

BRATISLAVA INTERNATIONAL SCHOOL OF LIBERAL ARTS

**FROM PACIFISM TO PREPAREDNESS: GAME THEORY
INSIGHTS INTO JAPAN'S MILITARY DEVELOPMENT**

BACHELOR THESIS

Bratislava, 2024

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Declaration of Originality

I hereby declare that this bachelor's thesis is my own work and has not been published in part or in whole elsewhere. All used literature and other sources are attributed and cited in References. For AI, Grammarly was used.

Bratislava, February 15, 2024

Natália Fáberová

Signature:

A handwritten signature in black ink, appearing to be 'Natália Fáberová', written in a cursive style.

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Abstract

Recently, Japan's decision to enhance its military capabilities through military buildup has sparked considerable debate and speculation. Known to be one of the most pacifist nations, Japan's shift in security posture might be an unprecedented departure from its historical stance, which might signal changes in the broader international arena. Therefore, this paper explores the research question of why is Japan pursuing a military buildup, examining security threats in the Indo-Pacific region, assessment of the alliances, and the possibility of conflict escalation as underlying reasons and possible implications of the buildup.

To answer the research question, game theory is used as a theoretical framework, with a specific focus on the Prisoner's dilemma applied to a case study of Japan's unprecedented military buildup. In addition, textual analysis of primary and secondary sources, as well as interviews with experts were used.

The equilibrium of the game suggests that Japan's military expansion does not necessarily signal a complete departure from its pacifist ideals, rather, it reflects a rational choice in response to evolving geopolitical dynamics with an emphasis on deterrence. Therefore, contrary to neorealist interpretations, this shift leans towards a neoliberal perspective, wherein pursuing cooperative strategies and interdependence remains integral to Japan's security calculus.

Keywords: game theory, prisoner's dilemma, pacifism, military buildup, security threats, alliances, conflict escalation, cooperation, neoliberalism

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Abstrakt

Rozhodnutie Japonska zvýšiť svoje vojenské kapacity prostredníctvom budovania armády nedávno vyvolalo značnú diskusiu a špekulácie. Tento posun v bezpečnostnej stratégii Japonska, o ktorom je známe že je jedným z najpacifistickejších národov, môže byť významným odklonom od jeho historického postoja, čo by mohlo signalizovať zmeny v širšej medzinárodnej aréne. Táto práca skúma otázku prečo Japonsko buduje armádu, pričom sa zaoberá analzou bezpečnostných hrozieb v indicko-pacifickej oblasti, hodnotenie aliancií a možnosti eskalácie konfliktu ako základné dôvody a možné dôsledky vojenského budovania.

Na zodpovedanie výskumnej otázky je využitá teória hier ako teoretický rámec so špecifickým zameraním na väzňovu dilemu aplikovanú na prípadovú štúdiu bezprecedentného budovania vojenských síl Japonska. Okrem toho bola použitá aj textová analýza primárnych a sekundárnych zdrojov, ako aj rozhovory s odborníkmi.

Zistenia práce naznačujú, že japonská vojenská expanzia nemusí nutne signalizovať úplný odklon od jeho pacifistických ideálov, skôr odráža racionálnu voľbu v reakcii na vyvíjajúcu sa geopolitickú dynamiku s dôrazom na odstrašenie. Preto, na rozdiel od neorealistickej interpretácií, sa tento posun prikláňa k neoliberalnej perspektíve, v ktorej presadzovanie kooperatívnych stratégií a vzájomnej závislosti zostáva neoddeliteľnou súčasťou japonského bezpečnostného kalkulu.

Kľúčové slová: teória hier, väzňova dilema, pacifizmus, budovanie armády, bezpečnostné hrozby, aliancie, eskalácia konfliktov, kooperácia, neoliberalizmus

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Introduction

The region of East Asia has once again gathered significant global attention due to the discussions regarding the region's escalating tensions. These recurring discussions spanning through various academic disciplines usually revolve around regional dynamics, including alliances, China's growing influence, inter-Korean relations, the Taiwan issue, developments in the East China Sea, and the United States' regional presence. Yet, amidst this complex environment, one player, Japan, stood in its commitment to a pacifist regional approach, a distinctively unique approach in the given environment. However, an unprecedented shift has occurred in Japan's security posture. To illustrate, imagine a nation known for its restrained military stance suddenly declaring a bold military expansion in the form of a significant military buildup. Consequently, this decision leads to a fundamental question: What motivates Japan's shift towards military assertiveness? In other words, why is Japan building an army? In order to explore this question, it is necessary to examine global affairs, prompting an analysis of the underlying motives driving Japan's unexpected shift towards military expansion. Therefore, a comprehensive exploration of potential influencing factors is required to understand the underlying motives behind Japan's military buildup, especially given its historical portrayal as a pacifist nation without a standing army.

One of the reasons why the Japanese military buildup has been viewed as a significant change in the international arena is that Japan is often referred to as one of the most pacifist countries. This notion is often linked to the Japanese Constitution adopted after the Second World War, whose pacifist origins remain debated. Some argue that it stems from Japan's collective shock at the devastating aftermath of the Second World War, while others attribute it to the influence of the United States, which aimed to rebuild Japan as a peaceful nation devoid of militaristic tendencies during its post-war occupation (Institute for Security & Development Policy, 2018). Nonetheless, the Japanese Constitution is often labeled as the "Pacifist Constitution" or "Constitution of Peace", which is associated with Article 9 of the Constitution, which explicitly renounces war as a sovereign right of the nation and prohibits Japan

from maintaining a military for aggressive purposes or as a war potential. Yet, there are numerous disputes over whether this makes Japan a pacifist country, with arguments ranging from Japan still being a pacifist country to the fall of Japanese pacifism, or even that Japan was never a pacifist country in the first place. The claim of Japan being inherently pacifist finds its foundation in Article 9 of the Constitution; however, challenges to this narrative emerge as critics question the origin of Article 9. To explain, some claim that even though Japan used to be a pacifist nation, this pacifism is failing due to its fragile origin. The comparison can be made between Japanese and Western pacifism, which has deep roots in Christianity and religious traditions, missing in Japan since Japanese pacifism has roots in what Ian Buruma describes as “the Cult of Hiroshima” and the notion of “never again” (as cited in Cai, 2008, p. 182). Yet, the generation that witnessed the suffering of the Japanese people is dying out, and consequently, as Cai argues, “the generational change in Japan is undermining the fragile foundation of pacifism in Japan” (2008, p. 184). Moreover, the constant reinterpretation of Article 9 has been a notable point of contention, with its original intent, now subjected to reinterpretation, quite significantly deriving from its original understanding (Gustafsson, Hagström, & Hanssen, 2019). Having said that, Almog (2014) and Krauss (E. Krauss, personal communication, January, 2023) assert that Japan was never inherently pacifist, pointing to the Constitution's non-pacific origin. Almog claims that the origin of Article 9 is not pacifist but rather practical, stating that Japan banned any military establishment whatsoever “not because it was inherently immoral, but because this action would satisfy other nations and, at the same time, prevent the former militarist leaders who had led Japan to disaster from regaining strength” (2014, p. 7). In this sense, Japan should maintain a pacifist approach until it is satisfactory to other nations, especially partners in the alliance, while ensuring the prevention of strong military leaders. Despite these debates, Article 9 imposes constraints such as a ban on offensive weapons, restrictions on weapons exports, adherence to three non-nuclear principles, and a one percent cap on defense spending. These components collectively contribute to a narrative of pacifism that has spread through Japanese society. While Article 9 has not been interpreted literally, it nevertheless

establishes far-reaching constraints, rendering Japan relatively pacifist when compared to the constitutions of other nations.

Yet, the recent military buildup is an unprecedented departure from the constraints of Article 9. According to the National Defense Strategy (2022) and Defense Buildup Program (2022), Japan is attempting to enhance overall its military capabilities in areas such as space, cyberspace, electromagnetic domains, in-ground, maritime, air, and by stand-off defense capabilities, while at the same time investing in infrastructure. Moreover, Japan is pursuing to “qualitatively and quantitatively enhance its missile defense capabilities” (NDS, 2022, p. 18-19), and more unprecedentedly states that “a key to deterring invasion against Japan is counterstrike capabilities that leverage stand-off defense capability and other capabilities” (NDS, 2022, p. 18), suggesting the inclusion of counterstrike missiles, which was not considered to be necessary for the Self Defence Forces (SDF) before. Focusing specifically on counterstrikes, Japan claims that relying on ballistic missiles and the current missile defense network might cause a failure to address current missile threats. In this sense, Japan argues that counterstrike capabilities will “in the case of missile attacks by an opponent, enable Japan to mount effective counterstrikes against the opponent to prevent further attacks while defending against incoming missiles by means of the missile defense network” (NDS, 2022, p.19). Even though Japan emphasizes that the counterstrikes will be done only for self-defense and by the Three New Conditions for Use of Force, it still marks a significant shift from the previously pacifist security stances (Lind, 2022). That is despite the fact that preemptive strikes remain banned. Additionally, Japan claims that the initiatives concerning the establishment of the SDF’s structure and defense strategies will involve unprecedented efforts both in terms of scale and substance. A temporary increase in expenditure will not achieve this; instead, the government is committing to sustaining a specific level of financial investment over time, making this military buildup a new permanent strategy for Japan, and consequently moving Japan to the third biggest military spender after the USA and China (Lind, 2022). This also includes consistent research and development, production, and procurement processes for defense equipment, and maintaining stable defense production and technology bases. Furthermore, Japan plans to pursue the transfer of defense equipment and

technology to other countries, suggesting that this will assist countries that are subject to “aggression in violation of international law” (NDS, 2022, p.21), which directly implies the involvement of military character outside of its territories, and thus outside of the scope of self-defense.

Yet, despite Japan claiming this military buildup will improve the security of the region, the shift towards a more assertive military posture might suggest a reevaluation of Japan's security priorities and a willingness to engage in military activities outside of self-defense, which might potentially escalate regional tensions. In other words, the shift in Japan's military posture might strain relations among Japan's neighbors and raise questions about the nation's strategic intentions. This uncertainty can contribute to a less predictable and more volatile security environment in East Asia. Moreover, military buildup introduces the prospect of an arms race in the region, particularly with neighboring countries that might be inclined to enhance their defense capabilities or respond aggressively to the buildup. This might lead to a regional environment characterized by heightened military competition and instability with the potential for conflict escalation. Additionally, the timing of Japan's military buildup amid global geopolitical tensions and regional disputes adds another layer of complexity. It prompts speculation about Japan's motivations, including concerns about how this development may be perceived, and potentially influence regional dynamics and alliances.

In this sense, researching the Japanese military buildup provides an opportunity to gain a comprehensive understanding of the factors and motivation behind this significant shift in Japan's defense posture. It might also offer insights into Japan's evolving security considerations, its regional role, as well as potential consequences on regional and global security. Moreover, the search might showcase whether the buildup is a response to specific threats, a reevaluation of trust in alliances, or a broader strategic shift in Japan's defense posture. Lastly, the specific focus on Japan can also provide insights into the current and future environment of the international arena, and its strategic shift between a neorealist or neoliberal approach.

Methodology:

In order to examine the reasons behind the military buildup in Japan, the analysis requires a study of the theoretical framework of game theory, and its applicability to international relations, leading to the creation of a model that can be subsequently implemented in the case study of Japanese military buildup. This will draw a better understanding of the reason behind the buildup, as well as a more profound understanding through a theoretical framework, and offer possible predictions for the future. In this sense, the thesis will use qualitative analysis and a case study method. This means that the analysis will examine non-numerical data, such as interviews with experts and textual materials, which will be used to identify key themes or patterns.

The use of the case study method which involves patterns, unique features, and context-specific details about the concrete case, allows for the exploration of the motivations (Gerring, 2004), policy shifts, and strategic considerations specific to Japan's situation. By analyzing government documents, policy statements, and engagement with key stakeholders, the case study method provides an understanding of the multifaceted variables influencing Japan's decision-making process. These variables consist of the current situation of the global strategic environment, relations with neighboring countries in connection to historical relationships and current economic interdependence, military trends in the Indo-Pacific region, and concrete defense challenges of Japan. Analyzing these variables showcases patterns and considerations that quantitative methods alone may overlook. Consequently, the case study method proves instrumental in illustrating the complexity surrounding Japan's military development.

While the case study method effectively showcases the complexity of Japan's decision to build its army through various variables, grounding the analysis in a theoretical framework, such as game theory, enhances the depth of the study. A theoretical framework provides a structured lens that can interpret and contextualize the findings. Game theory applied to international relations offers a systematic approach to understanding strategic interactions among states in an interdependent

environment, helping to model and analyze the rational choices made by Japan and its neighboring nations in security and defense questions. This theoretical underpinning allows for a better exploration of the motivations, risks, and consequences associated with Japan's military development, providing a theoretical foundation for interpreting the evidence gathered through the case study. Moreover, by integrating theory, the thesis can contribute to the broader academic discussions by connecting the findings to established frameworks within the field of international relations, which provides for the overall validity, generalizability, and theoretical significance of the study.

Interviews and document analysis were chosen as the primary sources of information. Interviews with experts provide firsthand information, clarifying details not available in public sources and their perspectives. Through expert interviews, it is possible to close or at least limit the gap between theory and practice, validating theoretical assumptions and gaining practical insights. For these purposes, four experts – professors, academics, and analysts from the first, second, and third sectors – were selected to gain insights from various perspectives. The five interviews were conducted with an expert on game theory and international relations theories, an expert on Japanese culture and political history, an expert on Japanese politics, security, and U.S.–Japan relations, and lastly with a director for the Asian region of a global security company, who provided insights on the current Indo-Pacific security environment and the current security threats. However, since all the experts are active in the political field, they might have their opinions and biases, which might be present in their understanding of the issue. This limitation could be solved by conducting more interviews to eliminate the bias. However, due to limited resources for this research, it was not possible to do so.

In addition to interviews, textual material analysis was used to obtain data and information. The original and fundamental texts of game theory were used for the theoretical framework. For the case study, the three original security documents of Japan – the National Security Strategy, National Defence Strategy, and Defense Buildup Program – were used. Analyzing the original documents provides direct and unmediated insight into the context without biases caused by interpretations. Having

said that, the original documents for the theoretical framework might possess data gaps, and the original documents for the case study may also be subject to bias, censorship, or selective disclosure, which can have an impact on the objectivity of the analysis. Other strategic and security reports from various security and strategy think tanks were used as complementary resources to limit this as much as possible.

Using these resources for the data and information, backed by the theoretical framework, this was modeled into the prisoner's dilemma model based on game theory. The question of the reasons behind the Japanese military buildup was formed into five games, in which Japan and other respective countries are players. In other words, Japan was modeled into five games with five different countries as the players. This was done to gain an understanding of Japanese defense and security policy with respect to payoff and potential consequences of interactions with each country and their relation with Japan. The payoffs and their preferences were chosen based on the analysis of the global security environment, historical, economic, and military trends of the neighboring countries, and the concrete defense challenges of Japan. The results of these five individual games were then modeled into one final complex game, which considered all of the factors while pointing to the Nash equilibrium of the game. Each payoff was assigned a value on scale from 1-4 (1- least preferred, 4 - the most preferred) of preference of that specific outcome for both players. In this sense, the potential outcomes of the game were mathematicized, and because of their numerical values, they could be adequately compared, resulting in one optimal equilibrium.

Illustration of the model (values are just illustrative):

	Country B 2>4>1>3	
Country A 3>4>1>2	cooperate	defect
cooperate	Payoff 1 (value 2,2)	Payoff 2 (value 1,4)
defect	Payoff 3 (value 4,1)	Payoff 4 (value 3,3)

If country A cooperates, it is better for country B to defect ($4 > 2$). If country A defects, it is better for country B to defect ($3 > 1$).

If country B cooperates, it is better for country A to defect ($4 > 2$). If country B defects, it is better for country A to defect ($3 > 1$).

The equilibrium is payoff 4.

The prisoner's dilemma was chosen because due to the mathematical foundations, it can effectively simplify the problem in order to provide straightforward insights. Moreover, game theory and prisoner's dilemma can be relevant to all other theoretical frameworks in international relations. To explain, a key aspect of the prisoner's dilemma is the players' preferences, which can be identified through players' wishes, desires, or ideas, which do not necessarily have to be grounded in self-interest as realism understands (Guner, 2012). States can also be altruistic players, and their ideas and wishes based on altruism will be represented in the preferences of the players based on mathematics and numerical representation (Gunner, 2012). Also, according to Barry O'Neill (2001), when it comes to repeated games, it requires analysis of concepts such as shared knowledge, inter-subjectivity, and norms and practices, which are specifically relevant to the constructivist perspective on international relations. However, game theory does presuppose that if there is an absence of external authority (such as centralized authoritative institutions), countries might resort to goal-seeking behavior (Snidal, 1985), which is an illustration of international anarchy, and therefore applicable to the research question.

The limitation of this research is primarily the language barrier due to not having enough proficiency in the Japanese language to analyze the documents in their original version. Moreover, the resources in the Japanese language might likely have offered a deeper understanding of the issue. Moreover, the relationship between China and Taiwan might be the key to the analysis of not only the security and strategic environment of the Indo-Pacific region but also the question of the Japanese military buildup. Yet, this topic was not deeply researched for this thesis, and it is not the main focus of the thesis.

Chapter 1: What is Game Theory

1.1. Definition

To understand why Japan is building an army through the application of game theory in international relations, it is first necessary to understand what a game theory is. Game theory was initially introduced by mathematician John von Neumann and economist Oskar Morgenstern in 1928 to apply mathematics to economic problems, aiming for an innovative approach to problem-solving in economics. In this sense, von Neumann and Morgenstern (2007) defined game theory as a field that explores how the choices of actors, based on their preferences, can lead to outcomes that may not have been initially planned or intended by none of the actors involved in economic situations. In other words, it looks at how individual choices affect each other's well-being, and how unexpected outcomes can arise from these interactions. Therefore, game theory is a study of strategically interdependent behavior. This then leads to results that are not only about losing or winning (the game) but also about situations when there are incentives to cooperate or incentives to defect—not cooperate (Game Theory, 2023). Even though game theory was initially introduced in connection with economics, this interdependent strategic behavior that game theory studies can be observed outside of economics as well, which suggests the premise that game theory is interdisciplinary. The interpretation of game theory can lead to two approaches. Firstly, game theory can be seen as a branch or field of mathematics that is used to analyze situations where different individuals (actors) make choices from given sets of options that do not overlap, leading to predictable decision patterns. These decisions are then attempts to maximize their benefits or satisfaction, although there might be a certain degree of uncertainty and randomness. Secondly, game theory can be a study from the perspective of strategic thinking of people in real-life situations, presupposing that individuals (who become the actors of the game) can make decisions based on what game theory refers to as rational choices. However, the rationality in game theory is understood as a technical rather than normative term, referred to, by von Neumann and Morgenstern (2007), as a set of specific restrictions on preferences. Therefore, rationality is not necessarily defined, but instead it provides boundaries within which the players of

the game can act. To demonstrate, in game theory, the rational actor (player) first assesses outcomes by ranking them based on the outcomes' contributions to the player's well-being. However, to rank the outcomes based on preferences in the first step, Von Neumann and Morgenstern (2007) introduced the concept of utility functions, or assigning numerical values to each outcome based on the player's satisfaction with the outcome. This can be further explained by Von Neumann and Morgenstern's concepts of ordinal and cardinal utility. The ordinal utility refers to comparing outcomes, recognizing A is worse/better/equally preferred to B, but without specifying the intensity of the preference of these outcomes. Opposed to that, the cardinal utility, according to Von Neumann and Morgenstern, is a concept that allows players to determine not only which outcome is preferred but also how much it is preferred. Von Neumann and Morgenstern claimed that this is possible by assigning numerical values to them, which provides a mathematical utility function that showcases the intensity of players preferences. This approach enabled players to evaluate outcomes that are also more risky or uncertain and rank them in the hierarchy of preferred outcomes. Secondly, the player of the game calculates which series of actions are more likely (based on probability) to lead to which of the said outcomes. Thirdly, the player of the game will choose those actions from calculated alternatives that produce the most preferred outcomes from the rank, also taking into account the actions of the other players, which are part of the calculation of the path to the ranked outcomes in the second step (Game Theory, 2023). Given this explanation, the "game" in game theory is then a term describing situations where individuals are making choices intending to maximize their benefits while taking into consideration how other individuals will respond to their chosen actions. These individuals are referred to as "players" of the game.

Even though game theory is essential in explaining and understanding the strategic behavior of actors, its significance lies beyond the simple illustrative games. According to William Spaniel (Game Theory, 2023), one of the most significant benefits of game theory is its mathematical foundations, which provide tools for studying strategy. This means that the study of the strategy can not only be descriptive based on observations but can become an analytical tool as well.

1.2. Prisoner's Dilemma

Since the games in game theory are strategic situations of multiple players responding and choosing their preferred course of action, it leads to multiple models or types of games. Perhaps the most well-known example is the prisoner's dilemma, whose authors are mathematicians Merrill Flood and Melvin Dresher, and later mathematician and game theorist Alvin Tucker. The name of the game comes from an illustrative situation that is used to explain this type of game. One of the variants of the prisoner's dilemma can have the following description: Two bank robbers are caught by the police but there is a lack of admissible evidence. The robbers (prisoners) are given a choice: confess to the crime for a reduced sentence or remain silent. If both confess, they get five years each. If one confesses and the other stays silent, the silent one gets ten years while the confessor goes free. If both stay silent, they each get one year for car theft. The graphic illustration of this problem can look like this:

Table 1: *Prisoner's Dilemma*

		confess	remain silent
Prisoner A			
Prisoner B	confess	5 years, 5 years	0 years, 10 years
	remain silent	10 years, 0 years	1 year, 1 year

As described in Chapter 1.1., the prisoners are first going to assess the outcomes based on their preferences, therefore from being free as the most preferred outcome (value 4) to ten years in prison as the least preferred outcome (value 1). Although the most preferred outcome would be no years in prison, the prisoners realize that if the other prisoner chooses to act to get no time in prison, they both will end up getting five years in prison because both of them confessed. However, if they remain silent, they will both get one year in prison or are risking getting the least preferred outcome if the other prisoner chooses to confess. Consequently, one action strictly dominates over the others, with both players being aware of this reality, leading to both prisoners confessing and subsequently receiving the sentence

of five years in prison (value 2 for both players), as it is the action that maximizes their benefit taking into account the actions of the other player. This simple example then illustrates the study of game theory.

1.3. Nash Equilibrium

Even though the prisoner's dilemma might be one of the most illustrative examples of game theory, other equally important concepts are central to game theory. One of these concepts is the Nash equilibrium. Nash equilibrium is named after American mathematician John Nash, who received the 1994 Nobel Prize for Economics for his contributions to game theory. The word equilibrium stands for "equilibria" as in the solution to the game. Simply, in Nash equilibrium can be those strategies when no player can improve their outcome by different strategy, given the strategies of all the other players in the game (Myersson, 1999). To illustrate, the prisoners would not benefit from changing their the strategy of maximin (maximizing their minimum gains), since there is no outside authority enforcing an agreement between the prisoners before they make a choice, and the prisoners do not suffer a penalty for the act of betrayal. Therefore, their strategies are in Nash equilibrium.

However, Nash equilibrium does not take into calculation how players of the game might change their strategies over time in dynamic or repeated games. Therefore, Nash equilibrium can potentially be used only for short-term, less dynamic games. In other words, Nash equilibrium might not be able to explain the whole conflict (for example regional dynamics in the Indo-Pacific region), but may be able to explain one part of the conflict that requires specific strategies (for example arms race between the East Asian countries). Furthermore, Nash equilibrium does not necessarily explain how players can cooperate to reach a better outcome collectively, in so-called zero non-sum games. However, when cooperation is disregarded as a strategy, Nash equilibrium can illustrate why one player is forced to a certain strategy, such as defecting, when the other player is sticking to their initial defection strategy.

Chapter 2: Game Theory in International Relations

As game theory has been defined in the previous chapter as a study of the behavior of decision-makers (players) in strategic interdependence, this study can be essential in various fields, not necessarily only in economics. One of the fields where game theory could be applied is international relations. According to Lake and Powell (as cited in Correa, 2001), international relations focus on examining the interactions themselves, not the specific issues involved in the interactions or their distinctive characteristics. Connected to this, Snidal (1985) also argues that when it comes to strategic analysis, it is not the actual subject of economic or military issues, but the concept of how we understand interactions and politics that is key in the analysis. In this sense, if this viewpoint is adopted, the subject matter of international relations closely aligns with that of game theory. Moreover, one of the key concepts of game theory, strategic interdependence, is also a crucial concept for international relations since for nation-states to achieve their goals, it does not depend only on the actions of the nation-states themselves, but also on actions and responses of other nation-states. In addition, Correa (2001) stresses that the fact that game theory is analyzing relationships and interactions between multiple actors (players of the game), can be an especially valuable tool for international relations theorists, as well as for practitioners in the field who can use the insight from the game theory to strategically influence those interactions in order to gain advantage for the actors they represent. Connected to that, Gunner (2012) writes that game theory in international relations can have 3 levels of possible application. The first form is an extensive-form model when the states become players of the game, and thus the information about the states, the preferences of the states, the interactions between them, and the outcomes become part of the game. The second form is what Guner refers to as the strategic form, when only the players and their strategies are studied, disregarding the outcomes. The third form is the coalitional form, which consists of a study of the players and the values of the coalitions. However, to be able to study the third form, cooperative agreements between states need to be based on the self-interests of the states and not because of higher authority imposing cooperation, which is a situation typical for an international arena which is in nature anarchical.

2.1. Applicable Games in Security Issues in International Relations

To illustrate how game theory could be applied to international relations, one of the essential methods might be analyzing international relations from the perspective of security and defense issues with nation-states as the players. Multiple games can be played varying in complexity. However, the following examples of fairly simple games can be used to demonstrate a close link between game theory and international relations especially related to security and defense, which can then be essential in understanding the dilemma behind the Japanese military buildup. These examples of the games can be cooperative game theory to showcase defense alliances, prisoner's dilemma to portray arms race and deterrence, or a game of chicken to display a crisis that might lead to war.

2.1.1. Cooperative Game Theory and Defense Alliances

Cooperative game theory can provide insights into why nations can form defense alliances in the form of coalitions to enhance their collective security and deter potential threats. Halas (2011) claims that even in an environment full of defection and self-interest, such as the Indo-Pacific region, cooperation strategies will prevail (in the form of defense alliances), and by finding each other in the defecting international arena will mutually gain more than defecting strategies, marking them winners of the game. In this sense, cooperative game theory can represent the combined military strength, economic resources, or strategic advantages that member countries contribute. Connected to that, the Shapley value, which was introduced by Lloyd Shapley in 1953, can be used to evaluate the distribution of alliance benefits among the defense alliance members, reflecting each nation's relative contributions (Sandler, 1999). This then leads to the concept of the core of a cooperative game (Sandler, 1999), which is a set of payoffs that cannot be improved by players, suggesting that a stable defense alliance would have a core that ensures all members find it beneficial to stay within the alliance, rather than defect to another coalition or act independently. Cooperative game theory thus offers an understanding of the strategic dynamic connected to cooperation mechanisms, and benefit-sharing in defense alliances, where military and strategic advantages can be shared among member countries.

2.1.2. Prisoner's Dilemma and Arms Race and Deterrence

Another game that could illustrate one of the concepts of international relations, especially in the realm of defense and security is the prisoner's dilemma. Halas (2011) describes the prisoner's dilemma as a game that can illustrate how countries intersect in international relations the best. Therefore, the prisoner's dilemma could be potentially used to illustrate countries' interactions, for instance in cases such as arms race and deterrence. According to Correa (2001), this is possible by considering how the choices and strategies available to the countries influence the size of their defense budgets. To explain, Hamburger (as cited in Correa, 2001) suggests that the size of defense budgets serves nation-states as the tool for deterring an attack from other nation-states. In this sense, nation-states might maximize their defense budgets to gain an advantage in their competition against other nation-states. This then can lead to escalation that can last as long as the resources of the involved nation-states allow them to continue, or until a binding agreement (by outside authority) is established to restrict their arms buildup. This can be also described using the Prisoner's Dilemma game.

Table 2: *Prisoner's Dilemma and Arms Race*

	cooperate	defect
cooperate	nation-state A and nation-state B both pursue the policy of disarmament	nation-state B possesses the inferior military capacity and ability to nation-state A, which is a risk for nation-state B
defect	nation-state A possesses inferior military capacity and ability to nation-state B, which is a risk for nation-state A	nation-state A and nation-state B both increasing defense budget and investing resources to arms race

However, if the prisoner's dilemma is correct, it may suggest that cooperation might not be possible. This might not necessarily be true. Following the illustration of the prisoner's dilemma in security and defense issues in international relations, it might not be reasonable for a country to cooperate in a single round of a game based on the model prisoners' dilemma. However, this might not be true in the case of

repeated games. If the defense or security issues, or any issues in the realm of international relations, continue to arise, it leads to repeated interactions and a case of repeated games throughout time. This then might change the equilibrium of the game (Axelrod, 2006). Considering that, nation-states might be willing to overlook immediate gains from defecting, if doing so can lead to more substantial long-term benefits through continued cooperation. This willingness to prioritize long-term cooperation over short-term individual gains suggests that international cooperation can occur without the need for outside authority (Snidal, 1985). In other words, while defecting is a dominant strategy in a prisoner's dilemma, in case of repeated interactions, cooperating might become the dominant strategy. Therefore, if the prisoner's dilemma game is repeated, other strategies might become more essential, such as Tit-for-Tat - mirroring cooperation and defection choices of the other player as a response (Axelrod, 2006). Yet, this is not necessarily aligned with Axelrod's evolution of cooperation (Axelrod, 2006), because in the international arena, there is no equivalent to selective elimination of strategies as seen in natural selection. Instead, successful cooperation among states lies in their rational adaptability. Here, interactions are viewed as the intentional actions of states aiming to enhance their welfare through cooperation. The effectiveness and sustainability of these strategies depend on states perceiving them as enhancing their welfare, rather than through a process of elimination or natural selection as seen in evolutionary models (Snidal, 1985).

2.1.3. Game of Chicken and Crisis That May Lead to War

Besides the arms race and deterrence illustrated in the prisoner's dilemma, there are other conflicts or issues connected to security or defense in international relations to which games of game theory can be applied. One of these issues might be a crisis which might lead to a war. According to Correa (2001), if there is a confrontational crisis involving two nation-states, the nation-states have two available strategies: confrontation or cooperation. In the confrontation strategy, one nation-state tries to make the other yield to its demands, while the other nation-state tries to force the first nation-state to withdraw its demands. This crisis between the nation-states might lead to war because verbal threats can escalate to actions, and thus potentially

lead to war. This situation might be similar to the situation of the chicken game. The game of chicken refers to a game played by drivers, with two cars driving toward each other. The loser of the game is the first one to swerve or “chicken out.” Therefore, in game theory, the chicken game refers to a theoretical scenario illustrating a situation where two parties (players) are engaging in a risky standoff. This game might be used to analyze strategic interactions, decision-making, or even conflict resolution in international relations since it helps illustrate the dynamics of situations where actors face a choice between risky confrontation (or aggressive strategies in the form of military buildup) and potentially disastrous outcomes for both (war), or the less risky option of yielding but potentially losing credibility or facing negative consequences (vulnerability to attacks). The game showcases that neither nation wants to be seen as weak or backing down, which might illustrate the nature of confrontational strategies in international relations, for example, in the Indo-Pacific region, where the outcomes can range from one side prevailing, possibly at the expense of the other, to a mutually destructive conflict if neither side yields.

2.2. Justification

One of the main objections to the application of game theory to international relations is a claim that game theory could be only applicable when studying international relations through (neo)realism. Yet, even though game theory assumes that the players are rational actors, it does not assume that states are key actors in the international arena, or that they are always trying to maximize their power. Connected to that, as mentioned in the *Methodology* section, Guner (2012) claims that the key aspect of the game theory is the players' preferences, which are in game theory based on numerical representation, and therefore can include all assumptions from other theories into the calculation, as done in Halas (2011).

However, even though game theory might apply to various international relations frameworks, another objection to the advantage of applying game theory, and prisoner's dilemma, to international relations lies in the dependency on social sciences knowledge (Correa, 2001). Snidal (1985) argues that game theory may fall

short in including crucial information in the analysis of real-life players, their strategies, and possible payoffs, such as historical context, decision-makers' personalities, and behavior, or understanding of diplomatic or foreign policy processes. Yet, Snidal (1985) views the advantage of game theory as an empirical investigation of the analytical predictions and evaluation of deductive theory. In order to achieve this, simplification is necessary with the goal of a deeper understanding of the fundamental processes (Snidal, 1985), (Halas, personal communication, January, 2023). As a result, the straightforwardness of game models provides clarity in understanding the phenomena, which might lead to new insights.

Lastly, one of the key concepts of game theory is its assumption that the players are rational actors in the process, as described in Chapter 1.1. This might lead to a question of whether the actors in the international arena always behave rationally. The solution to this problem might be Snidal's (1985) differentiation between having a strategy and behaving rationally. He uses Axelrod's (2006) suggestions that even an organism has a strategy behind its behavior without having a brain that can act rationally. Yet, Axelrod does emphasize that if players of the game are behaving according to strategic rationality, actors plan their actions to achieve their goals, and recognize that their choices are interlinked with the choices of others, the game theory will be a more valuable analytical tool.

Chapter 3: Case Study: Factors behind Japanese Military Buildup

The advantage of applying game theory to international relations might be observed not only on a theoretical level but also on real cases of current concerns in the international arena. One of these cases is the Japanese military buildup, where game theory can model strategic decision-making in interdependent scenarios involving multiple actors, who become the players of the game. Therefore, in the context of Japanese military buildup, where the decisions of one nation impact others, game theory provides the exploration of cooperative or noncooperative games such as prisoner's dilemma, predicting stable outcomes in strategic choices, and providing insights into how countries balance cooperation and defection in their military and defense strategies. For this reason, to understand why Japan is building its army, it would be essential to use the prisoner's dilemma model since it can illustrate the arms race and security dilemmas in international relations while analyzing the possible players, payoffs, and their values. However, to model the Japanese military buildup into the prisoner's dilemma, it is first necessary to understand the factors influencing Japanese security policies, such as security concerns (global and regional security environment, military trends, and concrete defense challenges), players (historic and economic relations), and potential conflict escalations.

3.1. Japanese Security Concerns

As a country that often labels itself a peace-loving nation, Japan is engaging in various efforts in soft diplomacy, intending to support and enhance cooperation, peaceful resolution of disputes, and maintenance of international order following international law. These efforts remain primary security measures in the international arena. However, even though Japan emphasizes active and constructive participation in areas that require cooperation, according to the new National Security Strategy (2022), areas where the international community is in confrontation, Japan states that they will resort to national power to protect their security. This unprecedented decision on the Japanese side is labeled as a response to the current international order, which Japan calls a “crossroads of ushering in either a world of hope or a world of adversity and distrust” (NSS, 2022, p. 36),

further emphasizing that the world which will prevail depends on “the actions of the international community in the time ahead, including Japan” (NSS, 2022, p. 36). This might suggest that the international community is facing a serious question of which stance to take in the international arena, evaluating their strategies and possibly forming a new one that will be more adequate to the current situation. While Japan suggests that engaging in cooperation and peaceful coexistence within the international arena is necessary, it is equally as important to prepare for the worst-case scenario (NSS, 2022). This then introduces various security concerns.

The first security concern is connected to the global and regional security environment. To illustrate, NDS (2022) claims that the security environment is marked by changes in power balance, which the USA and G7 countries struggle to manage. In addition, the UN is failing to fulfill its roles and functions, countries are engaging in zero-sum games leading to an increase in confrontation and competition, and thus in defection instead of cooperation, and lack of strong leadership is pointing to a decline of the USA's influence and dominance (NSS, 2022). In a situation like this, besides the global security concerns, Japan faces its national and regional security concerns. The National Defence Strategy (2022) identified three major changes shaping the regional (but can be also applied globally) strategic environment, calling for a reevaluation of historical approaches. Firstly, interactions and interdependence in economics and culture between nations are increasing, leading to a higher necessity for cooperation rather than defection. However, major players in the international arena do not share common universal values and their implementation in their politics, especially when it comes to international order and the rule of law. As a result, since these countries expand their influence, they make unilateral changes to the established international order by force, which by default poses fundamental challenges to the international order and the rule of law (Lind, 2022). Secondly, the power dynamics shifted, leading to increased competition between nations in the political, economic, and military realms. An example here can be the rivalry between China and the United States, which is anticipated to escalate (Halas, personal communication, January 2024), especially with the United States expressing that the coming decade will be pivotal in determining the outcome of its competition

(NDS, 2022). Thirdly, the advances in science led to the development of technologies, for instance, artificial intelligence in the form of yet unnamed assets, which can significantly change the character of warfare and thus further impact security in the international arena. This is connected to the increasing risk of cyber attacks and information war (People's Republic of China Cyber Threat: CISA, n.d.).

All these changes in the strategic environment of the international arena necessarily led to the emergence of military trends in the Indo-Pacific region. This is also the case of Japan's neighboring countries, which displayed an increase in their military activities. One of the examples is China engaging in the military buildup, already possessing military capabilities that exceeded the Japanese ones. In the 2017 report to the National Congress of the Chinese Communist Party, China outlines its objectives to achieve the "modernization of national defense and the military" by 2035, to eventually establish military capabilities that are globally recognized for their advanced technology and effectiveness. To fulfill these objectives, China advocates for enhancing its military capabilities both qualitatively and quantitatively (NDS, 2022). This is in addition to the already existing military capabilities, which Japan finds potentially threatening. Moreover, China might be exhibiting intentions to largely increase the number of deliverable nuclear warheads by the end of the 2020s and deploy various missile systems (NDS, 2022). Also, using these military capabilities with the intention of further military buildup, China was recorded to increasingly engage in military activities in areas with close proximity to Japan, for instance in the East China Sea, the Senkaku Islands, the Sea of Japan, and areas around the Izu and Ogasawara Islands in the Western Pacific Ocean, where China Coast Guard ships intrudes into Japanese territorial waters (Beijing newsroom, Sugiyama, Wong, Cushing, Heavens, 2024). Additionally, when it comes to Taiwan, which maintains friendly relations with Japan, the NCCPC reports state that China will "never promise to renounce the use of force.", while also proclaiming that "complete reunification of our country must be realized, and it can, without doubt, be realized." (cited in NDS, 2022, p. 6). This might clearly showcase the Chinese stance on the possibility of the Invasion of Taiwan, which is an action that might destabilize the security of the region, as well as directly threaten the security of Japan. Besides

China, another of Japan's neighboring countries, North Korea, has engaged in increased military activities by improving and developing weapons of mass destruction and ballistic missiles with a range that can reach Japanese territories (Lind, 2022). Furthermore, North Korea seems to be developing capabilities that make warning and detecting these missiles difficult, as well as investing in research to attain new warheads and ballistic missiles (NDS, 2022). Lastly, Russian forces are deploying higher-quality equipment in the areas around Japan and conducting large-scale exercises in the Far East, including the Northern Territories, which is a territorial dispute between Russia and Japan (Lind, 2022).

All these regional trends in the military activities of neighboring countries of Japan, combined with changes in the strategic environment, are posing increasing threats to the security of Japan, especially due to its underwhelming military capabilities compared to its neighbor. Consequently, Japan faces numerous concrete defense challenges. Firstly, the Invasion of Ukraine presents dangerous precedents which can occur in the Indo-Pacific region. To explain, Russia, a permanent member of the United Nations Security Council and a nuclear-armed state, engaged in aggression against Ukraine, including threats of nuclear weapons use. Connected to that, Ukraine's defense capabilities ultimately failed to deter Russian aggression. Similarly to Russia, China is also a permanent member of the UNSC and a nuclear-armed state that expressed intentions of a possible invasion of Taiwan. In this sense, Japan might also lack sufficient military capabilities to deter possible Chinese military aggression. In other words, if the Invasion of Ukraine caused a security crisis in Europe, the very same situation might happen in the Indo-Pacific region. Therefore, to deter military aggression, it might be essential to possess enough military capabilities to do so. Secondly, Japan has a unique position being surrounded by seas and long coastlines with numerous islands which are part of the Japanese Exclusive Economic Zone, which Japan has to defend together with its natural resources due to being dependent on overseas trade due to its position. For this reason, with increasing security threats, coming especially from neighboring countries, Japan falls behind in its ability to protect its territory, and thus faces defense challenges translated into decision-making concerning their defense policy.

3.2. Who are the Players

On account of Japan finding itself in a changing strategic environment with numerous defense challenges, Japan claims that it does not have any other choice than to reconsider and update its previous stances in international relations. However, due to international relations being interdependent, Japan needs to consider other countries in their strategic decision-making. For the question of military buildup, countries that pose a significant threat to Japanese territory, as well as strategic partners and allies, need to be considered. These countries that impact Japanese decision-making are China, North Korea, Russia, the Republic of Korea (South Korea), and the United States of America. These countries become the players of the game.

3.2.1. USA

One of the major partners of Japan is the USA, characterized by political, economic, and security ties. The U.S.–Japanese relations evolved significantly after Japan's surrender in World War II, marked by post-war reconstruction led by USA's General Douglas MacArthur, as well as by The Treaty of San Francisco, signed in 1951, which established Japan as a sovereign state, and laid the foundations for the USA-Japan alliance. This was then followed by the USA-Japan Security Treaty of 1960, committing both nations to mutual defense in the event of an armed attack, thus making the USA a major Japanese ally, especially when it comes to security in the Indo-Pacific region. This is supported by Japan labeling the USA as playing an "indispensable role not only for the security of Japan but also for the realization of peace and stability in the international community, including in the Indo-Pacific Region" (NSS, 2022, p. 12). Moreover, the USA is believed to influence the content of the Japanese "pacifist" Constitution, mainly Article 9. Consequently, due to being major security and defense allies, both countries saw increased diplomatic and economic cooperation, taking a common stance on issues such as peacekeeping, non-proliferation, or development assistance (Sakaki, Maull, Lukner, Krauss, & Berger, 2020). Their cooperation was further enhanced by the rise of China, or North Korea's nuclear program, which showcased the prominence of the defense alliance amid security challenges in the Asia-Pacific region and related challenges for regional stability.

3.2.2. China

Besides the USA, another major bilateral partner of Japan is China, mainly due to its close geographical proximity as a neighboring country, and being an important trading partner. Yet, this relationship is more complex, influenced by historical, political, and economic factors. To explain, despite the few periods of friendly coexistence, the history of China and Japan relations is mainly “uninterrupted tension, which occasionally escalated into sudden crisis” (Nish, 1990, p. 622). The key aspects of the strained relations between China and Japan lie in historical grievances from the Japanese invasion and occupation of parts of China, as well as disagreements over a satisfactory apology concerning events of World War II, such as the Nanking Massacre and the use of comfort women, both a result of Japanese military history (Nish, 1990). Moreover, both countries have territorial disputes over the Senkaku/Diaoyu Islands in the East China Sea, to which both countries claim sovereignty rights. Yet, China and Japan are major economic and trading partners, having strong economic ties with China being Japan's largest trading partner, resulting in significant economic interdependence. Consequently, combining historical and current interactions, China perceives Japan as a strategic American ally in containing its regional influence, while also recognizing Japan as a source of Western ideas (Kee, n.d.). Also, Japan considers Taiwan an important partner with close economic and “personal” ties, going as far as calling Taiwan a “precious friend of Japan” (NSS, 2022, p.14), which even further strains the relations between the two countries. Having said that, China also sees Japan as a model of development, and a significant contributor to its economic growth through aid, investment, and technology. On the other hand, Japan acknowledges its cultural proximity to China but struggles with a sense of guilt stemming from historical occupations and wars. Moreover, there is a prevailing fear of China as an aggressor, particularly in territorial disputes, and a recognition of economic competition, with both nations fighting for resources and export markets, despite being economic partners. This interplay of cooperation and competition shapes the perceptions each country holds of the other (Kee, n.d.). This is supported by Japanese statements of a goal to build a “constructive and stable relationship” (NSS, 2022, p.13) with China, yet, promising to “strongly oppose China's growing attempts to unilaterally change the status quo by

force” (NSS, 2022, p. 14), and encouraging China to cooperate with international efforts for arms control or disarmament. In other words, Japan sees China as a military threat but also as an important economic partner in the international arena.

3.2.3. South Korea

Similarly to China, another Japanese neighbor who has strained relations with Japan is South Korea, officially the Republic of Korea (ROK). Similarly, the problematic relations are also a result of historical grievances from the oppressive colonization of Korea (1910-1945) and World War II, mainly centered around comfort women, and compensation for wartime laborers, as well as the controversies over the apology of the actions caused by the Japanese military (Lind, 2022). However, after World War II ended, under the supervision of the USA, South Korea was liberated from the Japanese occupation, with post-war reconstruction leading to economic development for which Japan became a key economic partner. This led to reconciliation attempts. Consequently, the Treaty on Basic Relations was signed in 1965 as a result of the normalization of diplomatic relations efforts, under which Japan provided economic reparations and loans to South Korea, and both countries agreed to resolve property and compensation issues. Yet, despite these efforts, South Korea and Japan do not have a formal security alliance, even though they do share concerns over regional security challenges, such as North Korea's nuclear program. However, both countries have formalized security alliances with the USA as their major security partner. Connected to that, Japan considers strategic cooperation between Japan and ROK, and the Japan-U.S.-ROK alliance as one of the key priorities of national security strategy, emphasizing the desire and importance of establishing relations between ROK and Japan based on “friendly and cooperative relations” (NSS, 2022, p.15) This is a major difference between the Japan-China relations and Japan-ROK relations, since Japan and South Korea are collaborating not only economically but also on various security issues and concerns of the regional stability, mostly due to their security alliance with USA.

3.2.4. North Korea

Contrary to South Korea, with similar historical issues and diplomatic challenges, Japan and North Korea developed a strained relationship with no or limited cooperation. Similarly to South Korea, the Occupation of Korea and events of WW2 are marked as the principal reason behind the historical tensions influencing the current strained relations, with the addition of issues revolving around the abduction of Japanese citizens by North Korean agents, which Japan considers to be a major obstacle in peaceful cooperation. However, in contrast to South Korea, Japan often labels North Korea as a major security concern and a threat to national or regional security and stability. This might be due to North Korea not having a formal alliance with the USA which would force Japan and North Korea into cooperation. Instead, North Korea's development of nuclear weapons and ballistic missile tests which often reach Japanese territory have been a major security concern for Japan, given its proximity to the Korean Peninsula, with Japan urging North Korea to take actions toward denuclearization (Yuan, 2023). Moreover, although both China and North Korea are perceived as a security threat to Japan, Japan still maintains strong economic relations with China. That is not the case with North Korea, with Japan participating in efforts to address North Korea's nuclear ambitions through sanctions imposed by the United Nations and regional dialogues, which are heavily restricting economic and financial interactions between Japan and North Korea. In other words, when it comes to relations between Japan and North Korea, the countries label each other as a threat to their security, and maintain limited economic cooperation.

3.2.5. Russia

Another country considered a security threat from the Japanese perspective is neighboring Russia. The reason behind this is a territorial dispute over the Kuril Islands, which were seized by the Soviet Union at the end of World War. However, Japan is claiming sovereignty over this territory, which is known in Japan as the Northern Territories. Even though there have been multiple diplomatic efforts to address this issue, the results were insufficient and the tension between these two countries remained (Yuan, 2023). Yet, similarly to China, Russia and Japan have maintained economic cooperation. This was, however, impacted by the Russian

Invasion of Ukraine, leading to sanctions and thus straining the economic relations between them. Moreover, Japan expressed strong support for Ukraine by providing financial aid and condemning the actions of Russia (Kajimoto, Fahmy, 2024).

3.3. Threats and Conflict Escalation - Chicken Game?

The change in the strategic environment and the increasing military activities of Japan's neighboring countries are the factors necessary for Japan to consider in the strategic decision-making about the military buildup. However, despite the potential severity of the security threats, the necessity of military buildup and its consequences might still be questioned. Firstly, the messages that Japan signals about the necessity of military buildup might be confusing at times. An example can be Japan's statements in the National Security Strategy (2022) document, where Japan claims that it will “further strengthen its efforts in arms control, disarmament, and nonproliferation, in order to improve its security environment” (p.15), while also arguing that they will promote peace and stability by “halting and reversing the trend of arms buildup” (p.15). Yet, the unprecedented historical military buildup might be the opposite of that. Another example of mixed signals is that Japan emphasizes that they will encourage China to promote cooperation “with international efforts for arms control, disarmament, and other such efforts” (NSS, 2022, p.14), yet employ their military buildup, which goes against arms control or disarmament. In other words, while Japan wants to increase military spending and improve its military capabilities, it also wants to strongly encourage China to do the opposite. This possibly paradoxical situation is also supported by Japan expressing their future efforts to build and nurture a “relationship of trust” (NSS, 2022, p.14) with China, while also investing in the unprecedented military buildup, which might lead to very opposite of “relationship of trust”, and might increase the distrust and tensions in the region and between the two countries. In addition, Japan claims that China must contribute to constructive relations by actively participating in dialogue and cooperation at various levels. However, Japan further claims that this was not observed, and therefore, Japan is urged to resort to comprehensive national power to address these challenges and promote stability in the region (NSS, 2022). In other

words, because China failed to cooperate, and often displayed aggressive behavior, it is necessary to respond also with aggression to ensure stability in the region. Consequently, this leads to the question of whether an aggressive response to an aggressor will, in fact, generate peaceful and stable results with the promotion of prosperity, or the opposite - whether it will lead to security dilemma and conflict escalation.

This potential for security dilemma and conflict escalation can be modeled in one of the games of game theory - the game of chicken (chapter 2.1.3). In this scenario, Japan and countries that are labeled as security threats, namely China, North Korea, and Russia, are the key players engaged in strategic interactions. Japan, as the initiator, faces the decision to either escalate its military capabilities or maintain the status quo. The other players have the option of expressing diplomatic protests, implementing military responses, or engaging in negotiations. The payoffs for Japan include potential military dominance also through the alliance with the USA and ROK, the risk of conflict escalation, or the disadvantage of backing down and having inferior military capabilities and thus being more vulnerable to potential security threats. The China-North Korea-Russia payoffs involve successfully deterring Japan's buildup, avoiding conflict, or facing potential security risks if they yield without a strong response. Strategies for both parties include risk calculation, signaling intentions through security and strategy documents or official statements, forming coalitions, demonstrating strength, and engaging in diplomatic channels. The outcome may range from conflict escalation to successful deterrence, influenced by factors such as the strength of alliances, historical context influencing countries' perception of each other, and economic interdependence. In this sense, the worst-case scenario in the modeled game of chicken could be a full-scale military conflict with potentially serious consequences in the form of loss of life, economic downturn, and geopolitical instability for all parties involved. In other words, engaging in military buildup might be viewed as an act of aggression to already existing aggression, and in an environment with high tension, such as the Indo-Pacific region, it can result in more aggressive responses, which escalate into a conflict.

Chapter 4: Analysis of the games

Japan's decision to build its army, despite a longstanding tradition of pacifism and anti-militarism, can be analyzed through the lens of the prisoner's dilemma and game theory as described in the previous chapters. In this sense, the question of why a nation with a historical commitment to pacifism would engage in military buildup might be answered by understanding the strategic interactions among neighboring countries, connected to a response to a complex geopolitical environment with increasing security threats, and pressures from allies and potential adversaries. This decision is similar to a strategic move in the prisoner's dilemma, where the perceived negative consequences of a sudden military buildup might be outweighed by the potential benefits of not being left vulnerable in an unstable region. However, the difference between the traditional arms race described in the prisoner's dilemma and the Japanese military buildup modeled in the prisoner's dilemma is that the defecting and cooperating choices are not necessarily about military resources but rather about the possibility of aggressive responses.

4.1. Japan and China

Japan and China share a history of political tension, territorial disputes, and economic cooperation, thus, a complex geopolitical situation, that affects the stability of the whole Indo-Pacific region. Since China has a strong military and is still engaging in enhancing its military capabilities, Japan finds Chinese military activities threatening and is considering investing in an unprecedented military buildup. This might, however, be perceived as a threat to China, and China might respond to this unprecedented action. In this sense, if both Japan and China choose to invest in diplomatic solutions and limit their military buildup, the Pacific region will benefit from increased stability and reduced military expenditure. However, this scenario seems unlikely due to China signaling further investments in the military buildup and military activities. Therefore, if one country, China, decides to increase its military capabilities while the other, Japan, remains cooperative, China gains a strategic advantage in the short term. In this sense, Since China is applying the strategy of constant defection in the arms race game, without any signs of stopping, this might

lead to a situation where it is not advantageous for Japan to keep the cooperating strategy, and Japan might choose to defect as well, according to the logic of Nash equilibrium. Yet, the payoffs of defecting need to be considered before the defecting strategy can be labeled as Nash equilibrium, therefore, a modeled game is necessary. In this sense, Japan choosing the strategy of cooperating might mean not engaging in the military buildup, while defecting means increasing military spending. However, if Japan decided to pursue the strategy of defection unprecedently, China might perceive this action as a sudden security threat to their territory and might respond aggressively. Therefore, for China, the cooperating option based on the current strategic climate in the Indo-Pacific region would be avoiding an increasingly aggressive reaction to Japanese military buildup and refraining from attacks on Japanese territories, while the defecting option would be a strong reaction as a result of evaluating the action as a threat and security risk. The outcome depends on the strategic decisions made by each nation.

Japan

		“Weak” military	Strong military
China	Not openly aggressive towards Japan—no attacks on Japan	Japan has limited ability to defend its territory, which is part of a territorial dispute with China (Senkaku Island).	China is possibly more deterred, while threatening Japan, but does not act on the threats. A more effective balance of power.
China	Aggressive response, attack on Japanese territory	Japan not being able to defend itself against China.	Open conflict, but Japan can defend itself, or help to protect regional stability.

According to Kelemen (B. Kelemen, personal communication, January, 2024), considering the current security climate, China considers the Japanese military buildup as a substantial threat, largely due to three interconnected factors. Firstly, China positions itself as the primary security guarantor in the region, and any significant enhancement of Japan's military capabilities is perceived as a challenge to China's regional dominance, to which China might respond. Secondly, historical

animosities stemming from Japan's militaristic past contribute to China's mistrust and apprehension regarding Japan's military intentions, leading to considering any militaristic activity of Japan as a threat. Lastly, due to ongoing territorial disputes, such as the Diaoyu/Senkaku Islands in the East China Sea, any increase in Japanese military capabilities might be theoretically perceived as a threat to Chinese territory. The combination of these elements intensifies China's concerns, leading to a perception of the Japanese military buildup as a considerable and multifaceted threat to its security and regional influence, to which it might be necessary to respond. Yet, according to Kelemen, this situation would be also detrimental to China as well, and therefore, China is not likely to start a conflict or respond militarily to the Japanese buildup, stating that the chance of this happening is around 30%. However, according to Kelemen, more problematic might be how the Japanese buildup will affect the wider security environment, suggesting that if the escalation and mutual defection continue, in the future the probability of wider conflict might reach 50%, and regional conflicts might reach 70%. Still, despite the 70% possibility of a regional conflict in the far future, as of the near future, the possibility of open conflicts is small enough that the payoff of mutual defection is not the likely equilibrium of the game.

Nevertheless, it poses a question of how China would react if Japan invested in military buildup. According to Kelemen, China cannot respond aggressively because it acknowledges Japan's sovereign right to build its army, despite finding it provocative. Therefore, since Japan's decision to build up its military is within its rights, China is likely to respond with an increase in threatening actions with non-military character, such as increased military exercises, aggressive rhetoric, or diplomatic maneuvers. However, according to Kelemen, even if the decision in favor of military buildup will increase tensions, if it is done carefully, messaging that the direct threat to China is unlikely, it can further secure the position of Japan. This can be done by clear messaging that the military buildup is a last resort option, with the main purpose of deterrence, while soft diplomacy and cooperation are the main priorities of national security strategy. This can be observed in the National Security Strategy (2022) of Japan. Therefore, even though the military buildup is expected to strain the overall relationship between the two nations, yet, an immediate resort to military

engagement is not likely. In this sense, the payoffs of Japan pursuing defection might be more optimal for Japan than the payoffs of cooperating. To express this in game theory logic, it would look like this:

If China cooperates, it is better for Japan to defect. If China defects, it is better for Japan to defect.

If Japan cooperates, it is better for China to cooperate. If Japan defects, it is better for China to cooperate.

Preferred payoffs for China by value: $1 > 2 > 3 > 4$

Preferred payoffs for Japan by value: $2 > 4 > 1 > 3$

$2 > 1 > 4 > 3$

Payoff 2 is the equilibrium of the game.

4.2. Japan and North Korea

Similarly to China, North Korea and Japan are also in a complex security dilemma. To explain, North Korea's military activities are considered a major threat to Japan's security, however, investing in military buildup by Japan might seem like a threat to North Korea. Moreover, North Korea has been defecting for a significant time by building its military capabilities, oftentimes against international law and order. Therefore, similarly to the game with China, for Japan, the strategy of defecting might be the optimal solution. Yet, parallel to China, there is a possibility of conflict escalation, especially since both countries do not have economic cooperation leading to economic interdependence, which differs from the game with China. Therefore, the strategy of cooperation for North Korea is not directly attacking Japan with military means, or not responding aggressively to the military buildup. On the other hand, the strategy of defecting is openly attacking Japan, or even directly responding by military means. The role of Japan is to balance its legitimate security concerns with the need to avoid provoking an aggressive response from North Korea.

Japan

		“Weak” military	Strong military
North Korea	Not attacking Japan	No open conflict, but North Korea might continue sending “threatening” testing missiles to Japanese territory, against which Japan might struggle to defend.	Possible deterrence of military exercises, deterrence of attack, a decrease of security threat.
North Korea	Attacking Japan	Japan struggles with defending its territories.	Open conflict but Japan can defend itself.

This situation might seem similar to the game with China, however, according to Kelemen (B. Kelemen, personal communication, January, 2024), there is a major difference. Kelemen claims that while China does perceive the military buildup as a threat, this is not necessarily the case for North Korea. Due to nuclear weapons and military activities, North Korea is indeed able to be a destabilizing factor for Japan; however, the military capabilities of Japan are not going to alter this security environment in a major way. However, Kelemen claims that the turning point would be Japan responding aggressively and with military power to the threatening actions of North Korea. The relationship between Japan and North Korea is rather delicate, and any military response by Japan could trigger a reciprocal response from North Korea, leading to an open conflict. Thus, although Japan's military capabilities may not necessarily cause an aggressive response from North Korea, the potential for increased military posturing and responses from North Korea could introduce a destabilizing element in the region. And if Japan decides to respond by military power, North Korea would likely respond in the same way. In other words, North Korea would not respond aggressively to Japan enhancing its military capabilities as long as Japan does not use them. This means the following scenario:

If North Korea cooperates, it is better for Japan to defect. If North Korea defects, it is better for Japan to defect.

If Japan cooperates, it is better for North Korea to cooperate. If Japan defects, it is better for North Korea to cooperate.

Preferred payoffs for North Korea by value: $1 > 2 > 3 > 4$

Preferred payoffs for Japan by value: $2 > 4 > 1 > 3$

$2 > 1 > 4 > 3$

Payoff 2 is the equilibrium of the game.

4.3. Japan and USA

In analyzing the relations between the United States and Japan related to military buildup, two predominant theories are possible. One is emphasizing the quest for a stronger partnership, pointing to numerous pressures from Washington (Sakaki, Maull, Lukner, Krauss, & Berger, 2020). This is connected to the fact that the alliance itself might be considered a bit paradoxical since, according to the alliance, the USA is responsible for the protection of Japanese territory in case of attack, while Japan is supposed to do the same with the USA's territory. However, according to the Japanese Constitution and Article 9, this is not possible since Japan can only deploy SDF to protect its territory (Sakaki, Maull, Lukner, Krauss, & Berger, 2020). This was causing a strain on the alliance between the USA and Japan, possibly putting a threat to the whole alliance. The other theory suggests that Japan is pursuing greater independence from the USA and is attempting greater self-reliance when it comes to the security of its territory. According to Hoston (G. Hoston, personal communication, October 2023), when Trump became president in 2017, trust in the reliability of the alliance decreased due to Trump's unpredictability. Therefore, Japan might see the possibility of Trump's stance on foreign policy returning, and consider it a threat to its security. Having said that, Halas (M. Halas, personal communication, January, 2024), Krauss (E. Krauss, personal communication, January, 2024), and Kelemen (B. Kelemen, personal communication, January, 2024) claim that Japan is actually concurrently pursuing both these theories as they are not mutually exclusive. Japan appears to be aligning itself more closely with the United States militarily, fostering a robust deterrent against potential threats from China and North

Korea. This alignment is evident in the increasing integration of their respective militaries. Simultaneously, Japan's military buildup is strategically geared towards enhancing its self-defense capabilities. This dual approach reflects a hedging strategy, preparing for the potential scenarios of increased isolationism in the United States or a deviation from the commitment to defend Japan. In navigating these complex dynamics, Japanese decision-makers are likely influenced by the need to strike a delicate balance between fostering a stronger alliance with the United States and bolstering their own military capabilities for autonomous defense. In this sense, the cooperation option for the USA is being an alliance partner, while the defecting option is leaving the alliance. However, the USA leaving the alliance seems to be an unlikely scenario because the alliance is necessary to balance power against China. Also, the USA does not consider Japanese military buildup as a threat to their security, but they might consider the weak Japanese military as a threat to their security due to the alliance. Consequently, the prisoner's dilemma with Japan and the USA might look like this:

Japan

		“Weak” military	Strong military
USA	Partner in the alliance	Pressures and tensions from the USA, and strained relations in the alliance. Japan is dependent on the USA.	Strong alliance, and balance against potential adversaries.
USA	Not an alliance partner	Japan would probably have to seek help from China, or bigger cooperation with potential adversaries. The USA is struggling to balance against China.	Japan has independence and the ability to defend itself even without dependency on the USA. The USA is struggling with balancing against China due to losing Japan as an ally.

If the USA cooperates, it is better for Japan to defect. If the USA defects, it is better for Japan to defect.

If Japan cooperates, it is better for the USA to cooperate. If Japan defects, it is better for the USA to cooperate.

Preferred payoffs for the USA by value: $2 > 1 > 3 > 4$

Preferred payoffs for Japan by value: $2 > 1 > 4 > 3$

$2 > 1 > 4, 3$

Payoff 2 is the equilibrium of the game

The game is not PD anymore, but reminds more a stag hunt game (assurance game).

4.4. Japan and South Korea

Similarly to the USA, South Korea is also considered to be an ally of Japan. However, the relations between the ROK and Japan differ from the ones with the USA, leading to a different security environment between these two countries when considering the question of military buildup. Since the ROK and Japan are allies, the cooperation and defection choices will be connected to the existence of the alliance rather than about aggressive response to it. This is despite the fact that the relations and trust between the ROK and Japan are more similar to the ones between Japan and China/North Korea than with the USA. This creates an interesting dynamic, where there is potential that the Japanese military buildup might be considered a threat to the ROK. However, it might also be essential for the ROK to have Japan with a strong military.

		Japan	
		“Weak” military	Strong military
South Korea	Partner in alliance	The higher pressure on the ROK in alliance, increasing tension in relations with Japan. Japan is dependent on the ROK and the USA.	Stronger and more secure alliance.
South Korea	Not an alliance partner (unlikely future scenario)	ROK is a potential security threat due to historical resentment and strong military capabilities.	Japan can defend itself. A strong military is a deterrent in case of a security threat. Also, Japan is a potential security threat to the ROK.

If the ROK cooperates, it is better for Japan to defect. If the ROK defects, it is better for Japan to defect.

If Japan cooperates, it is better for the ROK to cooperate. If Japan defects, it is better for the ROK to cooperate.

Preferred payoffs for ROK by value: $2 > 1 > 3 > 4$

Preferred payoffs for Japan by value: $2 > 1 > 4 > 3$

$2 > 1 > 4, 3$

Payoff 2 is the equilibrium of the game.

The game is not PD anymore.

4.5. Japan and Russia

In the context of the prisoner's dilemma between Japan and Russia regarding Japanese military buildup, the assessment of Russia's threat to Japan involves considering Russia's role as a destabilizing factor in the region, exemplified by its involvement in conflicts like the invasion of Ukraine, with Hoston claiming that it was one of the major pushes for Japan to invest in military capabilities. Also, the Invasion of Ukraine is used in NSS (2022) and NDS (2022) as a major factor influencing Japanese strategic decisions since the act showcased that Russia does not respect international law and international order, which Japan finds especially threatening due to unresolved territorial claims. For this reason, the cooperating choice for Russia is not attacking Japanese territories, while the defecting choice is the attack on Japanese territories. However, Kelemen (B. Kelemen, personal communication, January 2024) argues that Russia might not be a direct threat to Japanese territories because Russia may have more immediate geopolitical priorities than the territorial disputes with Japan, and thus does not express significant concern about Japanese military buildup. In navigating this dilemma, Japan faces the challenge of balancing the perceived threat from Russia with the need for military preparedness, and avoidance of provocation. This means that the game between Japan and Russia might look like this:

Japan

		“Weak” military	Strong military
Russia	Not attacking Japan, no aggressive response	Japan is vulnerable to Russian potential attacks. However, no open conflict between the countries, which would require resources.	Deterrence. Japan is prepared to defend its territories.
Russia	Attacking Japan	Japanese territories are vulnerable to Russian attack. The open attack requires resources.	Japan can defend its territories. The potential conflict would be expensive.

If Russia cooperates, it is better for Japan to defect. If Russia defects, it is better for Japan to defect.

If Japan cooperates, it is better for Russia to cooperate. If Japan defects, it is better for Russia to cooperate.

Preferred payoffs for Russia by value: 1>2>3>4

Preferred payoffs for Japan by value: 2>4>1>3

2>1>4>3

Payoff 2 is the equilibrium of the game.

4.6. Final Model

Japan’s security dilemma regarding the military buildup and its strategic decision impacts national security as well as regional dynamics in the Indo-Pacific region. Therefore, Japan remains to be a player in the final game, a combination of previous games, with options of enhancing military capabilities or refraining from it. The other player is the combination of previous individual games with China, North Korea, USA, ROK, and Russia. The strategic choice of cooperation in this game consists of Japan maintaining the partnership with key allies, while the countries that are labeled as security threats refrain from aggressive response to the military buildup, or do not have an intention to attack the Japanese territories. On the other hand, the strategic choice of defection reflects aggressive responses to Japanese military buildup,

potential attacks on Japanese territories, as well as the end of defense alliances. If Japan opts not to build up its military but other countries attack, Japan becomes vulnerable, contributing to regional instability and risking the loss of its strategic position. Moreover, no buildup might lead to the loss of security of the alliance or increased tensions within the alliance. On the other hand, if Japan chooses military buildup and faces no attacks, the nation stands to gain more independence, maintain a stronger alliance, and establish deterrence against potential security threats. The balanced power dynamics in the region may also reduce the likelihood of conflicts, fostering stability and cooperation. Yet, the decision would further strain relations with countries labeled as a security threat, leading to a potential for a wider future conflict. In the scenario where Japan invests in a military buildup, and countries decide to attack, a conflict ensues, but the presence of a robust military can lead to balanced strength and increase the possibility of Japan and its allies prevailing in the conflict. In this sense, Japan's decision-making process must carefully weigh the potential risks and benefits associated with each scenario, considering the broader implications for regional stability, alliances, and national security.

Illustration of the game:

	No buildup (cooperation)	Build up (defection)
Cooperation (no attack on Japan, the existence of alliance partnerships)	<ol style="list-style-type: none"> 1. Japan is dependent on its allies, causing tense relations with them. 2. There is a power imbalance in the region. 3. Japan is vulnerable to attacks, leading to significant security threats due to territorial disputes. 4. No open conflict 	<ol style="list-style-type: none"> 1. Japan is more independent. 2. Stronger alliance. 3. Japan can defend itself. 4. Japan is possibly less influenced or endangered by threats. 5. Deterrence in the region, power in the region is more balanced. 7. Relations with neighboring countries are more strained, and there is a higher tension in the region 8. Potential increase in threatening actions from potential adversaries 9. Potential for an arms race. 10. No open conflict in the near future.

Defection (attack on Japanese territories, losing partnerships in alliance)	<ol style="list-style-type: none"> 1. Japan is not able to defend itself. 2. Regional instability. 3. Japan is losing its position in the region. 4. Japan is losing its allies. 5. Dependency on countries that are simultaneously labeled as security threats. 6. Higher possibility of conflicts in the region such as the Taiwan or South China Sea. 	<ol style="list-style-type: none"> 1. Conflict, but with balanced strength. 2. Potential of Japan and its allies winning the conflict. 3. Resources for open - conflict needs to be allocated. 4. Potential for consequent domestic politics issues.
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According to Krauss (E. Krauss, personal communication, January 2024), the main factors that are motivating Japan to enhance its military capabilities are the rise of China as a major military power, and the threats of a North Korean regime. He claims that these have changed the perceptions of Japanese policymakers about the best way to secure the security of Japan, moving toward more military rearmament and closer to the US in their military alliance (E. Krauss, personal communication, January 2024). Yet, it does not explain why now. To this, Krauss adds that the Russian invasion of Ukraine might be a key factor, since it influenced the relationships among the major powers, explaining that the U.S., EU, and Japan saw the invasion as a threat to all democracies, possibly posing as an equivalent to what might happen in the Asia-Pacific with China and Taiwan. For this reason, it brought Japan, the US, and the EU closer among the major powers. And because China refused to condemn Russia, it intensified US-Chinese relations, thus disrupting the entire relationship among the major powers (E. Krauss, personal communication, January 2024). Therefore, this disruption might cause Japan to strengthen its alliance with the USA, which can be done through military buildup due to the pressure from Washington. This then points to the cooperation games and defense alliances.

However, despite the Invasion of Ukraine increasing the threats of an Invasion of Taiwan, whether there will be a potential invasion of Taiwan and consequent conflict escalation remains questionable. Yet, the People’s Liberation Army lieutenant general signaled that in case of an Invasion of Taiwan, Senkaku Island might be also seized by

China (Roy, 2024), which is further increasing the security threat for Japan. This then leads to the question of deterrence. In the official National Security Strategy (2022) and National Defence Strategy (2022) documents, Japan mentions several times that the reason behind the military buildup is deterrence. In the context of military strategy, deterrence by denial involves building capabilities and defenses that make it difficult or impossible for an adversary to achieve its goals. This can include the development of robust military capabilities, advanced technologies, and fortified infrastructure to resist and deter potential threats, which can be seen in the Japanese case study. However, this can lead to an arms race, leading to a security dilemma. This would suggest that even if the military buildup would not lead to direct threats and aggressive responses using military capabilities, it would strain the relations between Japan's neighboring countries and even further increase the tensions, mistrust, and animosity in the Indo-Pacific region, which might potentially escalate in the wider future. Yet, a direct and immediate aggressive response to the buildup might be unlikely (B. Kelemen, personal communication, January 2024). Connected to that, Roy (2024) suggests that China might increase the number of threatening actions; however, this would be according to China's usual game of chicken, where China either reaches its goal of the game or yields to save face since China also does not want a war with Japan. Roy (2024) further states that China's approach to foreign policy usually involves pressuring opponents, whether through economic manipulation or military threats, to force a submission. However, if the opponents stand firm, China might choose to withdraw quietly to preserve its reputation. In this sense, the Nash equilibrium of the game of Japanese military buildup might look like this:

If Allies cooperate, it is better for Japan to defect. If the Allies defect, it is better for
Japan to defect.

If Japan cooperates, it is better for Allies to cooperate. If Japan defects, it is better for
Allies to cooperate.

If potential Adversaries cooperate, it is better for Japan to defect. If potential
Adversaries defect, it is better for Japan to defect.

If Japan cooperates, it is better for potential Adversaries to cooperate. If Japan defects, it is better for potential Adversaries to cooperate.

Preferred payoffs for Allies by value: $2 > 1 > 3 > 4$

Preferred payoffs for Enemies by value: $1 > 2 > 3 > 4$

Preferred payoffs for Japan by value: $2 > 4 > 1 > 3$

$2 > 1 > 4 > 3$

Payoff 2 is the equilibrium of the game.

Having said that, the buildup might even more visibly shape the alliances in the region. If the Invasion of Ukraine brought China, Russia, and North Korea together, signaling that even defecting countries can cooperate, it also brought the USA, Japan, ROK, and EU with Australia, potentially even the Philippines (Schöttli, 2024) closer together as well. Even Japan claims that even though the responsibility for the protection of the territories lies primarily on the country itself, individual nations cannot solely ensure their security (NDS, 2022). To support that, Lind (2022) claims that Japan's shift in military postures is motivated "by protection, not ambition" (para. 16), further stating that the buildup is "negotiated transparently among coalition partners, before a watchful and dovish public" (para. 16), and emphasizing that the Japanese military buildup "signal a greater contribution by a peaceful country to security in Asia" (para.16). Therefore, there is a renewed understanding of the significance of collaborating with allies possessing both the intent and capability to collectively address invasions. In this sense, even though the countries might choose defecting strategies in their security choices, cooperation, and cooperative games will prevail, but in the form of defense alliances. Moreover, even the defection choices might turn out to be cooperative choices. In other words, Japan's military buildup might be a choice of cooperation with its allies, while simultaneously a choice of defection with the enemies, but the defection choice might lead to cooperation even with adversaries. This then leaves Japan with no other choice than the defection - the military buildup.

Conclusion

Having a reputation as a pacifist nation, Japan's recent military actions challenge this characterization. The shift from the constraints of Article 9 of the Constitution to a bold military buildup raises questions about its motivations and potential consequences. The National Defense Strategy, the National Security Strategy, and the Defense Buildup Program outline a departure from Article 9's constraints, with plans to enhance military capabilities, even introducing counter-strike capabilities, which indicates a departure from its traditional pacifist security stance. The move suggests a reevaluation of Japan's security priorities and introduces the potential for military actions beyond self-defense. While Japan claims this buildup aims to improve regional security, it can strain relations with neighbors, raising concerns about security consequences. The move adds complexity amid global tensions, which calls for a deeper analysis of regional dynamics and alliances, to understand Japan's unprecedented decision.

Due to the interdependence of the international arena, it was essential to explore who might impact Japanese security decisions, and who influenced Japan in strategic decisions. In this sense, game theory and its application to international relations as a theoretical framework provided a more profound understanding of the complexity of the military buildup. Especially the use of prisoner's dilemma illustrated the complex interplay of strategic choices among actors while providing an understanding of the incentives and potential outcomes when countries, including Japan, make decisions regarding military capabilities. The prisoner dilemma's focus on cooperation versus defection aligns with the dynamics of alliances and potential conflicts in the Indo-Pacific region, providing a conceptual lens to explore the consequences of Japan's choices on regional stability and international relations. Moreover, due to mathematical foundations, concepts from various theories of international relations can be put into numerical calculations of preferences of prisoner's dilemma, and thus equilibrium of the game can be more unbiased.

Using this approach to the research question suggested that Japan's decision to bolster its military capabilities is influenced by complex geopolitical factors, including

the rise of China and concerns about North Korea, which play a major role in the perception of security threats by Japan. The Russian invasion of Ukraine has further shaped Japan's security posture, leading to strengthening existing alliances, but also prompted Japan to reevaluate its pacifist security posture. The potential Chinese intervention in Taiwan, akin to Russia's actions in Ukraine, looms large in this strategic reassessment, pushing Japan towards closer collaboration with the United States and reinforcing the primacy of defense alliances. However, to be an essential and credible partner in an alliance, Japan needed to answer to the requirements of the alliance, leading to responding to the push for enhanced military capabilities. This then leads to straining relations with neighbors and potential adversaries, resulting in further increases in tensions in the region. However, even though the Japanese military decision will have an impact on the dynamic in the Indo-Pacific region, open conflict escalation due to the buildup itself is unlikely. Yet, the buildup needs to be done carefully to avoid the perception of provocation by neighboring countries such as China, North Korea, and Russia. To do so, Japan emphasizes self-defense purposes and deterrence as the principal aim of the military buildup, while suggesting that the buildup is not about increasing power, but about preparedness. Consequently, taking all these considerations in mind, the equilibrium of the game between Japan, and the neighboring countries, who are either threats or allies, focusing on the question of the reasons, impacts, and influences behind the military buildup, modeled on the prisoner's dilemma, is in favor of the buildup as the Nash equilibrium of the game. Moreover, it also predicts the unlikelihood of near-future conflict escalation despite further strained relations and security threats. Also, it showcases the trend of strengthening defense alliances and simultaneous pursuit of cooperative strategies despite defection, leading to a situation where even defection can turn out to be cooperation in a prisoner's dilemma.

This then raises the question of whether one of the most pacifist countries investing in unprecedented military buildup suggests the neorealist or neoliberal trend in the international arena. Opposed to neorealism, neoliberalism emphasizes the interdependence and role of cooperation, while suggesting that states overcome security dilemmas through cooperation and coordination, encouraged by the norms

or treaties. In other words, neoliberalism emphasizes cooperation and economic interdependence, which might speak against military buildup and arms race. Yet neoliberalism does recognize that military buildup remains a feature of international politics due to factors such as the security dilemma, bargaining dynamics, and deterrence. In this sense, the Japanese military buildup showcased that states that prefer peaceful relations might be forced into an arms race to ensure their security, rather than to seek aggressive dominance to maximize their power. Moreover, the Japanese enhanced military capabilities are focused on enhancing the bargaining power in negotiations to achieve regional cooperation. Consequently, through cooperation, states can achieve better security outcomes collectively, even if there are short-term sacrifices for individual states. This might better reflect the situation in the Indo-Pacific region, where in an environment full of mistrust and potential security risks, cooperation emerges. As Halas (2011) claims, even if there are wars and conflicts in the international arena with countries constantly defecting, the benefits of cooperation will lead to at least some countries' willingness to cooperate, resulting in cooperative strategies finding each other. By enhancing the cooperation, these countries will come out as winners of the games with the highest gain. Therefore, Japan's choosing military buildup is an act of cooperation with its allies in order to increase the security of the region and potentially become the winner of a more global security game, while also choosing defection against enemies as a response to long-lasting defection strategies from the opponents. Yet, even the opponents will be forced to choose cooperative strategies, forming a defense alliance. This might be an interesting case for a more general question of whether are countries more likely to compete or to cooperate, suggesting that the answer might lie in cooperation.

Yet, even though the careful military buildup seems to be an equilibrium of the game, leading to the pursuit of the enhancement of military capabilities, it raises more questions, which need to be further researched. Since Japan is a democratic country, the decision for a military buildup needs sufficient public support. However, this might be problematic due to historical anti-militaristic sentiments. As Krauss (E. Krauss, personal communication, January 2024) claims, the Invasion of Ukraine has

already made at least some of the Japanese public more willing to accept some greater buildup of its military. But there are limits to that since anti-militarism sentiments are still strong among some in Japan. Moreover, since military buildups need resources, the public might not favor accepting paying more in taxes to increase the defense budget. Also, the Japanese public does not necessarily favor Japan coming to the aid of Taiwan in case of a Chinese invasion (E. Krauss, personal communication, January 2024). In this sense, it might be possible that a more rapid military buildup or Japan's actual use of military force would deeply divide the public. Moreover, the issues of defense and the US-Japan alliance have always been the most dividing issue in post-war Japanese politics. Although these issues have become less intense over the years, the division still exists and could be badly intensified by too rapid a change in Japan's reluctance to use force. In this sense, it could be essential to research how the military buildup or a potential escalation in Japan's military activities will impact the cultural and societal dynamics within the country, possibly based on Putnam's two-level games. In other words, how it can change public sentiment or national identity. Moreover, research into signaling and messaging the severity of the security threats to the Japanese public might be essential to explore, since it can pose a question of whether the described security threats are as dire, or whether it is what Japan wants the public to think to approve the increase in the defense budget.

Resumé

Nedávne bezprecedentné rozhodnutie Japonska zvýšiť svoje vojenské kapacity prostredníctvom budovania armády môže znamenať odklon od jeho historického pacifistického postoja, čo by mohlo signalizovať zmeny v širšej medzinárodnej aréne. Zatiaľ čo Japonsko tvrdí, že cieľom tohto budovania je zlepšiť regionálnu bezpečnosť, zbrojenie môže narušiť vzťahy so susednými krajinami, čo vyvoláva obavy z bezpečnostných dôsledkov pre celý región. Táto práca skúma otázku, prečo Japonsko buduje vojenskú silu, a aké to má implikácie na regionálne a globálne prostredie medzinárodných vzťahov, prostredníctvom analýzy bezpečnostných hrozieb v indicko-pacifickej oblasti (zmeny v globálnom a regionálnom strategickom prostredí, vojenské trendy v regióne, a konkrétne obranné výzvy Japonska), vzťahov so susednými krajinami (historické a ekonomické vzťahy) a možností eskalácie konfliktu ako následok vojenského budovania.

Na zodpovedanie výskumnej otázky vzhľadom na vzájomnú závislosť v rámci medzinárodných vzťahov bolo nevyhnutné preskúmať, kto by mohol ovplyvniť japonské bezpečnostné rozhodnutia. V tomto zmysle teória hier ako teoretický rámec, a jej aplikácia na medzinárodné vzťahy poskytli hlbšie pochopenie zložitosti vojenského budovania. Najmä použitie väzňovej dilemy na prípadovú štúdiu Japonska ilustrovalo komplexnú súhrnu strategických rozhodnutí medzi aktérmi a zároveň poskytlo pochopenie stimulov a potenciálnych výsledkov rozhodnutí týkajúcich sa vojenských kapacít, ktoré krajiny vrátane Japonska prijímajú. Navyše, vďaka matematickým základom je možné do numerických výpočtov preferencií väzňovej dilemy vložiť koncepty z rôznych teórií medzinárodných vzťahov, a tým môže byť riešenie hry viac objektívne.

Použitie tohto prístupu k výskumnej otázke naznačilo, že rozhodnutie Japonska posilniť svoje vojenské kapacity je ovplyvnené zložitými geopolitickými faktormi, vrátane vzostupu vojenskej moci Číny a vojenskej aktivity Severnej Kórei, ktoré zohrávajú hlavnú úlohu vo vnímaní bezpečnostných hrozieb Japonska. Ruská invázia na Ukrajine ďalej formovala bezpečnostnú pozíciu Japonska, v zmysle potenciálnej

Čínskej intervencie na Taiwane, podobnej ruským akciám na Ukrajine, čo podnietilo Japonsko aby prehodnotilo svoju pacifistickú bezpečnostnú politiku. To doviedlo Japonsko k hlbšej participácii v rámci bezpečnostných aliancií, hlavne s USA. Avšak, aby Japonsko bolo stabilnejším partnerom v aliancií, muselo podľahnúť tlakom partnerov aliancie, a investovať do vojenských kapacít. To však vedie k napätým vzťahom so susedmi a potenciálnymi protivníkmi, čo má za následok ďalšie zvyšovanie napätia v regióne. Napriek tomu, že rozhodnutie japonskej armády bude mať vplyv na dynamiku v indicko-pacifickom regióne, eskalácia otvoreného konfliktu v dôsledku samotného zbrojenia je nepravdepodobná. No je tiež dôležité zbrojiť opatrne, aby sa predišlo vnímaniu provokácií zo strany susedných krajín, ako sú Čína, Severná Kórea a Rusko. Aby tak urobili, Japonsko zdôrazňuje sebaobránné účely a odstrašenie ako hlavný cieľ budovania armády, pričom naznačuje, že budovanie nie je o zvýšení moci, ale o pripravenosti. V dôsledku toho a berúc do úvahy všetky tieto úvahy, riešenie väzňovej dilemy medzi Japonskom a susednými krajinami, je v prospech budovania. Navyše predpovedá aj nepravdepodobnosť blízkej eskalácie konfliktu napriek napätým vzťahom a bezpečnostným hrozbám. Ukazuje tiež trend posilňovania obranných aliancií a súčasného presadzovania kooperatívnych stratégií aj napriek "podvádzaniu/zrade", čo vedie k situácii, v ktorej sa aj podvádzanie môže vo väzňovej dileme ukázať ako spolupráca.

To vyvoláva otázku, či investície jednej z najpacifistickejších krajín do bezprecedentného budovania armády naznačuje neorealistickej alebo neoliberalný trend. Na rozdiel od neorealizmu, neoliberalizmus zdôrazňuje vzájomnú závislosť a úlohu spolupráce, pričom navrhuje, aby štáty prekonávali bezpečnostné dilemy prostredníctvom spolupráce a koordinácie. Neoliberalizmus si však uvedomuje, že zbrojenie zostáva súčasťou medzinárodnej politiky. V tomto zmysle budovanie japonskej armády ukázalo, že štáty, ktoré uprednostňujú mierové vzťahy, môžu byť prinútené k zbrojeniu, avšak dôvodom je zaistenie bezpečnosti, namiesto toho, aby sa snažili o agresívnu dominanciu s cieľom maximalizovať svoju moc. To by mohlo lepšie odrážať situáciu v indicko-pacifickom regióne, kde v prostredí plnom nedôvery a potenciálnych bezpečnostných rizík vzniká spolupráca, a práve posilnením spolupráce krajiny vyjdú ako víťazi hier s najvyšším ziskom.

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