in the dynamics can be explained by deployment of AI which promises economic growth and excessive control at the same time (Wright,2018).



¹Refers to third-party payments conducted through mobile transactions. For China, mobile payments exclude bank or UnionPay credit card transactions, digital wealth management, and digital finance. For the United States, payments are in-person payments on mobile between buyers and sellers, and remote payments on mobile devices.

²Defined as a privately held startup valued at over \$1 billion.

Source: PitchBook; Dealogic; eMarketer; iResearch; TechCrunch Crunchbase Unicorn Leaderboard; McKinsey Global Institute analysis

Figure 2

As PTT claims, dominant nation seeks to protect status quo in the global system where the coalition of supporters are stable and satisfied (Tammen et al, 2017). Therefore, it can be argued that, the US's "destructive and anti-WTO" trade policies (Zhang,2018) under Trump administration gives advantage to the China's efforts towards securing its place in the international system. One of these "destructive" trade policies of the US can be listed as setting tariffs and trade barriers such as restrictions on investment as a strategy for the ongoing trade war against China (Swanson,2018). This trade conflict also became subject to criticism in the international arena because of its damage on the global economy. (Paletta and Bimbaum, 2019) The reason of Trump's aggressive trade policy lies behind China's unfair competition which includes "forced technology transfer from foreign companies" (Overhaus et al 2020, 17). Related to this, the report published by USTR address the trade conflict from a technological aspect by accusing China for theft of intellectual property. (USTR,2018)

There is no doubt, high-value-added industries located at the intersection of technology and economy highlight the positive effect of artificial intelligence on economic power. However, the positive effects will be experienced only by companies and actors who have the means of the technology. Lee argues that, AI led world order will lead to "winner-take-all economics" (57) which will cause wide range of social disruption with rapid growth in unemployment (2018). With the effect of extensive job automation, majority of professions will replace their work to AI which works more efficiently and effectively. AI will widen the gap between rich and poor as a result of economic monopolization enjoyed by handful of companies from the US and China. (Lee,2018). Thus, China's AI strategies may determine the leader of the international economic order. (Chen,2017)

In 21st century, a high economic capacity as an important driver for global dominance requires an advance technological development. It also provides a comparative advantage to countries for the establishment of future policies by expanding their data pools and improving their AI algorithms. China's protectionist strategy which depends on the maximization of efficiency through AI and the US' s aggressive trade policy which aims to undermine China's global influence emerge as a critical angle for researchers to draw attention to. I believe that, AI should be a significant tool for PTT in analyzing the conflict between the US and China under the influence of current economic dynamics. Because in the age of information, "the war" in which the result may lead to transition in global power takes place in technological field. Through analyzing China and the US in this framework, the pattern between global dominance and AI led economy can be deciphered. Hereby, we can predict the consequences of China's political influence as a "soft power" (Lee 2018 ,52).

2. Military and Defense

Bostrom argues that advanced form of artificial intelligence must aligned to humans' values and wellbeing in order to prevent it from being a disastrous threat to our civilization (Bostrom, 2014). Especially after the deployment of AI in the military has peaked in the past few years, Bostrom's concerns have become a frightening dimension of our reality. It is notably because the possibility of AI replacing human responsibility in the war strategy can endanger lives and safety of humans and national security of countries who don't possess such technologies. Since the military is an important component of power, in spite of all concerns have been made, the race among states for developing the most advance AI technology for military purposes remains as a status quo. In that extent, the US who has a long-standing leading position in the AI field promotes a national policy based on national security, defense and military and industrial development. China's military strategy which carries the fear of "generational gap" against the US is widely influenced by the US in terms of the innovations in the military

(Kania,2017; Hoadley and Lucas,2018). According to estimates from CSET (Acharya and Arnold,2019), fiscal plan for 2020 allocates the major portion of the US's AI budget to defense while China invests on R&D for areas such as fundamental algorithm development and smart-infrastructure (Hao,2020). However, the efforts being made under the leadership of Xi Jinping show that military has a major space in China's R&D activities. For instance, in 2018, China's Ministry of National Defense established two main research organizations under the NUDT which are Unmanned Systems Research Center and Artificial Intelligence Research Center. These research centers which have over 200 research staff are carry the status of being "one of the largest and fastest growing government AI research organizations in the world" (Allen,2019). As this misperception in the CSET brief shows, the limited data in the public documents prevents us to make accurate inferences about the proportions of countries' budget allocations. Even so we can still execute an idea about AI's role in defense through the strategies and global trends followed by China and the US.

It can be argued that, both countries have a similar strategy towards the application of AI which mainly aims to enhance the decision-making in the battlefield. Basic idea here is AI enables countries to generate effective war strategies by processing a large amount of data. The AI also can produce strategies by confederating information provided by various sources that would be too complex to analyze for human intelligence (Ilachinski, 2017). Moreover, AI can generate its own data through analyzing unstructured information such as polls, election results and financial data (Hoadley and Lucas, 2018) which contributes the quality of decision making in the battlefield. Another important product of AI for military is LAWS (Lethal Autonomous Weapons Systems) which are designed for identifying a target and taking actions accordingly without human intervention. The LAWS functions through computer vision system and AI algorithms that can detect a hostile object and generate immediate response. There is no doubt, these AI technologies set high expectations through their ability of reducing the risk of a wrong

decision made by human- beings under the high pressure. On the other hand, the system who aims to deduct human factor from the decision making in the battlefield brings within several concerns for war ethics.

2.1. LAWS

The concerns regarding LAWS are addressed widely in the international platforms to establish a joint decision on the limitations and regulations of such technologies. To some scholars, unclear definition of “autonomous” appears as an obstacle to understand the scope of this technology that fails to distinguish between semi-autonomous and autonomous weapons (Crotoof, 2015). The critical difference between semi-autonomous and autonomous weapon systems regarding the role of human judgment in target selection remains vague in the existing discourse. This gap in the literature undermined the discussions about necessary policy measures and prevented authorities to establish a set of joint regulations. For example, this issue came to UN’s agenda again in the meeting of member countries of the Convention on Conventional Weapons in 2019 (Brzozowski,2019). Although 28 countries advocated for the ban of such weapons, the meeting failed to provide binding agreements on any regulations or absolute ban. (Brzozowski,2019). The reason behind that can be found in the comparative advantage of LAWS in the military which is too critical to be compromised unless all countries agree against LAWS. Because security is a priority for almost all nations, leaders’ concerns of lagging behind drive a motivation for developing LAWS under their own legal provisions. The legal and ethical concerns of integrating LAWS into military are not emphasized enough in Chinese narrative contrary to American repercussions. “Artificial Intelligence Security White Paper” published by CAICT in 2018 denoted China’s positive approach to international collaboration on AI laws and regulation without any specification on arms races (Allen,2019). However, the theory didn’t match with reality in China when military leaders express ambition on developing such technology to reach the level of global advanced powers. There also

slightly emphasis on ethical and legal concerns of autonomous weapons systems from Chinese People's Liberation Army and The Chinese Communist Party (Horowitz, 2016). Meanwhile, in the United States, the development of LAWS is postponed by DOD based on ethical concerns (Hoadley and Lucas, 2018). DOD also explicitly determined its position in the debates by advocating effective human-machine collaboration (Kania, 2017). Additionally, an open letter (Walsh, 2015) presented at the International Joint Conference on Artificial Intelligence in 2015 was signed by over 1,000 AI experts including Elon Musk (Tesla), Steve Wozniak (Apple) and Demis Hassabis (Google DeepMind). (Gibbs, 2015). The letter defines autonomous weapons as “the third revolution in warfare, after gunpowder and nuclear arms” and advocates for a ban with the support of AI and robotic researchers and experts. (Walsh, 2015)

2.2. Military Civil Fusion

In contrast to American private companies' distant position towards AI for military purposes, Chinese commercial AI market strongly embraces the government's defense policy. The main reason behind that collaboration can be found in China's agenda for “Military-Civil Integration”. Under the Military-Civil Integration strategy, China aims to take advantage of high technological capacity provided by its AI induced commercial market (Allen, 2019). Accordingly, Military-Civil Fusion Development Commission is established by CCP in 2017 to guide the implementation of the strategy.² This dual use of AI is also legally protected by the Article 7 of China's National Law ³ which requires all technology companies to cooperate. This collaboration is also beneficial for private companies in terms of eliminating the risk of

² “Military-Civil Integration Development Committee Established” [军民融合发展委成立], Xinhua, January 23, 2017, http://news.xinhuanet.com/finance/2017-01/23/c_129458492.htm.

³ Statement of related article : Any organization and citizen shall, in accordance with the law, support, provide assistance, and cooperate in national intelligence work, and guard the secrecy of any national intelligence work that they are aware of. The state shall protect individuals and organizations that support, cooperate with, and collaborate in national intelligence work.”

competition with state-owned enterprises. ⁴ The binding cooperation between Chinese government and the private sector is also a great example of China's general AI strategy based on collective national effort in a closed ecosystem.

While the dual use of technology raises questions such as data security and privacy, the main problem appears as lack of emphasis on human values from both Chinese government and companies. Obviously, China's desire to become a global AI leader rapidly has drawn the focus away from establishing the necessary ethical foundation. According to some experts, China's cursory moral structure can lead to flawed judgments and AI's risky practices in the military arena (Surakitbanham, 2017). Since China started to export autonomous drones to Middle East and declared that they will do more as they developed new technologies, the global effect of China's military technology became worrisome. Especially for LAWS, there is no information about what data is used to improve algorithms of target selection. At this point, algorithms that will evolve based on China's definition of enemy object may steer the global warfare trends by combining technology and military as the two cornerstones of power. The importance of the unethical use of such dangerous technologies for world peace is indisputable.

According to PTT, dominant nation is required to maintain the world peace and satisfy its allies with the system stability. From that perspective, aggressive use of AI based military tools wouldn't be welcomed by the countries with highest status in the world order. China attracts the Middle East by its advance war technology however China's allied bloc will remain incomplete without the world's greatest economies. Although the US also exports weapons to the Middle East, there may be two reasons for the allies' distant attitude towards China. First, the US which has moderate attitude towards cooperation by emphasizing the ethical and legal concerns is more likely to convince the international actors. Second, since exportation of

⁴ Based on the Allen's(2019) interview with executives from Chinese tech company SenseTime

autonomous weapons constitutes more risk and danger than usual war instruments, outcomes of China's further attempts to spread those technologies may become a priority in the international arena. It should be noted that these reasons can vary in accordance to the different perspective due to broad scope of political indicators. From my perspective, these reasons are valid due to China's disadvantaged position in the ethical and legal realm. Along with this, we will be able to analyze the change of interests, dynamics, diplomatic relations more clearly, as the rivalry between China and the US continues to unfold.

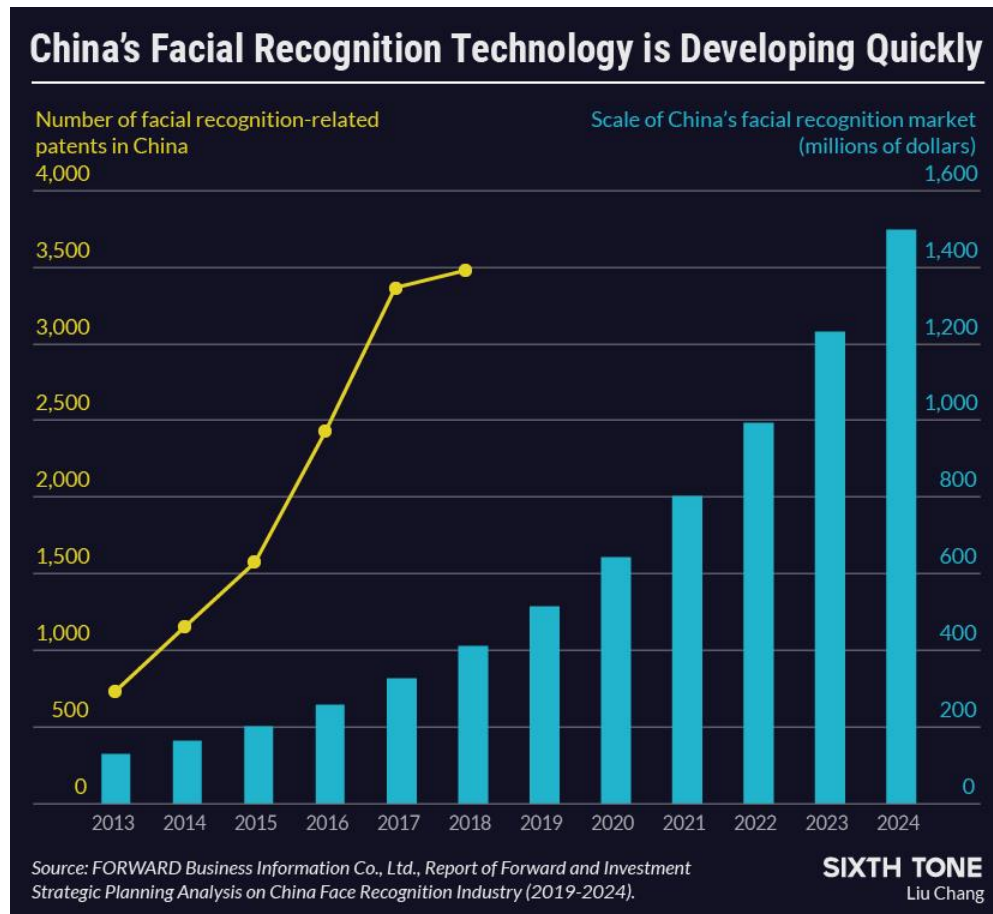
3. Democracy

3.1. Surveillance

A recent report published by Freedom House identifies China as "the world's worst abuser of internet freedom" for the fourth time in a row while the US has the fifth place among 65 countries surveyed (Funk and Shahbaz 2019, 5). China's surveillance and censorship practices are echoing in the international arena as a major threat to enjoyment of human rights. With China's comprehensive AI strategy, now it's easier for the government to prohibit variety of content online and track the society's obedience. China's AI fueled information network appears as a power enhancing instrument by "surveilling and regulating the political, economic and social dominions (Liang et al 2018, p). This well-designed infrastructure for sustained and efficient growth of power is raising questions towards the rise of authoritarian regimes. Especially, when the system is combined with China's reputation of human rights violator, the concerns for the international reflections of China's repressive use of AI has become accelerated. The reason behind China's repressive policies can be seen as a part of its national protectionism which also aim to protect "internet sovereignty" (Zeng et. al 2017,2) In this close ecosystem where private businesses are highly engaged with public sector to support the national strategy, tech companies contribute the government objectives by providing data of the users and surveillance technologies. Beside receiving data from major tech companies,

Chinese government closely encourages companies by funds to develop face-recognition technologies. As the Figure 3 shows below, China’s push for the advancement in facial recognition technology bares its fruits both inventions and implications. Between 20017 and

2020,



facial

recognition cameras in operation has reached to 626 million from 176 million (Dudley,2020)

3.1.1 Social Credit System

The “social credit” plan emerged in 2014 with the aim of rating citizens for trustworthiness, creditworthiness and honesty by using big data algorithms (Ju and Clover, 2016). The system was piloted in different municipalities in China however it will be deployed nationwide in 2020. Through creating a citizen profile based on national ID, the government

can *Figure 3*

track

almost every movement such as transaction, market interest, social circle, personal spending and criminal actions. While the algorithms of AI system which evaluate citizens and generate scores for their profiles remain opaque, the list of behaviors such as fraud, paying bills on time or military work can increase or decrease one's social score (Ma, 2018). Once a citizen reaches a low score, they can be excluded from certain services such as quality educations, job opportunities, travel or using public transport and it sometimes affect the person's whole family (Ma, 2018). The social credit system, where spreading fake news also can be tracked and punished, poses a great threat especially for free speech. (Ma, 2018). Because AI's detection of fake news may vary according to which data it is trained. It's almost impossible for citizens to make sure that AI is trained with objective data. Basically, very simple share of news can be detected as fake news and there is no other authority that monitor this process. Since low citizen rate comes with variety of challenges in daily life, job market or education system, sharing online content is too risky. Actually, social credit system leads citizens to develop auto censor skills by applying passive punishment mechanism. As a result, citizens gradually avoid sharing risky contents even if they are not fake news. This type of AI implications allows governments to control citizens with minimum effort and time.

Chinese government justifies the social credit system by arguing that it is for building public trust while some experts classify it as a design for mass surveillance (Clover and Ju, 2016). It's known for a fact that data collection from individuals is not a novel practice however it was never used for rating citizens before under a government's oversight. This novel technique of data collection contributes to the "power differential between state powers and private citizen" (Liang et al 2018,418; Tufekci,2014). The problematic part here is that China's social credit system is not based on the citizens' consent and there are not any mechanisms to monitor the ethical use of data. Based on these issues, China's authoritarian way of implementing AI strategy constitutes a thread for democratic values.

3.1.2 The Case of COVID-19

The ironic incident regarding surveillance technologies including facial recognition happened just recently with the COVID-19 pandemic. The virus first emerged in late 2019 in Wuhan, China then turned into a global health crisis that was not expected. With 1,4 billion population, China managed to control the wide spread of the virus with the help of tracking technologies along with set of emergency measures. Additionally, immediate adoption of body temperature detection feature into facial recognition cameras enabled Chinese government to restrict the travel of infected people therefore to control the spread of the virus (Dudley, 2020). On the other hand, the US who had the first case in March is struggling now to take the spread under control with over one million cases (Koty,2020). Although the spread is wide, the US started to lift the protective measures to protect its economy from expected global economic crisis. For no doubt, this difference in responds to COVID-19 will alter the relationship between China and the US not just in economy but also in political and in technology use.

From the PTT perspective, the rules of international system are established dependently on the interest of dominant power (Chan,2007) which means that China's authoritarian strategy can reshape the global rules if it achieves the status of global dominance. As Zing, Stevens and Chen argue, China's domestic actions have a significant place in the analysis of the "transformation of global and international order" (2017, 3) due to its ambition for shifting from a "norm taker" into a "norm shaper" (Pu,2012; Zeng and Breslin 2016). As COVID-19 pandemic showed, China's surveillance technology decelerated the virus's pace of spread and saved people's lives. When the negative effect of pandemic on global economy is considered,

states' healthcare infrastructure tends to be reformed in order to minimize the further risks of such incident. It is still unclear how future will unfold in terms of post-pandemic policies and implementations. Harari argues that COVID-19 can change the global dynamics in terms of extensive deployment of surveillance technologies by states (2020). For democratic regimes it can be a temporary measure however Harari draws a concern by arguing that some governments eventually will use it for non-emergency purposes (2020). Basically, once surveillance technologies are implemented by a state regardless to objective, it's almost impossible to prevent data flow therefore, close control. From this perspective the pandemic emerged as an ethical dilemma for both states and the citizens. When economic burden of pandemic is considered, the tendency toward surveillance technology may increase. Especially if China can convert this crisis into an opportunity for its economy and diplomatic relations, surveillance technologies can spread internationally as a result of lesson-drawing from China's position in COVID-19 pandemic. Even though surveillance technologies are associated with China and criticized in the context of its own territory, the problem may not be specific to China in the future.

4.AI as a Policy Maker

As a result of great efforts to develop AI technologies, the areas suitable for AI to operate have expanded. Beside its contribution to economy, military and public sector, speculations regarding AI's possible role as a policy maker invoked enthusiasm within the field. In that extent, China is developing several prototypes of novel AI policy makers to be applied effectively in diplomacy (Griffin,2018). For example, the policies of Chinese Ministry of Foreign Affairs are already complemented by new generation AI, designed by Chinese Academy of Sciences (Griffin,2018). In 2017 Shanghai also piloted an AI system that is

designed for evaluating the credibility of evidences in criminal cases.⁵ Outside of China, even though there are no specific statements made to the public, the US is also giving signals that their strategical plan is employing novel AI technologies to advocate policy positions (Griffin, 2018). This technology is trained to understand the strategy of international politics by processing large amount of data which stores wide range of information such as “cocktail party gossip to images collected by spy satellites.” (Griffin, 2018). Dr. Feng Shuai, senior fellow with the Shanghai Institutes for International Studies, highlights the importance of using AI in policy making by arguing that it can overcome the problems caused by human beings’ interference of hormones, emotions and biases. (Chen, 2018). Although, those AI technologies are obligated to human interventions at this early stage of development, its future draws both dystopic and utopic pictures towards humanity. Especially when we ask the question of “who will have the most advanced AI policy-making system, the answer can be shaped through different possibilities.

Given that a nation who has the strategic AI technology will hold an absolute advantage (Chen, 2018) the advanced AI policy maker will entail an extensive transformative power on global politics. Since technology is not value-neutral, AI policy makers will also carry the values and norms of the context it’s produced. For example, an AI can be designed to evaluate criminal cases based on the information of related country’s criminal law and the data based on a large number of previous cases and their results. After experts trained the AI with machine learning, it will be able to generate verdicts for lawsuits. However, the verdicts still won’t be objective or unbiased because the data used for its training and its algorithm will be too complex to be understood by public. Even if the governments guarantee the quality of data and safety of algorithms, it’s impossible to determine AI’s credibility and accountability. Through

⁵ 陈子琰 . “AI Takes a Look at Legal Evidence.” China Daily, 2017. http://www.chinadaily.com.cn/china/2017-07/11/content_30064693.htm.

non-transparent process of AI generation regardless the use of area, the leader nations may be able to govern the system according to their core strategies. Thus, AI appears as an important indicator due to its policy-making function for Power Transition Theory.

Until a few years ago, experts and authorities were the ones who are making the strategic policies to secure or change their status in the hierarchical world order. Now, AI which includes specific machine learning systems are assisting human mind to enhance the quality of policy making process therefore influence the politics globally. If China's extensive AI strategy which naturally possess country's authoritarian and repressive ideology spread internationally, it's predictable that China can satisfy the expectation of most countries with the effect of its strong economy. Hence, aforementioned change in the balance of power can reshape the global governance due to absolute advantage created by AI technologies. Based on the concerns regarding China's authoritarian tendency, democratic values may be harmed in a possible power transition case. On the other hand, well-structured AI systems whose algorithms are based on neutral, objective, quality and transparent data may bring positive policy outcomes that enrich accountability of democratic regimes. At this point, I argue that Power Transition Theory should acknowledge the transformative power of AI technologies and integrate them into its evaluations and projections. As a result, the theory may become able to predict possible consequences of AI practices led by different nations such as China and the USA. PTT which is updated according to the dynamics of 21st century may also provide valuable contributions to the AI's ethical and legal discussions.

Conclusion

China's rise as a global power has been widely narrated in political, economic and technological arenas. Fueled by the comprehensive set of policies, China aims to become the global AI leader by 2030. The international reflections of this ambitious goal have been wide, especially for the United States. For years, The US which has the long-standing global power have been challenging China's economy and politics which is widely discussed under the Power Transition Theory. According to the theoretical framework, the dominant power tends to determine the rules of the system as she gains the most benefit out of it. In that extent, it would not be realistic to argue that China's position is stable in today's global system. Although China has been experiencing rapid economic growth, its authoritarian regime prevents it to enjoy its national efforts in the international area. From the perspective of western democracies which highly depends on values such as human rights and freedom, China doesn't promise an ideal global governance. However, the rise of AI technologies which has reached to level of being applicable in almost every field may become the tool for global influence.

The Power Transition provides a comprehensive and dynamic framework to understand under what conditions global powers shift. Within this framework, economy is expressly prioritized due to dominance of liberal democratic regimes. In contrast to that, China's protectionist approach which doesn't allow free movement of international companies under its sovereignty constitutes a negative reputation among international actors. Meanwhile, China who sees Western liberal system as a contribution to the US's hegemony (Weiss,2019) is not

satisfied with the current system because liberal values doesn't align with its national legacy. At this point, the emergence of AI technologies and its sub mechanism such as big data, robotics and machine learning becomes a soft power tool (Lee,2018) for China to create a global impact.

I believe the term of soft power is crucial concept to understand China's global strategy due to two reasons. Firstly, China's repressive regime supported by surveillance AI technologies are specific practices for close ecosystem. China's national sovereignty narrative which is effective in its economy and use of technology remains valid in political realm too. By adopting persuasive attitude rather than aggressive, China seems like a threat only within its boundaries. In contrast the US under Trump administration, China's collaborative approach towards international organizations may enable China to attract international actors. Nevertheless, it doesn't necessarily mean that China has harmonious foreign relations. At this point, my second argument which is China's global AI leadership functions as a complementary strategy to leave its "ideological and cultural footprint around globe" (Lee 2018, 52). Beside AI's economic benefits, its influence as a soft power tool may be one of the main reasons for China's extensive AI strategy.

As mentioned in the literature review, technology is not value neutral. It carries certain values and judgements and creates a joint context by offering people various methods of expression. Especially data-based technologies such as AI can infuse political, social and culture by algorithm driven high exposure to certain contents. This type of influence is not new to our generation who witnessed private data exchange between government and private companies for political manipulation. However, China's national dynamics which highly rely on the cooperation between government and the private companies enables data flow to be

directed into the authorities. The problem here is China's contribution to normalization of mass data collection by the state. Because massive data pool held by government can easily transform into a surveillance tool which would attract countries with poor democratic system. Even under these conditions, Western countries' response to China's soft power remains unclear.

The US' debilitating relations with EU under Trump administration may be interpreted as an advantage for China to enhance its diplomatic relations. However, under this circumstances EU's demands for democratic values cannot be satisfied by China. At this point, the possible change in position of Western democracies should be analyzed from a broader perspective. In that respect, post-pandemic period can be logical starting point to evaluate the conditions in which EU is willing to compromise from democratic values. Along with EU's response to China's quick resolution of COVID-19 with the help of surveillance technologies, political and social shifts in global realm may unfold unexpectedly.

Cutting edge technologies like AI possess a great power which can lead to both the most beneficial and most dangerous events for the humanity. For years, experts, policy makers and researchers have been putting an extensive effort to prevent AI from turning into a weapon by misuse. In the 21st century, threat for humanity doesn't lead to physical war but intellectual war which will be evolving around AI technology. The great power of AI will serve different values according to the country that will lead it. In his study I attempted to explore the potential shift in the power balance between the Us and China with the crucial effect of Artificial Intelligence. In AI field where the possibilities are endless, this research can only scratch the surface. I hope, the literature will expand with valuable contributions of academia.

Bibliography or Reference List

- Acharya, Ashwin and Arnold, Zachary. Chinese Public AI R&D Spending: Provisional Findings. CSET Issue Brief, 2019. Accessed 08 June 2020, <https://cset.georgetown.edu/wp-content/uploads/Chinese-Public-AI-RD-Spending-Provisional-Findings-1.pdf>
- Akdag, Yavuz. "The Likelihood of Cyberwar between the United States and China: A Neorealism and Power Transition Theory Perspective." *Journal of Chinese Political Science* 24 (2019): 225–247. <https://doi.org/10.1007/s11366-018-9565-4>
- Allen, Gregory C. "Understanding China's AI Strategy: Clues to Chinese Strategic Thinking on Artificial Intelligence and National Security." CNAS (February 2019).
- Artificial Intelligence: Google's AlphaGo Beats Go Master Lee Se-Dol." BBC News. BBC, March 12, 2016. <https://www.bbc.com/news/technology-35785875>.
- "Artificial Intelligence, Automation, and the Economy." National Archives and Records Administration. National Archives and Records Administration. Accessed June 5, 2020. <https://obamawhitehouse.archives.gov/blog/2016/12/20/artificial-intelligence-automation-and-economy>.
- Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Oxford, UK; New York, NY, USA: Oxford University Press, 2014.
- Brzozowski, Alexandra. "No Progress in UN Talks on Regulating Lethal Autonomous Weapons." *EURACTIV.com*, November 22, 2019. available at <https://www.euractiv.com/section/global-europe/news/no-progress-in-un-talks-on-regulating-lethal-autonomous-weapons/>.
- Chan, Steve. "China, the US, and the Power-Transition Theory: A Critique." *Routledge* (2008).
- Chen, Stephen. "Robots, Immune to Fear or Favour, Are Making China's Foreign Policy." *South China Morning Post*, July 31, 2018. https://www.scmp.com/news/china/society/article/2157223/artificial-intelligence-immune-fear-or-favour-helping-make?utm_source=copy_link&utm_medium=share_widget&utm_campaign=2157223.
- "China AI Development Report 2018." Accessed June 5, 2020. China Institute for Science and Technology Policy at Tsinghua University.

- China State Council, "A Next Generation Artificial Intelligence Development Plan," 2017 p. 2
- Clover, Charles and Ju, Sherry. "China tech groups to share data with state in online fraud battle." *Financial Times*, October 26, 2016. Available at <https://www.ft.com/content/4ebc5fb6-9a70-11e6-8f9b-70e3cabccfae>.
- Crootof, Rebecca. "The Killer Robots Are Here: Legal and Policy Implications." *Cardozo Law Review* 36, no. 5 (2015): 1837-1916.
- Deepmind. "AlphaGo: The Story So Far." Available at <https://deepmind.com/research/case-studies/alphago-the-story-so-far> (Accessed June 1, 2020).
- Ding, Jeffrey. "Deciphering China's AI Dream." *Future of Humanity Institute, University of Oxford* (March 2018).
- Dudley, Lauren. "China's Ubiquitous Facial Recognition Tech Sparks Privacy Backlash." *The Diplomat*, March 7, 2020. Available at <https://thediplomat.com/2020/03/chinas-ubiquitous-facial-recognition-tech-sparks-privacy-backlash/>.
- European Commission. "EU-China – A Strategic Outlook: Commission and HR/VP contribution to the European Council." *The European Council*, March 12, 2019. Available at https://ec.europa.eu/commission/publications/eu-china-strategic-outlook-commission-contribution-european-council-21-22-march-2019_de.
- Fischer, Sophie-Charlotte. "Artificial Intelligence: China's High-Tech Ambitions." *CSS Analyses in Security Policy* 220 (February 2018)
- Funk, Allie, and Adrian Shahbaz. "FREEDOM ON THE NET 2019." Freedom House, 2019. https://freedomhouse.org/sites/default/files/2019-11/11042019_Report_FH_FOTN_2019_final_Public_Download.pdf.
- Gibbs, Samuel. "Musk, Wozniak and Hawking Urge Ban on Warfare AI and Autonomous Weapons." *The Guardian*. Guardian News and Media, July 27, 2015. <https://www.theguardian.com/technology/2015/jul/27/musk-wozniak-hawking-ban-ai-autonomous-weapons>.
- Griffin, Matthew. "World's First AI Government Policy Maker Gives China a Diplomatic Advantage." *Fanatical Futurist*, September 21, 2018. Available at <https://www.fanaticalfuturist.com/2018/09/worlds-first-ai-government-policy-maker-gives-china-a-diplomatic-advantage/>.
- Harari, Yuval Noah. "Yuval Noah Harari: the World after Coronavirus: Free to Read." *Financial Times*, March 20, 2020. <https://www.ft.com/content/19d90308-6858-11ea-a3c9-1fe6fedcca75>.
- Hao, Karen. "Yes, China Is Probably Outspending the US in AI-but Not on Defense." *MIT Technology Review*. MIT Technology Review, April 2, 2020. <https://www.technologyreview.com/2019/12/05/65019/china-us-ai-military-spending/>.
- He, Yujia. "How China is preparing for an AI-powered Future." *Wilson Briefs* (2017).

- Hoadley, Daniel and Lucas, Nathan. "Artificial Intelligence and National Security." *Congressional Research Service* (April 2018).
- Horowitz, Michael C. "Public opinion and the politics of the killer robots debate." *Research & Politics* 3, no. 1 (2016).
- Ilachinski, Andrew. "AI, Robots, and Swarms, Issues Questions, and Recommended Studies." *Center for Naval Analysis* (January 2017).
- Kania, Elsa B. "Battlefield Singularity: Artificial Intelligence, Military Revolution, and China's Future Military Power." *Center for a New American Security*, (November 2017): 12-14.
- Knight, Will. "China Wants to Shape the Global Future of Artificial Intelligence." *MIT Technology Review* (April 2020).
- Kostka, Genia. "China's Social Credit Systems and Public Opinion: Explaining High Levels of Approval." *New Media & Society* 21, no. 7 (July 2019): 1565–93. <https://doi.org/10.1177/1461444819826402>
- Koty, Alexander Chipman. "Why China Could Lead the Global Economic Recovery After COVID-19." *China Briefing News*, May 1, 2020. Available at <https://www.china-briefing.com/news/china-will-lead-global-economic-recovery-covid-19/>.
- Lai, David. "The United States and China in Power Transition." *Strategic Studies Institute, US Army War College* (2011). Available at www.jstor.org/stable/resrep12113.
- Lee, Kai-Fu. *AI superpowers: China, Silicon Valley, and the new world order*. Boston: Houghton Mifflin Harcourt Publishing Company, 2018.
- Liang, Fan and Das, Vishnupriya and Kostyuk, Nadiya and Hussain, Muzammil M. "Constructing a Data-Driven Society: Chinas Social Credit System as a State Surveillance Infrastructure." *Policy & Internet* 10, no. 4 (February 2018): 415–53. <https://doi.org/10.1002/poi3.183>.
- Lippert, Barbara and Perthes, Volker. "Strategic Rivalry between United States and China." *German Institute for International and Security Affairs, SWP Research Paper 2020/RP 04* (April 2020). <https://doi.org/10.18449/2020RP04>.
- Ma, Alexandra. "China Has Started Ranking Citizens with a Creepy 'Social Credit' System - Here's What You Can Do Wrong, and the Embarrassing, Demeaning Ways They Can Punish You." *Business Insider*, October 29, 2018. Available at <https://www.businessinsider.com/china-social-credit-system-punishments-and-rewards-explained-2018-4>.
- Marr, Bernard. "What Is The Importance Of Artificial Intelligence (AI)." Available at <https://bernardmarr.com/default.asp?contentID=1829> (Accessed June 4, 2020).
- McCarthy, John. "What is Artificial Intelligence?" *Stanford University* (2007). Available at <http://www-formal.stanford.edu/jmc/whatisai.html>.

- Modelski, George and Thompson William R. *Leading Sectors and World Powers: The Coevolution of Global Politics and Economics*. Columbia: University of South Carolina Press, 1996.
- Morrison, Wayne M. “China’s Economic Rise: History, Trends, Challenges, Implications for the United States.” *Congressional Research Service* (2019). Available at <https://fas.org/sgp/crs/row/RL33534.pdf>.
- Nco. “The National Artificial Intelligence Research And Development Strategic Plan.” The Networking and Information Technology Research and Development (NITRD) Program. Accessed June 5, 2020. https://www.nitrd.gov/news/national_ai_rd_strategic_plan.aspx.
- Office of the United States Trade Representative, Executive Office of the President. “Findings of the Investigation into China’s Acts, Policies and Practices Related to Technology Transfer, Intellectual Property and Innovation Under Section 301 of the Trade Act of 1974.” Washington, DC, 2018. Available at <https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF> (Accessed June 8, 2020).
- Organski, A. F. K. *World Politics*. [1st ed.]. New York: Knopf, 1958
- Organski, A. F. K. 1968. *World politics* (2nd ed.). New York: Alfred A. Knopf.
- Organski, A. F. K., & Kugler, J. *The war ledger*. Chicago: University of Chicago Press, 1980.
- Overhaus, Marco and Rudolf, Peter and Daviels, Laura von. “American Perceptions of China”. *German Institute for International and Security Affairs, SWP Research Paper 2020/RP 04* (April 2020). <https://doi:10.18449/2020RP04>.
- Perthes, Volker. “Dimension of Strategic Rivalry China, the United States and Europe’s Place.” in *German Institute for International and Security Affairs, SWP Research Paper 2020/RP 04* (April 2020). <https://doi:10.18449/2020RP04>.
- Paletta, Damian, and Michael Birnbaum. “Senseless Disputes: E.U.’s Tusk Says Trump’s Trade Wars Are Damaging Global Economy.” *The Washington Post*. WP Company, August 24, 2019. https://www.washingtonpost.com/business/economy/senseless-disputes-eus-tusk-says-trumps-trade-wars-are-damaging-global-economy/2019/08/24/bc1f6502-c656-11e9-9986-1fb3e4397be4_story.html.
- Pu, Xiaoyu. “Socialisation as a Two-Way Process: Emerging Powers and the Diffusion of International Norms.” *The Chinese Journal of International Politics* 5, no. 4 (2012): 341- 367. Available at <https://academic.oup.com/cjip/article/5/4/341/394716/Socialisation-as-a-Two-way-Process-Emerging-Powers>.
- Rao, Anand S, and Gerard Verweij. “Sizing the Prize What’s the Real Value of AI for Your Business and How Can You Capitalise?,” 2017. <https://www.pwc.com/gx/en/issues/analytics/assets/pwc-ai-analysis-sizing-the-prize-report.pdf>.

- Roberts, Huw and Cows, Josh and Morley, Jessica and Taddeo, Mariarosaria and Wang, Vincent and Floridi, Luciano. "The Chinese Approach to Artificial Intelligence: An Analysis of Policy and Regulation." (September 1, 2019). Available at: SSRN: <https://ssrn.com/abstract=3469784> or <http://dx.doi.org/10.2139/ssrn.3469784>.
- Roy, Vincent Van. "AI Watch - National Strategies on Artificial Intelligence, a European Perspective in 2019." *Luxemburg: Publications Office of the European Union* (2020). <https://doi.org/10.2760/602843>
- Rudolf, Peter. "The Sino-American World Conflict" in *German Institute for International and Security Affairs, SWP Research Paper 2020/RP 04* (April 2020). <https://doi.org/10.18449/2020RP04>.
- Schäfer, Carsten. "The Body Overseas, But the Heart Remains in China"? – China's Diaspora Politics and Its Implications." *Border Crossing* 9, no. 1 (2019): 29–42.
- Schulze, Matthias and Voelsen, Daniel. "Digital Spheres of Influence" in *German Institute for International and Security Affairs, SWP Research Paper 2020/RP 04* (April 2020). <https://doi.org/10.18449/2020RP04>.
- Surakitbanharn, Caitlin. "Comments at AI and Global Security Summit – CRS discussion with Dr. Jason Matheny." *CNAS*, November 1, 2017. Available at <https://www.cnas.org/events/artificial-intelligence-and-global-security-summit>.
- Swanson, Ana. "Trump's Trade War With China Is Officially Underway." *The New York Times*. The New York Times, July 5, 2018. <https://www.nytimes.com/2018/07/05/business/china-us-trade-war-trump-tariffs.html>.
- Tammen, R. *Power Transitions: Strategies for the 21st Century*. New York: Chatham House, 2000.
- Tammen, Ronald L. and Kugler, Jacek and Lemke, Douglas. "Foundations of Power Transition Theory." *Oxford Research Encyclopedia of Politics* (2017).
- Walsh, Toby. "Autonomous Weapons: An Open Letter from AI & Robotics Researchers." *Future of Life Institute*, July 28, 2015. Available at <https://futureoflife.org/open-letter-autonomous-weapons/>.
- Weiss, Jessica Chen. "A World Safe for Autocracy? China's Rise and the Future of Global Politics." *Foreign Affairs* 98, no. 4 (2019).
- Wright, Nicholas. "How Artificial Intelligence Will Reshape the Global Order." *Foreign Affairs*, July 10, 2018. Available at <https://www.foreignaffairs.com/articles/world/2018-07-10/how-artificial-intelligence-will-reshape-global-order>.
- World Bank. "China Overview." *World Bank*, March 28, 2017. Available at <http://www.worldbank.org/en/country/china/overview>. (Accessed June 2, 2020).

- Zeng, Jinghan, and Shaun Breslin. "China's 'New Type of Great Power Relations': a 'G2' with Chinese Characteristics?" *International Affairs* 92, no. 4 (2016): 773-794. Available at <http://onlinelibrary.wiley.com/doi/10.1111/1468-2346.12656/abstract>.
- Zeng, Jinghan and Stevens, Tim and Chen, Yaru. "China's Solution to Global Cyber Governance: Unpacking the Domestic Discourse of "Internet Sovereignty"." *Politics and Policy* 45 (2017): 432-464. <https://doi.org/10.1111/polp.12202>.
- Zhang, Jiakun Jack. ""Chinese Perceptions of Trump's Trade Policy", in The Trump Opportunity: Chinese Perceptions of the US Administration." *ECFR China Analysis* 262 (June 2018).

Appendices

Figure 1: Retrived from : ucas, Louise. "China and US Compete to Dominate Big Data."Subscribe to read | Financial Times. Financial Times, May 1, 2018. <https://www.ft.com/content/e33a6994-447e-11e8-93cf-67ac3a6482fd>.

Figure 2: Retrieved from : About the author(s) Jonathan Woetzel is a director of the McKinsey Global Institute. "Digital China: Powering the Economy to Global Competitiveness." McKinsey & Company. Accessed June 12, 2020. <https://www.mckinsey.com/featured-insights/china/digital-china-powering-the-economy-to-global-competitiveness#>.

Figure 3: Retrieved from : Sixth Tone. "Camera Above the Classroom." Sixth Tone, January 14, 2020. <https://www.sixthtone.com/news/1003759/camera-above-the-classroom>.