Masteroppgave

NTNU
Norges teknisk-naturvitenskapelige universitet
Fakultet for samfunns- og utdanningsvitenskap
Institutt for sosiologi og statsvitenskap

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# "Rational Madman?"

## Understanding the 2017-2018 North Korea crisis through the lens of bargaining theory

Masteroppgave i Statsvitenskap
Veileder: Jo Jakobsen

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Abstrakt på Norsk:

Selv om Nord Korea har blitt mer og mer diplomatisk og økonomisk isolert, så har de holdt fast på å utvikle og bygge atomvåpen. Nord Korea krisen 2017-2018 er bare den siste av en lang rekke kriser på den Koreanske Halvøy. Formålet med denne studien er å finne ut om USA brukte madman teori under 2017-2018 Nord Korea krisen og dermed øke forståelsen av kriser som vil redusere sjansen for at atomvåpen blir brukt.

Om en trussel blir trodd eller ikke er en av de viktigste tingene med en trussel. Madman teori er en bløff som prøver å øke din forhandlingsposisjon ved å oppføre deg irrasjonelt og det er få ting som er mer irrasjonelt enn å true med atomvåpen. Bruk av atomvåpen er en trussel ikke bare til de involverte parter i en konflikt, men hele menneskeheten i sin helhet og bruksområdet som trussel begrenses deretter. Prinsippet om rasjonale aktører forhandlingsteori sier at partene må være rasjonelle og hvis det å true med atomvåpen er irrasjonelt da vil jo ingen tro på trusselen. Derfor må det være noe annet enn en bløff som kan gjøre at madman teori kan fungere, jeg konkluderer med at madman teori egentlig er en trussel med tilfeldig element.

Ved å analysere valgene og preferansene USA og Nord Korea stod ovenfor i denne krisen skaper jeg et spill basert på spillteori og sammenligner det med hva som skjedde basert på et datasett jeg har laget på grunnlag av nyhetsartikler. Dette gir meg innsyn til å forstå de valgene som ble tatt og utfallene krisen kunne ha hatt.

Funnene i denne studien peker på at USA brukte madman teori under 2017-2018 Nord Korea krisen.. Mitt spill og analyse viser at min det var den eneste rasjonelle måten for USA for å få Nord Korea til å gi opp atomvåpen programmet sitt.

## Preface

I remember clearly what is now known as the 2017-2018 North Korea crisis in the news cycle. As a student of political science, one is naturally inclined to follow international politics. Though, it is not like I had a choice, the headlines in the news every day, for months on end, were related to the crisis. There were updates on what was happening, expert opinion on what could happen next and commentators chiming in on what should have happened. While I personally never thought a war could break out at the time, there were plenty of my fellow students that thought war was imminent and naturally this led to hefty discussions over lunch. These discussions are some of my fondest memories of student life, which is weird thinking about it today. I find it simply perplexing that I have fond memories so intertwined with actual threats of nuclear war.

Writing this thesis have been a long journey, there have been so many sleepless nights and a roller-coaster between supreme confidence and bottomless doubt. In essence this thesis is my journey to understand the rational in the irrational. It has been an experience that have taught me that for every answer you find the more question you will ask and to push through and not give up when it gets tough.

I must first and foremost thank my supervisor Jo Jakobsen, who has been an incredible support through this entire journey. Nudging me in the right direction when I was lost and giving me supportive words when my confidence was low have truly been invaluable to me. I must also thank my close and extended family that have been a big support for me through this entire endeavour. A large thanks go to all my friends who have helped from everything from proof reading to unwinding. Special thanks go to my friends Oda who pushed me to start this journey and Sigurd who pushed me to finish it.

# Contents

# Chapter 1: Introduction

On the evening of the 28th of July 2017, a missile launch was detected and 45 minutes after it took flight it landed without doing any damage in the sea outside of Japan. The origin of this missile was North Korea, and it signified a large breakthrough in their missile program. Suddenly North Korea had shown the world, and most importantly the United States, that they were in possession of an intercontinental ballistic missile capable of hitting most, if not all, of the United States (Kim & Ali, 2017). The response from the United States was immediate and on the 30th of July the US flew bombers over South Korea in a display of power. This was followed up a few days later, when President Trump vowed further threats by North Korea against the United States will be met with "fire and fury" to a degree this world has never seen before (Walcott, 2017). In other words, a sitting president of the United States promised nuclear annihilation, not as a response to a nuclear strike, not even as a response to conventional war, but instead as a response to anything that the United States would see as a threat. Despite this spine-chilling threat, less than a month later North Korea performed a nuclear test. The outcome from this, over six months later, was not the nuclear fire that was promised, but instead the first ever meeting between the leaders of the United States and North Korea.

A frightening thing with nuclear weapons is that it only requires one madman in a fit of insanity to plunge large parts of humanity into nuclear holocaust. The 2017-2018 North Korea crisis was a wakeup call that nuclear weapons are an option, whether we want them to or not. This means that one needs to be extra vigilante to expand our knowledge on why and how they can become an option, so that nuclear weapons are never chosen as that option. Therefore, this thesis is expanding this field by attempting to answer the following: Did the United States use madman theory during the 2017-2018 North Korea crisis? The answer to this question, according to this thesis, is yes. The word mad is often associated with behaving crazy, therefore it would be easy to think one must delve into the mind of people to find an answer. However, the answer instead lies in the peculiar world of international politics, more specifically bargaining theory and its paradoxical relationship with the world's most powerful bargaining chip, nuclear weapons.

Ever since North Korea admitted to possessing nuclear weapons in 2005, the question of how to get them to denuclearize have been a question with no clear answer. The main response

to their nuclear and missile program have been through ever increasing sanctions from individual countries and the United Nation Security Council (UNSC). This means that even their only ally, China, actively do not wish them to possess nuclear weaponry. Despite all of this, North Korea have prioritized keeping their nuclear program going (Solingen, 2007).

Madman theory, as described by former US President Richard Nixon, is a bluff that tries to increase your bargaining position by behaving irrationally to threaten your opponent. Previous research suggests that application of what was supposed to be a bluff instead involved a real risk – it therefore became a threat with merit. This implies that the true nature of madman theory lies outside the concept of madman theory itself. This thesis delves into bargaining theory to gain a firm grasp of this and gain a better understanding of United States' behaviour during the 2017-2018 North Korea crisis.

This thesis is built around core idea that nuclear weapons are powerful. They are in fact so powerful that their value, place and limitations in international politics can be hard to comprehend. When one tries to apply these weapons as a threat, one easily concludes that using them as a threat makes you truly irrational. It is in fact so irrational that believing such a threat breaks with the rational actor principle of bargaining theory, an application of game theory, as described by Schelling (1960). However, by first understanding their irrationality and then understanding the threat with a random element, one can rationally apply nuclear weapons as a threat. That just creates a credible opportunity for them to exist as a threat, it does not mean that nuclear weapons suddenly become a smart or even a sane option as a threat.

In chapter 2 I will build the theoretical foundation of this thesis. This is done by first going over the fundamental problem with nuclear weapons, their strength. I then put them in the context as a deterrent and how their strength works against them. I conclude that their strength is so irrational that their value as a threat is limited as their use is paramount to suicide. This leads me into bargaining theory, an application of game theory, where the players try to achieve a stronger bargaining position than their adversaries while their adversaries try the same. The form in which this bargaining takes place is both tacitly and explicitly, where tacitly is increasing your bargaining position by action and explicitly through words (Schelling, 1960). Bargaining theory gives a powerful tool to better understand the nature and limitations of madman theory. However, it is important that one understands the criticism to it. Lake (2010), Jervis (1982) and Levy (1997) all criticize bargaining theory on its assumption of the rational actor (player). While their arguments differ, they all conclude that it is irrational to assume that

players will behave rationally. While madman theory is, as explained, depicting a strategy of bluff, the actions of the bluff create an actual threat through increasing the chance that something could go wrong. I therefore conclude that the true nature of madman theory is a threat with a random element.

Chapter 3 will outline the method and data used in this thesis. The method used is game theory, a mathematical approach to understanding the behaviour of rational actors. A game consists of five distinct elements, several players, several strategies for each of them, several possible outcomes, preferences for which outcome they prefer and game rules (Hovi & Rasch, 1993). As the 2017-2018 North Korea crisis fulfil these distinct elements as a sequential game it becomes a tool to understand why and how the crisis ended and why it did not end in a different way. In the thesis I will also give a brief example to show its application. Afterwards I will present how and why I collected the data that is used in the thesis. I conclude this chapter with a timeline to give a concise overview of some of the highlights of the period this dataset covers.

In chapter 4 I go over the background of the conflict starting with the Korean war. I give a brief summary of what have happened over the decades with emphasis on the hostile acts between North Korea and South Korea, showing that the United States have been heavily involved in this conflict ever since the 1950-53 Korean War. There is also a major emphasis on North Korea's path to develop nuclear weapons, and I show how they went from a nation that signed the Non-Proliferation Treaty (NPT) to become the latest nuclear power – despite almost the entire international community being against it and all the steps they have been willing to take to walk down this path.

Chapter 5 is the main analysis of the thesis. I start off by building the framework of the game I will present with emphasis on the preferences of both players. After the framework is built, I summarize the events leading up to the game I use the dataset I have created as basis. The game is then presented, first as subgames and then as whole, with explanations of the choices that the players are presented with and what they mean for the players. This is followed up by what happened based on my dataset. The final section is a discussion of this chapter is a discussion where I compare the game and what happened.

The final chapter, chapter 6, sums the findings in this thesis. I present a quick summary of the thesis leading into my rationale behind why I mean the United States used madman theory during the 2017-2018 North Korea crisis, thereby answering the question that this thesis set out

to answer. This is followed by possible criticisms to this conclusion as well as its limitations. I conclude the thesis with my thoughts about the future of the Korean Peninsula as well as further research.

It is only through threatening nuclear war that United States can create a possibility of North Korea accepting denuclearization. The ultimatum itself, represented by the "fire and fury" threat, is not the deciding factor if the threat is believable. It is instead the random chance of a war which is the actual threat exists, which was increased through such tacit actions as moving military material to the peninsula, weapons tests and conducting military exercises. While the summit meeting itself was a surprise, if one follows the game, the only rational outcome, after the random chance of war did not occur and North Korea did not submit to the ultimatum, was the two sides gaining something.

The conflict is not over as the underlying issues of the crisis, where the United States wants North Korea to denuclearize and North Korea wants the sanctions to disappear. So, the crisis should be seen as in hiatus, just waiting for another flareup.

# Chapter 2: Theory

In this section I will explain the theory and concepts important to understand madman theory. The concepts being explored are nuclear weapons, deterrence, bargaining theory, tacit bargaining, explicit bargaining, madman theory and brinkmanship. I start with the logic behind the illogical nature of nuclear weapons. This leads into the concept and application of deterrence. To solve the inherent problem with nuclear weapons and deterrence I go into bargaining theory. While the answer itself does not lie in bargaining theory, one must understand it, and the criticism levied against it, to grasp the nature and limitations of madman theory – as the madman theory has some severe limitation to its application. Finally, I look at the nature of brinkmanship to gain further understanding of the application of madman behaviour in international politics. I conclude this chapter with a summary of the key points.

## Nuclear weapons

There are few things that are talked about as much as nuclear weapons in international politics. Ever since they were dropped on Japan during World War Two, there has been a never-ending discussion about how these weapons define the world as we see it, either as a focal point of conflict or a deterrence against it. However, an inherent flaw of nuclear weapons, which is at the same time used as one of its main arguments as a deterrent, is its destructive capabilities. The reason for this is that they are so destructive that if used the world would never be the same again. The literal and ecological fallout of any exchange will have far reaching consequences outside of any explosion radius. While the specifics of the fallout of any nuclear exchange between any nations are far outside the scope of this thesis, the destructive power they represent is not. To truly understand what destructive power these weapons possesses, Sagan and Turcoout (1993) summarize it well in an article:

> "With nuclear winter, a massive nuclear attack, even in the absence of retaliatory strikes, is likely to boomerang and, through climatic effects, destroy the aggressor nation, along with many others. Threatening massive retaliation (or de-facto launch-on-warning) became much less credible as an instrument of national policy." (p: 370)

Even if only one side uses such weapons, they could not only doom the targets unfortunate enough to be in the crossfire, but also themselves and humanity in general (Sagan & Turco, 1993). It is important to point out that calculating the true damage of any nuclear exchange is almost impossible and, hence, strongly hypothetical. Carrier (1990), in an article, sums it up as follows:

> "The environmental problems associated with an exchange of nuclear weapons are, today, merely hypothetical. The best attack on that particular environmental problem is to keep them hypothetical" (p: 89).

Both papers are part of the discussion in the 1980s and 90s of nuclear winter. They point out the ridiculousness of nuclear weapons. They are so powerful that you cannot use them. So, what then is the point of having them at all?

## Deterrence

The answer to my last question is deterrence. The cornerstone of deterrence is fear. In other words, using fear to prevent someone else from doing something you do not want them to do. Using fear as a tool to deter your enemy is synonymous to making a threat, and most scholars do not distinguish between these. Scholars treat these two terms as synonymous perhaps because a threat is a form of communicating deterrence.

> "The dictionary's definition of 'deter' corresponds to contemporary usage: to turn aside or discourage through fear; hence, to prevent from action by fear of consequences" (Schelling, 1966, p: 71).

This is how Schelling (1966) defined deterrence in his book *Arms and Influence*. He does so on the basis of what the dictionary says. The word threat is not used in this definition, he refers to it slightly differently in earlier works:

> "When one threatens to fight if attacked or to cut his price if his competitor does, the threat is no more than a communication of one's own incentives, designed to impress in the other the automatic consequences of his act." (Schelling, 1960, p: 35)

Here he does not use the word deterrence. However, according to the earlier definition of 'to deter' this is still deterrence. In other words, threats are a communication stating that actions may be taken according to the counterpart's actions or communications. So, we can say that threats are simply a communication of intent. Although this communication of intent needs to be expressed directly, it can also be implied. One example is showing off your military in a parade. In other words, you are showing your enemies the amount of equipment and muscle you possess in order to make your opponent understand the risk. So, deterrence is stopping the opposition doing something you do not want them to do. This corresponds well with what Huth (1999) says in an article where he defined deterrence as:

> "The concept of deterrence can be defined as the use of threats by one party to convince another party to refrain from initiating some course of action. A threat serves as a deterrent to the extent that it convinces its target not to carry out the intended action because of the costs and losses the target would incur" (p: 26)

For Huth (1999) threats and deterrence are interlinked. The threat serves the purpose of changing the way the opponent acts. If the threat never occurred, the opponent might act differently. Robert Jervis (1982) refined his definition to a shorter one: "One actor deters another by convincing him that the expected value of a certain action is outweighed by the expected punishment" (p: 4-5). While his definition is short, it brings up values of action of punishment. George and Smoke (1974) also lean into the simplified value-based form, but they define it more like a mathematical formula:

> "In its simplest form, deterrence is merely a contingent threat: 'If you do x I shall do y to you.' If the opponent expects the costs of y to be greater than the benefits of x, he will refrain from doing y; he is deterred" (p: 48-49).

The threat in this example is "You should not do x, because then I will respond with y". However, with this simplified version a threat is only working if the gain of x is lower than the loss of y. This also means that action x will be done if threat y is not deterring the opponent sufficiently. This is the definition that will be addressed in this thesis. A threat can only be a deterrent if it is believable. This creates a problem, if the most powerful threat you have – nuclear weapons – is so destructive that no one would believe you if you threatened to use them. Because the action of using them would be akin to suicide. How can you threaten someone with something you cannot use?

## Bargaining:

To find the solution to how nuclear weapons can be used as a threat we must first understand bargaining theory. Bargaining theory is, in a sense, the application of game theory, using the rigid mathematical framework that game theory provides and building a framework on how to apply it to real-world situations. (For an explanation of game theory, please see the methods chapter.) This framework is leaning on the foundation on how the game will be played, which involves an understanding of how different parts influence how the game is set up, what goals the players have, the rules which they play with and the outcome they seek. Adversaries in a bargaining situation will interpret each other by watching the other side's behaviour with the objective of anticipating their next move. While this is taking place, they must also keep in mind that their opponents are doing exactly the same. All of this is to gain an advantage over their adversary, so their bargaining position is strongest. Bargaining theory, according to Schelling (1960), contains two main parts: mutual beneficial bargaining and distributional bargaining. The former is also called efficiency and describes a situation where both parties in a bargaining situation become happier with the outcome. One example of this is when an insurance company offers a cash settlement rather than repairs when a client has been in a car accident. This reduces the overall cost for the insurance company, while at the same time making the client happier, since the client in this example would prefer a cash settlement. This mutual beneficial bargaining is not important for this thesis, as it only concerns itself with the distributional aspect of bargaining. The distributional aspect of bargaining is when gains by one side are at the detriment of the other side. One example of this kind of bargaining is the sale of a product. A higher price will lead to less money for the buyer but selling it for less will mean less money for the seller. In this situation you can picture a range between all the money in the world and no money for the product. A bargain between the seller and customer must be struck, but a bargain will only be struck when one side concedes sufficiently so the other side will accept. However, there are a lot of things that influence where this concession is and what is sufficient for the other side (Schelling, 1960).

## Explicit bargaining

While bargaining comes mainly in two different varieties, Schelling (1960) also explains that it has two different forms. These are explicit and tacit bargaining. Explicit bargaining, according to Lawler (1992), is when both parties have a prior decision to seek a compromise of the problem at hand. They will work together by acknowledging the issues and the possible solutions. It is important that both sides use a direct form of communication to convey offers and counteroffers so that there cannot be misunderstandings between the two sides. Conflicts will be resolved by an explicit and often formal mutual agreement (Lawler, 1992). This is a much more nuanced view than Schelling (1960), who sees it when one offers concessions, primarily using speech. His main point with explicit bargaining is that a large part of the outcome when utilizing explicit bargaining has already been determined before the process of tacit bargaining starts. He is quick to point out that this tacit bargaining should be one of the focal points leading to a solution rather than setting the solution itself in an explicit bargaining situation (Schelling, 1960).

Langlois and Langlois (1996) talk about negotiated bargaining. While the name differs from explicit bargaining, there are clear indications that they cover the same area. This is because they use it as the extreme opposite of tacit bargaining. They also distinguish between negotiated and tacit along the lines of goal, means, value and timing. For negotiated bargaining the lines are the following: Firstly, the goal of bargaining is to negotiate so both sides reach an agreement that is enforceable either by domestic or international law. Secondly, means refers to how the goals can be achieved. These are to be achieved by formal offers in negotiated bargaining, primarily through direct communication by both sides. Thirdly, the values in negotiated agreements are according to what benefits the two involved parties can get out of it. Lastly, they acknowledge that negotiations may last for a very long time. They conclude that negotiated bargaining will be much faster as both sides assume they will come to an agreement. While their description of negotiated behaviour is more nuanced, as compared to how Lawler (1992) described explicit behaviour, Langlois and Langlois (1996) explain the same thing.

## Tacit bargaining

Tacit bargaining, on the other hand, is described by Schelling (1960) as when communication is incomplete or impossible between the sides involved in bargaining. Coming to an agreement with limited or no communication between each other might seem a bit counterintuitive. However, according to him we are surrounded by such agreements on a daily basis, and we work with and against each other all the time.

In his explanation about common interest games, the goal of the participants in a tacit bargaining is to coordinate predictions of each other's actions. In other words, they must converge at the same outcome by recognizing some unique signal that will allow them to do so. One of his examples is that of a map. Two sides need to agree on where to draw a line, but neither can interact in any way or form with the other. On this map there is a river going through it. Schelling suggests that this river will be the natural landmark for where people will draw their line. In the few tests he did, 7 out of 8 pairs of people drew their lines at the river. This is one of many examples leading Schelling (1960) to the following conclusion: "…that people often can coordinate" (p: 55).

While his experiment was only slightly scientific and lacking a large sample size, the conclusion is interesting as we see how people can bargain without communicating with each other. This is also true when looking at the opposite of common interest games, namely divergent interest games. Here, the participants have different objectives. So, for example looking back at the map example introduced earlier, we now include the element of competition, so the area each occupies will determine what score you get. So, drawing a line where you get more land will be advantageous. However, the river is not on the exact middle of the map. At the same time both will lose if they do not draw the same line. This means that the side who is on the "losing" side of the river has the smallest area if they follow the river, so she will now have a strong incentive to not draw the line in parallel to the river. However, at the same time, getting some area is better than getting no area at all. The (unscientific) conclusion of Schelling's test with this saw only 14 out of 22 pairs drawing the same line, and all the ones that drew the same line did so along the river line. This makes logical sense as people did not want to lose. At the same time, they were unable to communicate where they wanted the line to go, so they resorted to a common indicator. While unscientific, his tests

indicate that, while people can to a degree communicate tacitly, there can be limitations (Schelling, 1960).

Downs and Rocke (1990) define tacit bargaining quite elegantly where they identify a wide array of circumstances where tacit bargaining is likely to occur:

> "Tacit bargaining takes place whenever a state attempts to influence the policy choices of another state through behavior, rather than by relying on formal or informal diplomatic exchanges. The process is tacit because actions, rather than rhetoric, constitute the critical medium of communication. It is bargaining and not coercion because the actions are aimed at influencing an outcome that can only be achieved by some measure of joint voluntary behavior." (p: 3)

While elegant, it is important to keep in mind that they are using the concept to analyse arms races as well as arms control. This explains the state limits, where the actors are the states themselves as well as the focus on voluntary behaviour as they identify it as a cooperative behaviour. They emphasise the importance of actions affecting actions; in other words, it is what you do, not what you say, which is important.

Langlois and Langlois (1996) distinguish between negotiated and tacit bargaining along the lines of goal, means, value and timing as described earlier. The goal of tacit bargaining, according to them, is to reach and maintain a cooperative status quo. This is because they perceive the anarchic international system and domestic challenges as crippling with respect to making agreements enforceable. The means to achieve these goals are associated with actions such as retaliation and reciprocation, rather than direct negotiations. It is important to note that they emphasize that tacit bargaining does not exclude direct negations. In their eyes it will lead to what they call "cheap talk" – in other words, nothing. The foundation of getting something from direct negation is dependent on tacit bargaining to put you in a position to be able to get your demands through. In tacit bargaining the value is reliant upon the respective policies of the involved parties. These policies are the foundation that the goal of the status quo needs to be respected for there to be development and stability. There is always the uncertain element that the policies may be changed by future decision makers and therefore upset the status quo. The time that tacit bargaining uses to arrive at an agreement cannot be predicted. This is because despite the expectation that the negotiating will end, there is always tomorrow. This means that there is no set time limit, so if the status quo on the table does not fit the policies, agreement will not be found, and one will try again tomorrow.

## Criticisms

In an article Lake (2010) criticises bargaining theory along four central assumptions that he sees inherent in the theory when applied to real world analysis. He uses the Iraq war as a case. His first criticism is that bargaining theory assumes that states are unitary actors. He explains that specific interests of companies and people who were involved had an impact on the war, but that bargaining theory does not accept that as actors are viewed as unitary ones. This is a direct criticism of how Down and Rocke (1990) defined tacit bargaining. The second criticism is that bargaining theory is modelled in two-player games. According to Lake (2010), this analytic simplification masks dynamics that are important. By limiting yourself to two player games the cost associated with asymmetric information and signalling become much more muted than if one makes n-actor models instead. This is because the same information and signals can have different effects when more actors are involved. What reduces the chance of war with one group can cause a war with the other. His third criticism is the assumption that a conflict or war is over once a settlement is reached. It lacks the component of the cost *after* the conflict or war. His example is the Iraq war, where there was a large cost of life and material long after "mission accomplished" had been proclaimed. The final criticism is that bargaining theory assumes that actors are rational. While he acknowledges that actors will develop strategies to attain their goals, these can only be viewed as minimally rational. This is because these strategies will be developed based on a lot of wrong and false information. The underlying issue revolves around inherent cognitive biases in the decision-making and information-gathering, which will warp the strategies so that they are no longer rational. It must be noted that his criticism is based on the use of bargaining theory in the case of the Iraq war, and he might have other criticisms regarding different cases. They do nonetheless provide some valuable insight into possible shortcomings of bargaining theory (Lake, 2010).

Jervis (1982) also discusses the irrationality of rational actors. His discussion focuses on how actors' perceptions diverge from what he calls "objective reality" as well as how actors perceive the world. He builds his arguments around historical examples, scientific experiments and logical arguments. This is to show how different actors act due to how they perceive the world, as well as due to their perception of how their opponents perceive the world. As a continuation of his definition of deterrence, he outlines his critique more elegantly:

> "One actor deters another by convincing him that the expected value of a certain action is outweighed by the expected punishment. The latter is composed of two elements: the perceived cost of the punishments that the actor can inflict and the perceived probabilities that he will inflict them. Deterrence can misfire if the two sides have different beliefs about either factor." (p. 4-5)

His first argument building upon this definition is the misperception of value. While he agrees that it is generally easier to perceive what will constitute harm rather than guessing if the threats will be carried out, he argues that the different sides can and will miscalculate the value that each side puts on things and actions. For example, when the United States uses the threat to destroy the Soviet leadership to deter the Soviet state, this is only an effective threat if the Soviet leadership puts its own value to the Soviet state as high as the United States believes it does. In other words, if the item threatened is not as valuable as the other one believes it to be, the threat will not work (Jervis, 1982).

Continuing the same argument, he says that deterrence can and will be misinterpreted with respect to how harsh the repercussions will be. Jervis (1982) argues, for example, that the Japanese did not think that the Americans would surrender after being attacked at Pearl Harbor. The Japanese leaders thought the stakes for the United States were not high enough to justify an all-out war – hence any retaliation would remain limited. The same argument is used with reference to Germany's invasion of Poland, where Hitler thought the allies would agree to end hostilities after the fall of Poland. In both of those examples, his argument is that the Americans and the Allies believed their enemies understood that they would respond with all-out war, because for them it was so obvious. In other words, the different sides did not understand the value the other side put on the deterrent and how the response would be (Jervis, 1982).

His second argument is the misperception of credibility. The problem with credibility, according to Jervis (1982), is that there is little understanding of what forms a credible threat. He acknowledges that the situation is a major part of what makes a threat possible. People would, for example, have a hard time believing that a minor insult would lead to all-out war, while they would be much more accepting if it was a major provocation. He also sees the ability to carry out the threat as a given for a threat to be credible. Being stronger than the other side lends credibility to the threat. His main problem with credibility comes with the states' reputation and its influence in the decision process by all sides. For example, some states are, according to Jervis (1982), seen as bold and reckless. What influence does this reputation have

on their credibility compared to other sources of credibility such as cause, objective, or strength? A party's reputation will often come from earlier actions. The question then becomes: to what degree will reputation influence the decisions of both the one with the reputation as well as the other side? The reputation can fade or deteriorate over time, either through changes in behaviour, non-action or a change of the political makeup of the decision makers. To sum it up, the element of reputation creates uncertainty with respect to the credibility of actions and threats (Jervis, 1982).

Both the question of value and of reputation still accepts some form of rational actors, who might just make less-than-optimal choices under incomplete information or understanding. Jervis (1982) think it is irrational to think the actors are rational at all. He points to cognitive processes which impedes the rationality of actors. The first process he sees as important is that people vastly overestimate their own cognitive abilities. He points to experiments that show that people are much more confident than what they ought to be, overestimating their own capabilities to understand and analyse information. When a person analyses what he thinks are subtle hints, the information that a person thinks he understands is often false or not there to begin with. The subtle hints that one over analyses become a way to justify one's predictions of other people's actions and behaviour. People will also unconsciously project their beliefs and expectations upon their interpretation of the situations. This projection can and will create a false certainty about how others will interpret it, as well as a false confidence that the information is understood rationally. This has the effect that decision makers overestimate their own ability to determine hostility and the value that the threats have (Jervis, 1982).

The second important cognitive process that affects deterrence is the ability to avoid seeing value trade-offs. People believe, according to Jervis (1982), that the policies they favour are vastly better than the alternatives on more than one logical dimension. One example he presents for this is that the people that favour a ban on nuclear testing will at the same time believe that nuclear testing is hazardous, have few military benefits and that a treaty would make further reduction and agreements on nuclear weapons possible. Opponents of the ban, for their part, believe the complete opposite on all counts. His argument is that believing in such logical consistency, that everything would be so neatly arranged and that there is one absolute answer, is irrational. There is little or no reason to expect such a world where everything would line up so neatly; one should instead weigh the possible positives with

alternatives on every dimension. While Jervis (1982) does not say that people do not consider alternatives and trade-offs, he claims people can and will underestimate the cost or the value of the alternatives (Jervis, 1982).

The third important cognitive process is the tendency of people to assimilate new information into their pre-existing beliefs. In other words, people see what they expect to be present. Information that is discrepant or ambiguous of the expected results is promptly ignored, misinterpreted, or interpreted in a way where it causes minimum damage to existing beliefs. Even so, Jervis sees it as natural that humans seek to make order out of all the different stimuli that can be both ambiguous and conflicting. It is this natural reaction which means that we will naturally impose our beliefs and concepts upon our conception of reality, to make it easier to process and arrange. All these cognitive processes will lead to actors that create deterrence strategies on false premises. They misinterpret information, do not understand the choices their opponents have, do not see what other options they have and generally follow their own beliefs even if they conflict with objective reality.

Levy (1997) also criticises the prospect of rationally behaving actors. His critique comes from the realm of prospect theory, which itself is an alternative to rational choice theory. His work is built upon a lot of earlier work, chief among them Kahneman and Tversky (1979), who built prospect theory based on patterns that they found from a variety of psychological experiments. Levy explains prospect theory as patterns in asymmetry of value – in other words how people value things.

One pattern prospect theorists have found is that the value of losses and gains were based upon a reference point. People tend to be more averse to losses, and they overvalue them compared to comparable gains. The implication of this is that people will value what they are giving up much higher than what they gain. As an example, people would avoid coin flip scenarios where head is loss of x value and tails is gain of x value, since they overvalue the loss. Another pattern seen is how people will accommodate to gains much faster than to losses. This means people will give higher value to no gain as they see it as a loss when they already have gained. In addition, people will tend to set the value of gain much higher when they have lost, as they want to regain what they have lost. Another pattern is how people will overvalue low probabilities and undervalue high probabilities. This means, in practical terms, that people attach much more value to the elimination of risk than they would if there was a linear relationship between risk and gains (Levy, 1997). According to Levy (1997) these observations

led Kahneman and Tversky (1979) to develop prospect theory, which centres on a choice process:

> "They distinguish two phases in the choice process. In the editing phase the actor identifies the reference point, the available options, the possible outcomes, and the value and probability of each of these outcomes. In the evaluation phase she combines the values of possible outcomes (as reflected in an S-shaped value function) with their weighted probabilities (as reflected in the probability weighting function) and then maximizes over the product (the "prospective utility." (Levy, 1997 p:92)

While Levy (1997) did not develop this theory himself, it is the one he follows. The observations are themselves a critique of rational actors as they imply that people are not rational. The theory is built upon observations of individuals and not states, the common actor seen in bargaining theory. When trying to apply prospect theory, which is based upon laboratory experiments, to international relations he acknowledges that there are a lot of methodological problems. For example, it is unclear how decision makers identify the reference points, define the available options and the corresponding outcomes with their individual values and probabilities (Levy, 1992). In a later article Levy (1997) argues that prospect theory can be quite easily applied to states with a strong unitary actor, such as Stalin's Soviet Union, Hitler's Germany, and Saddam's Iraq. He also argues that rational choice theory also has a lot of the same problems that prospect theory has when applied to the real world. Success of applying rational choice to the real world comes from it requiring a lot less parameters. He also argues that rational choice is based upon normative axioms (Levy, 1997).

Summed up, bargaining theory provides a powerful framework to understanding real-world conflicts. While much of the criticism directed towards it is certainly valid, especially on the point of rational actors, the potential value of bargaining theory outweighs these. That does not mean that one should ignore these criticisms, it rather means that one should instead acknowledge the possible limitations when applying bargaining theory. As I have pointed out, there is little rational about nuclear weapons, so to find the rational of the irrational we need to look at madman theory itself.

## Madman

A core problem with bargaining theory is that while the actors make actions, and do not just talk about it, the actors are described as behaving rationally. While a lot of the critique against bargaining theory is levelled towards the idea of the rational actor, the core idea remains that people will at least *try* to act rationally, even if the behaviour itself is objectively irrational. Keeping this in mind we need to take one step further into the world of mad men to understand how nuclear weapons can be used as a threat by understanding Madman theory and how it has been applied in the literature before.

While Madman is a popular expression seen widely used by both popular media as well as journalistic media, it is not an expression used that commonly in academic literature. However, it has been discussed. The way it is discussed is mainly through historical examples or through the concept of threats that leave something to chance. As far as the origin of the term, it seems to come from the memoirs by former US President Richard Nixon's chief of staff H.R Haldeman, where he recounts a conversation that he had with Nixon in 1968, at the height of the Vietnam War (Haldeman & DiMona, 1978). In this conversation Nixon describes what he calls Madman theory, where Nixon is going to let the North Vietnamese believe he has reached a point where anything is on the table to end the war in Vietnam. At the same time, he was going to let word slip that Nixon was getting so angry over the situation in Vietnam that his advisors did not know if they could restrain him anymore (Sagan & Suri, 2003).

The historical concept of Madman as described by Nixon is simple: threat by excessive force. Here the emphasis is on the *excessive* to the point of irrationality. The mad part of the term implies, therefore, that the actor does not behave rationally to spectators. By doing so you frighten your adversaries into accepting terms that are more beneficial for you as they do not want you to do something so irrational that would hurt them as well as yourself unnecessary (Kimball, 2006). While he can be credited to be the first, Nixon himself seems to have built his idea on his interpretation of how a previous US president, Dwight D. Eisenhower, ended the Korean war. He believed the war ended with Eisenhower using the threat of nuclear force to persuade the Soviet Union and North Koreans. In his view the "peace" in the Korean war happened because of nuclear weapons. It should be mentioned that Eisenhower himself indicated the same in his memoirs. In this thesis, however, it is not important if nuclear weapons

helped end the Korean War, only that Nixon believed it did. Nevertheless, how he explained it to his chief of staff, and how it played out historically, seem to be quite different (Sagan & Suri, 2003).

Sagan and Suri (2003) discuss the events through the lens of a political scientist and historian, respectively, with emphasis on recently declassified material to give context. They challenge what they call the four common assumptions of the role that nuclear weapons have played in international politics. These four common assumptions, according to them, are the historical context, unitary actors, risk management and the cost of signals (Sagan & Suri, 2003).

In October of 1969, the US military was suddenly instructed to increase their readiness to be ready to respond to a sudden and imminent confrontation with the Soviet Union. The Strategic Air Command (SAC) was instructed to stop all training and perform a show of force with thermonuclear armed B-52 bombers against the Soviet Union – and they did so. While one might think this was a response to military escalation by the Soviet side, or a response to an ongoing crisis, this was not the case. It was instead a part of Nixon's plan, which he described to Haldeman a year earlier. An interesting point is that this was done while keeping it hidden from the public. So, while a full escalation of the military where war was imminent would, among other things, involve placing strategic bombers at civilian airports and sending all the nuclear armed submarines out of port, it was not done to keep it hidden from the public (Sagan & Suri, 2003).

The plan was to coerce the Soviet Union to put pressure on the North Vietnamese to accept a peace agreement more favourable to the United States, while at the same time keeping it hidden from the public. The core of this plan was that Nixon was putting pressure on the Soviet and North Vietnamese governments with an obvious nuclear threat and spreading uncertainty concerning his own capacity to go through with it. He purposely acted as if he easily could have spun into a rage and acted irrationally. However, this relied on the perception that the cause of the rage was the lack of progress in Vietnam, so satisfying this lack of progress would lead to the rage subsiding and therefore the cause for irrational behaviour disappearing. According to Sagan and Suri (2003), the outcome of this strategy was a complete failure; most importantly, the Soviet Union did not understand that the threat was made because of the Vietnam war. This was because there was another huge international incident at the same time, centring on a possible war between the Soviet Union and China. The emphasis on secrecy meant that the signal of nuclear alert was intercepted by the Soviet Union while at the same

time the public was kept in the dark about the situation. However, it probably made it easier for the Soviet Union to call the bluff, and it ultimately meant the value of the signal was reduced.

Sagan and Suri (2003) claim that most scholars argue that at the time, after the Cuban missile crisis in 1962, there was a shared sense of the dangers of mutual destruction by nuclear weapons by all states possessing such arms. This sense of danger also infiltrated the way nuclear weapons were used as a bargaining chip, in the way that the nuclear-weapons states were cautious of using them, and at the same time they made actors cautious of tempting others into using them as a bargaining chip. Sagan and Suri (2003), however, go against this line of understanding the historical context, claiming instead that the historical evidence points to the contrary. Nuclear weapons at that time were in fact used not only as defensive posturing, but they were indeed also actively used in more aggressive diplomacy. As an example, they point to the United States nuclear alert in 1973 during the Arab–Israeli war. Sagan and Suri (2003) argue that this shows that the nuclear alert of October 1969, rather than an aberration, is an example of a pattern of aggressive behaviour with nuclear weapons as a bargaining chip. While Sagan and Suri (2003) say the evidence shows that Nixon never intended to use nuclear weapons over the situation in Vietnam – that it was a bluff. They argue that the intention does not match up with reality. The bluff became a situation that could have directly led to the use of nuclear weapons (Sagan & Suri, 2003).

The core of madman theory is simply to bluff, as there is no intent of using the weapons themselves – there is no irrationality in this behaviour. The most irrational behaviour in such a scenario is someone falling for it, as using nuclear weapons is irrational. As Sagan and Suri (2003) point out, the bluff created a situation where the likelihood of nuclear war increased; the bluff became something that could have caused something irrational. The bluff became a threat that leaves something to chance.

## The threat that leaves something to chance

The threat that leaves something to chance is described by Schelling in his book *Strategy of Conflict* (1960) as part of bargaining theory, with an entire chapter being dedicated to this concept. The premise of deterrence is that when a threat fails, the punitive actions that were promised as a response must be executed. If not, the threat cannot serve the intended purpose of being a deterrent. In other words, one will act if the threat fails. Meanwhile, the threat that leaves something to chance changes the word "will" to "may". One *may* act if the threat fails, which is a threat that leaves something to chance. This might seem like a way to invite trouble due to the possibility that the aggressor could misinterpret the lack of action as a bluff or an inability to carry out further threats. According to Schelling (1960), a threat that leaves something to chance can be very effective. The most important element here is that the uncertainty that the one threatening will follow through with the punitive action has to be outside their own control. How this uncertainty of action is determined can be anything like a chance, accident or even a third party. It simply has to be something that neither the one threatening nor the one being threatened can entirely control; that is to say, the possibility of it happening is something that neither can eliminate. A major problem with a threat that leaves something to chance, other than the credibility issue, is that it is prone to be misunderstood and not recognized by the one being threatened (Schelling, 1960).

One example of how this works is the threat of inadvertent war. An inadvertent war can arrive in many ways, some of them being:

> "… - through some kind of accident, false alarm , or mechanical failure; through somebody's panic, madness, or mischief; through a misapprehension of enemy intentions or a correct apprehension of the enemy's misapprehension of ours - …" (Schelling, 1960 p: 188)

The general rule is to reduce the chance of such a war starting. This is an especially salient issue during a crisis where heightened tension will put strategic weapons on a short leash to either quickly annihilate the enemy or fire back before he annihilates you as a response. This puts increased pressure on both the human and mechanical resources, which makes it more likely that something might go wrong. Hence, a crisis increases the probability of inadvertent war. However, if one thinks about it, this is a threat. So, one could say there is an inherent *value* in the possibility of mechanical and human error in such a situation. Any aggressive action

that leads to a crisis has the potential to start a war. The aggressor will have to determine if the action they are about to do will cause a crisis. And if it will be causing a crisis, they must then determine if they are willing to take the risk that this possibly could cause a war or not. If they want to avoid this chance entirely, they will have to avoid taking any such action. For simplicity's sake we say that the aggressive part here is the Soviet Union and the other being the United States. The most interesting point with this line of thought is that in this case it is not the United States that decides if there will be a war or not. There is no decision made to go to war. It is instead entirely dependent on the chance that something goes wrong or not (Schelling, 1960).

Schelling (1960) also differentiates between limited and general war. Limited war is more of a local conflict, or at least not a conflict that will lead to major use of thermonuclear weapons. He sees a scale of increasing conflict up to the peak of any possible conflict, which he calls general or all-out war, or, as I would call it, total war. This is a situation where nuclear annihilation is not a question of possibility, but it is instead imminent. Keeping this in mind, he sees limited war as a threat that leaves something to chance – as any limited war has the potential to increase gradually and step by step to become total war While these steps can, for example, be the decision to introduce newer, more powerful weapons or just more general forces into the war, there is nothing, in theory, stopping a limited war from going from rifle fire to all-out nuclear war. However, the likelihood of a total war increases for each step the conflict has moved up on the scale. The main point here is that there is a *chance*, not a pre-determined outcome, that it will become a total war. This creates an advantage in using a threat of limited war instead of general war. This is so as it is a threat, which is combined with the inherent threat that leaves something to chance because of the possibility of the limited war becoming total war, while at the same time it does not commit oneself to such a world-ending event (Schelling, 1960).

If one wants to compel someone to do something with a threat that leaves something to chance, one must put the decision to end it in the hands of the adversary. The threat must also be random in its possibility to cause damage. The damage can either be direct or, for example, be all-out war. To better understand this, Schelling (1960) provides an example. He describes a small nation with a modest nuclear force that wants the Soviet Union to withdraw from occupied Hungary. A direct threat to attack and nuke the Soviet Union is not likely to be taken seriously as the threat is seen as suicidal and therefore not rational. Instead they send one

missile a day over the Soviet Union with a random countdown. That means it will explode randomly if it is not shot down. Every day the country does it, and every day it is either shot down or explodes at a random place. The gain of doing so to the country in question, other than to damage and humiliate the Soviet Union, is incurring a risk that an all-out war can happen. The country is applying pressure and creating a credible threat that says if you do not get out of Hungary, a war may well happen (Schelling, 1960).

An interesting thing to note here is that Nixon's madman strategy was devised just a short time after the Cuban missile crisis, a crisis that almost led to nuclear war. If one follows Schelling's (1960) train of thought, this should have made the parties less likely to create a new crisis that could lead to war, as the parties involved would not try to pull the trigger of the international Russian roulette again. Sagan and Suri (2003) point out that this was not the case, as the nuclear alerts in 1969 and 1973 were a behavioural pattern of aggressive use of nuclear arms diplomacy by the United States. This was so despite Nixon's intent of making the nuclear alert of 1969 a safe and risk-free threat in the way of not behaving threateningly towards the Soviet Union, while at the same time reminding them of the nuclear preparedness of the United States. Intent and execution were not on the same page. For example, nuclear weapons safety regulations for peacetime were ignored by lower-level commanders. Later, the SAC found out that the bombers, armed with thermonuclear weapons, as well as their tankers, had flown dangerously close to each other and could suddenly have resulted in crashes. The combination of just these two elements could have caused unintentional triggering of nuclear weapons – if a crash had occurred – because this would at worst have been interpreted as a surprise nuclear attack, and at best a nuclear accident causing widespread damage (Sagan & Suri, 2003).

The conclusion of his arguments of the application of a threat that leaves something to chance is a definition of brinkmanship. His argument is that a brink is not a directly steep edge, where you either have your feet on safe ground or you jump down into oblivion. It is instead an irregular slope with varying slippery and steepness down to the edge of oblivion. Every step you take on this slope has an undetermined risk of one slipping and falling into oblivion. Hence, brinkmanship is to start walking down this slope. As Schelling perfectly sums up:

> "Brinkmanship is thus the deliberate creation of a recognizable risk of war, a risk that one does not completely control. It is the tactic of deliberately letting the situation get somewhat out of hand, just because its being out of hand may be intolerable to the other party and force his accommodation. It means harassing and intimidating an adversary by exposing him to a shared

> risk, or deterring him by showing that if he makes a contrary move he may disturb us so that we slip over the brink whether we want to or not, carrying him with us." (Schelling, 1960 p: 200)

## Summary

Nuclear weapons are weapons whose destructive power is beyond comprehension. In a blink of an eye they can obliterate large areas and cause unfathomable and everlasting damages. There is little rational about using such a weapon, yet they exist and therefore one will try to use them as leverage. The question arises, therefore, how one can use them as such with credibility. The answer is simply to threaten someone to do or not do something, and if they do not follow up that you will obliterate them – in other words, you deter them. The major underlying issue of the weapons is that they are so powerful that no one would believe you, as any major exchange would be analogous to suicide – and this applies even if only one side has the possibility or chance to use them.

A way to solve this proposition lies in the application of madman theory, a theory coined by Nixon, which tries to enhance one's bargaining position by eliminating the irrationality of a threat involving excessive force with the irrationality of the actor. In other words, by making it possible to use nuclear weapons as a bargaining chip. However, the sheer irrationality of using nuclear weapons makes the proposition of believing the irrational behaviour unbelievable. And, while Nixon never had any intention of using nuclear weapons, it was a bluff after all, he ironically at the same time created a situation where an exchange of nuclear weapons absolutely became a possibility.

The reason how this could happen becomes clear through the understanding of bargaining theory, which is an application of game theory. According to bargaining theory, communication is done in a large part tacitly. Therefore, it fits quite well with the language of international politics and the world of nuclear weaponry as it is more inclined toward actions, movement of weapons and behavior in general than it is toward explicit agreements. One application of this theory is the threat that leaves something to chance. Unlike a normal threat, where one will act if the threat fails, the threat that leaves something to chance changes the

word “will” to “may”. Hence, one *may* act if the threat fails. This uncertainty creates room for the irrationality of a threat of using nuclear weapons to exist – as one is not directly threatening global annihilation, just the *possibility* of it happening. This can only be done by random chance, and this chance, in turn, may be based upon being at limited war, military exercises, weapons malfunction or miscommunication.

My argument is therefore that it is in this realm of threat with a random element that the true nature of madman theory lies. By putting the military on nuclear alert, increasing the amount of simulated attacks on the Soviet Union, and therefore creating the possibility of war to occur, nuclear weapons can become a threat. It does not matter whether or not the intention is really to use nuclear weapons, the failure of communication, and the capabilities themselves, create the threat. This means that the actor is behaving rationally. In other words, while one might seem mad, the behaviour itself is rational. This means that it is the action of threatening with the nuclear devices that makes you a madman, not the element of trying to seem irrational. This means, in turn, that if the United States truly *is* a madman, they simply need to create a possibility for nuclear war to happen.

# Chapter 3: Method and Data

In this chapter I will show the method I will use to analyse the data as well as explaining the choices behind why and how I collected the empirical data. I will also present a descriptive timeline that shows some of the important happenings and development of the 2017-2018 North Korea crisis.

## Game Theory

Game theory is defined by Nye and Welch (2014) as: "The analysis of how rational actors will behave in contexts of strategic interaction" (p:2). This definition touches upon the importance of the rational actor, a cornerstone in game theory. This definition is, however, quite limited in understanding of how a game actually works. Hovi and Rasch (1993), and Hovi (1998), define a game to contain five distinct elements:

a) Number of players

b) For each player, several strategies

c) Several possible outcomes

d) For each player, a set of preferences (or a value of utility) for each of the possible outcomes

e) Game rules

A *player* here simply means an actor who has the possibilities to make decisions. While what or who a player is can vary wildly between games, usually players are individual people, countries, municipalities, or organizations. Sometimes even nature itself is included as a player if the outcome is based upon a random element. One example of players would be in a game representing the cold war, where the players, in a two-player game, would be the Soviet Union and USA (Hovi and Rasch, 1993).

A *strategy* is a plan that provides a prescription for all the situations that may occur in the game. How one views the strategies is dependent on whether the game is static or dynamic. A static game is a game where the actions of both players are taken at the same time, and the

strategies are the possible actions each player has. This does not mean they are executed at the same time; it rather means that the choices a player takes are not affected by the choices made by other players. On the other hand, in a dynamic game, also called sequential games, the choices made by one player affect the possible alternatives the other player has. After a player has done their actions, the next player's alternatives will be based upon and be limited by the choices already made by the other players. A strategy for such a game with two plyers will then be that if one player does something, the second person's strategy will be dependent upon the choice of the first person. The main clue here is the dependency that the strategies have upon the other player. As an example, picture a game with two players, each with two choices of action. Let us say the goal is for actor 1 to get both himself and the second player to choose the same action, while it is opposite for actor 2. In this game, if actor 1 does action x, then the second actor 2 will do action y. However, if actor 1 does action y, then actor 2 will instead do action x. While it might seem as actor 2 is just doing an action instead of having a strategy, it is in fact a strategy as there is a choice for actor 2 to choose another strategy – in other words give the victory to actor 1. Hovi and Rasch distinguish between actions and strategy by there being a choice for at least one of the players reacting to the other players' decisions (Hovi and Rasch, 1993). The best possible strategy for the players to execute is called a Nash equilibrium. A Nash equilibrium happens when both players choose strategies that is the best response to each other. In other words, the players will have no reason to regret their strategic choices after they learn what the choice of their opponents have been (Morrow, 1994). In a sequential game however, you instead use something called subgame perfect Nash equilibrium, where the equilibrium is when the players choose the best strategies based on all possible subgames (Hovi and Rasch, 1993).

An *outcome* is the end state of a combination of the strategies that each player has. The number of possible outcomes in a game is equal to the number of strategies that each player has multiplied together. If a game has two players with two strategies each, the total number of outcomes is 4 (2 x 2 = 4). If it is a game with four players, with respectively two, five, seven and ten strategies, the total number of outcomes is 700 (2 x 5 x 7 x 10 = 700). It is important to note that if nature is included in the game, that must also be multiplied with the number of possible outcomes (Hovi and Rasch, 1993).

*Preferences* of outcomes means that each actor has a characterization, or ranking, of the outcomes. In other words, have some way to indicate a preference for one outcome over another (Hovi, 1998).

*Game rules* are a summary of the framework for one specific game, a specification of how the game is defined. This can entail the players, whether it is a static or dynamic game, in which order the players are following, the amount of information the players have and what strategies they can use (Hovi and Rasch, 1993).

While not part of the distinct elements, another important element is the level of access to information. Hovi and Rasch (1993) make a distinction between two central terms to determine what access to information that a game's players have. The first term is whether a game has full or incomplete information. Full information is when all strategies and preferences of the players are known to both sides, and both sides know the other knows their preferences and strategies. Incomplete information is when there is a lack of such clarity, meaning that they either do not know the preferences and strategies of the other players or that they are unaware of the other player's insight to one's own strategies and preferences.

The second term is whether a game has perfect or imperfect information. Perfect information is when the players has full knowledge of all choices that has been made earlier in the game, by both sides, when they must make their own choice. The lack of such knowledge is imperfect information. Important here is to note that any game with incomplete information is, for practical purposes, a game with imperfect information. This is so as the first choice by the first player cannot be completely understood by the second player, as they do not know what strategy underlies the decision – which means that the first player's action should be treated as a lottery by the second player. While Hovi and Rasch (1993) see these two terms as the most important ones, there also exist other terms that are commonly used in the literature. The two most well-known of these are symmetry of knowledge as well as secure and insecure information. Symmetry of knowledge concerns the equality or inequality of access to information that the players have. If one player has at any time during the game access to any information the other player does not, the game has asymmetrical knowledge; otherwise there is symmetry of knowledge. Secure information is when all actions by nature is known before the players make their moves. In other words, the outcome of random elements is known before the game starts (Hovi and Rasch, 1993).

Another important term is if the game is a repeated game or a one-off. A one-off game is any game played that cannot be split into smaller subgames that are repeated over and over. A repeating game is exactly that, a game that is a small game repeatedly played over and over. This difference can cause quite different outcomes of similar games. As an example, picture a

thrift shop, where the seller claims that what he wants to sell you is worth more than what he is asking. If this store is in a faraway city you are only going to visit once, it is effectively a one-off game. If it is instead a store that you visit often in the city in which you live, it is instead a repeating game. In the latter case it generally would be against the seller's interest to lie to you about the value of the item, as you would treat all further interactions with the seller with the knowledge that he lies. In other words, this would affect later repetitions of the game. In the former other case you will most likely never see the seller again, and therefore, from the seller's point of view, there is a much smaller risk and a higher incentive to oversell the item (Hovi & Rasch, 1993).

A key part of game theory is the idea of *rational actors*. In game theory this means that the players will maximize their own interest and try to achieve their best possible outcome for themselves. While I have shown in the previous section about bargaining theory that there is a lot of critique against the idea of rational actors, the games themselves are made with this rationally behaving actor in mind (Schelling, 1960).

To get a better understanding of all of this I have created an example in the form of a small game. This will be a variation of what is called a non-credible threat game, which shows why a threat is not credible. While there are some variants of this game, the general setting is similar. This is a two-player game, with full and perfect information, where player 1 is being threatened and player 2 is the one threatening. Player 2 wants player 1 to give him money. The way player 2 threatens player 1 is with a bomb, which he will blow up, killing both, if player 1 does not give him money. The question player 1 must ask himself is if this threat is credible. Player 1 has only one choice, with two alternatives attached, namely to give in to the threat and lose his money, or not give in. If he does the latter, it is then up to player 2 to either fulfil the threat or give up on it. As this makes for two possible strategies for each player, there is four (2 x 2 = 4) possible outcomes. As implied in my explanation of the game, the game is dynamic, with player 1 doing the first move. The information in this scenario is both full and complete. I have set the preferences of the players to be the following.

Player 1:

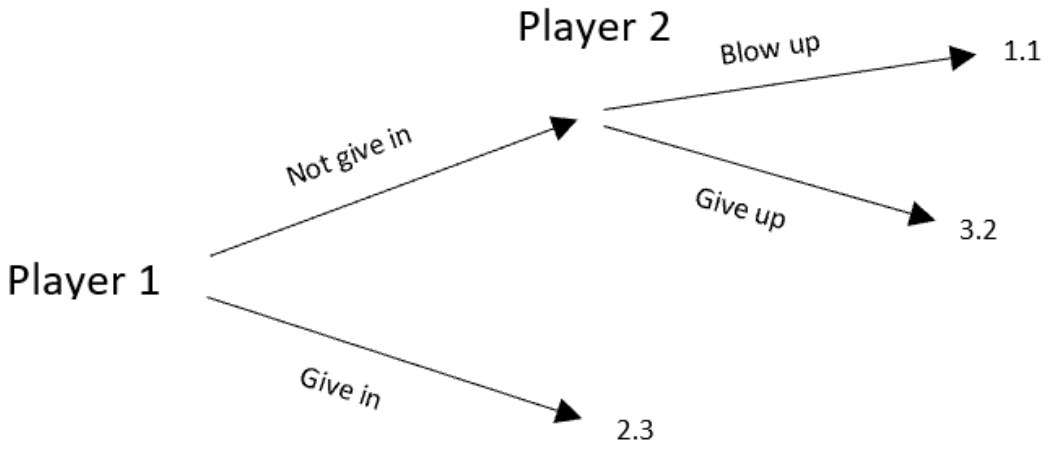
(1) Worst Dead, bomb blows up
(2) Middle Alive, gives away money
(3) Best Alive, keeps money

Player 2:

| | | |
|---|---|---|
| (1) | Worst | Dead. bomb blows up |
| (2) | Middle | Alive, does not gain money |
| (3) | Best | Alive, gains money |

Preferences are often up for discussion in different games, but in this one the preferences are determined by logical thinking. Being alive is preferred over getting killed, and having money is better than not having money. There are two main ways to visually represent this game: normal form and extensive form. Generally, sequential games are best represented in extensive form, while static games are in normal form. Since this game is sequential, the game set up in extensive form, which will look like this:

**Figure 1: Non-credible threat**




From this figure it is easy to misunderstand and think there are fewer than four possible outcomes in this particular game. This is a misconception, as one of the outcomes is dependent on another. The best way to analyse this game is using backwards induction. With backwards induction one starts at the last possible move in the game and works backwards. Since the last move is player 2, he therefore has the choice of blowing them both up and dying, or giving up on trying to get the money. As the player sets a higher value to his own life than he does to death, and as the actors are presumed to be rational, he will therefore choose to give up. If we

move back one additional move, we see the choice of player 1 to either give the money to player 1 or refuse to do so. We have already established the outcome of the second move, that he will keep the money. This has higher value than giving up the money for player 1, and he will therefore choose to not give in to the threat. So, for player 1 to not give in and for player 2 to give up is therefore the subgame perfect Nash equilibrium. However, this is dependent on there being full and perfect information, as player 1 knows the preferences of player 2.

## The data

When attempting to shed some light on whether or not the United States behaved as a madman when it dealt with the 2017-2018 North Korea crisis, we must look at and understand the situation the two states faced, and their relationship toward each other. While the states' respective strategies are not by any means limited by their individual leaders, the latter are still a major influence and an important source shaping the other party's perceptions. The perfect source of information to understand preferences, strategies and perceptions is memos, orders, plans and conversations from day to day during the period I am analysing. While one might think it would be enough to look solely at the United States, this is simply wrong. It is only in relation to at least one other state – here, North Korea – that the application of madman theory can be seen.

While the best way to understand this is undoubtedly to have unfettered access to the inner workings of the United States, North Korea and their respective allies, that is simply not possible. As to why that is not possible, consider, for example, that the 1969 nuclear alert, which Sagan and Suri (2003) analysed, occurred 51 years ago. Public records are finally open enough to get a somewhat clear understanding of the day-to-day events, albeit of only one perspective, the United States'. There are still a lot of unanswered questions in that case, especially from the Russian and Vietnamese side. Therefore, I do not think waiting for the perfect information to reveal itself, while it probably exists, is a fruitful effort. There is too much to gain from understanding the application and effectiveness of the situation, the effectiveness and problems with the threats themselves, for one to wait for any fabled perfect understanding. On the other hand, it is surely important to acknowledge the limitation of the analysis and understand that analysing the events of the 2017-2018 North Korea crisis at a later

point, with access to more information, will probably yield a much deeper and better understanding of the events.

Since the matter under analysis is somewhat recent, the best source of getting information that approximates day-to-day happenings and actors' actions and reactions would be to use news articles. Relying on immediate news coverage, as opposed to already pre-analysed events, gives us a purer idea of the events; hence, we lower the risk of collecting already-altered data. The main reason for this is to give a good indication of the chain of events so that it can be implemented into a sequential game.

As for gathering my news sources, I have relied upon using the google search engine, which offers the possibility to search with keywords on specific dates and sites. I have searched every single day between the 8th of April 2017 to 13th of June 2018, looking for news stories related to the missile crisis. The main keyword I have been using was "North Korea". Originally, I combined this with keywords such as "Trump", "crisis" and "United States". However, the findings using those were of low quality, as they yielded fewer results and for some reason or another omitted immediate news coverage, which is the cornerstone of my data. I therefore limited my search to only using the keyword "North Korea". In order to combat the issue of getting too many results the limiter of 'site:reuters.com' was applied. Most news sites with immediate news coverage of news relating to the 2017-2018 North Korea crisis had Reuters as their source. I also searched without this limiter to increase the chance of catching all relevant news coverage.

If possible, the entire dataset would have had news from one source, as that would limit the data weakness to one possible vector. However, this was simply not possible. No matter the search parameters, there was a lot of immediate news coverage of events that put Reuters as source but where the original article on Reuters could not be found. If this is because the original article on Reuters had been deleted, or if it was some sort of article template that was only given to news sites, I do not know.

I chose immediate news coverage and not news analysis of events pertaining to the 2017-2018 North Korea crisis as the cornerstone of my data because this gives the best indication of when things happened. The immediate news coverage reports are often minutes to an hour after an event occurred, though sometimes later. It is also the events, and not the coverage of them, which is the most interesting for this study. Therefore, short stories right after something happened, in other words immediate news coverage, is the best choice. As to

the way the data are categorized, I only noted the day the article was published, not the hour or minute. This is because the chains of events usually happen over days and not hours. There was a lot of variation to the density of news articles. Some days in the dataset have more than one news article assigned to them, due to them being independently interesting for the dataset. Meanwhile, some days have none. In total I found over 400 news articles of interest, and these make up the dataset used in this study.

As I am trying to answer the question if the United States behaved as a madman, and considering that the leader of this nation, at the time of the crisis analyzed here, was Donald Trump, I believe it is important to capture how one of the key players was perceiving the world and, more importantly, how he wanted others to perceive how he perceived the world. News reports, speeches and official statements are important, and a lot of them are noted in the data through news reports. It was, however, clear from the beginning of the data gathering that the tweets issued by President Trump were quoted as much, if not more, than official statements. This does not mean that the tweets are not official statements. The tweets published by the twitter handle @realdonaldtrump are, according to a series of court rulings, an area where President Trump conducts official government business (Savage, 2019). Therefore, I chose to gather the tweets and retweets done by President Trump during the period of the 2017-2018 North Korea crisis. I collected the tweets using the website http://www.trumptwitterarchive.com/archive, using two parameters: the first being the duration of the 2017-2018 North Korea crisis; the second being the keyword "Korea". I limited it to this one keyword out of convenience as well as to limit the number of tweets to a readable and understandable amount so as to better find the ones important for the analysis. I chose to include retweets in my gathering, as a main element of these tweets in the dataset is what he wants others to perceive through this channel of communication – and retweets are part of that. The total number of tweets and retweets gathered with my parameters are 128. It should be noted that some days saw more than one tweet, but all were saved in the dataset. These dates with two or more tweets gave a good initial overview of days with a lot of crisis-related activity. As for the choice of the website where I gathered the data, this was done partly out of convenience, as it is easily searchable with specific criteria. But more importantly, news channels with a good reputation, like BBC and The Washington Post, were also using this archive as sources for their articles (Hughes, 2018; Bump, 2017). I did consider collecting the data manually through twitter. However, this would involve the problem of excluding deleted tweets. The website I used contains all deleted tweets by the president for that period, but I do

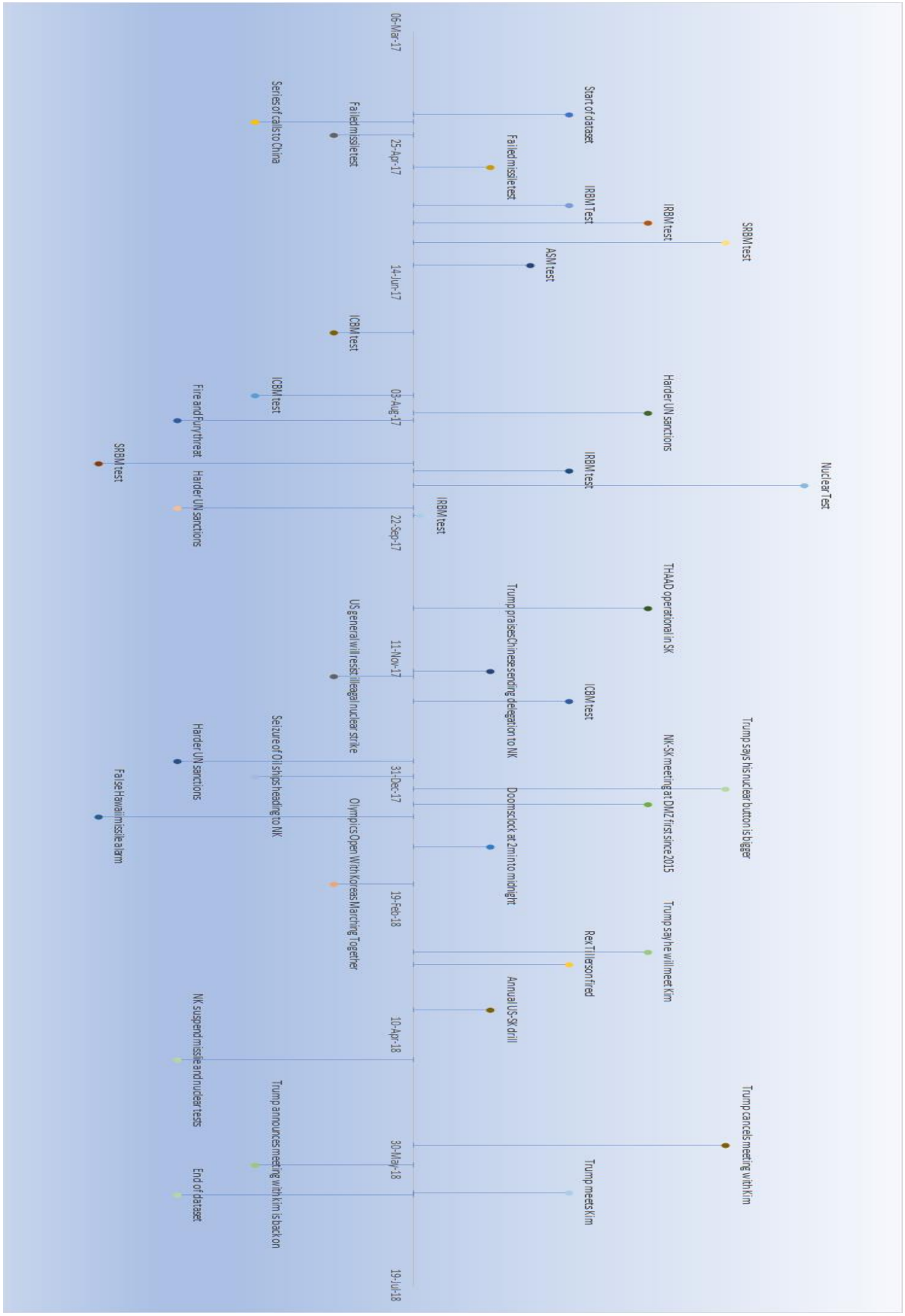
not know if any tweets I have in my dataset were deleted at any point. This, however, does not have any effect on my analysis if they were deleted at a later point as long as I know that they were posted at all.

A possible weakness in the dataset is the problem with dates. I have tried, where possible, to gather all dates as seen in Coordinated Universal Time (UTC). This is the same time as Greenwich Mean Time (GMT), but has become the standard that all civil time is based upon. This was to try to keep things as consistent as possible. However, either due to some problems with when things are reported, archives or just generally how webpages are coded, there are some irregularities. The webpage irregularity is probably due to variation to the websites either basing the original date it was posted upon the time zone of my computer, where the server is located or where the news station is located. It is also important to remember the time zone difference between the United States and North Korea. Where the United States has a multitude of time zones, with the two most important time zones being eastern time zone at UTC -05:00 and pacific time zone at UTC -08:00, North Korea was operating at the time with UTC +8:30 at the time. This means that there is a huge time difference between the countries, and this could possibly cause some irregularities in dates. The reporting or archive irregularities are most prevalent when considering that Trump tweets about something one day before I have news articles talking about it. One example of this is the tweet posted by Trump on the 28th of April 2017: “North Korea disrespected the wishes of China & its highly respected President when it launched though unsuccessfully a missile today. Bad!” (Trump, 2017a). However, the news reports I found on the subject were from the 29th of April even though they talked about the 28th of April as the same day. I do not doubt the access to information that the president of the United States have is excellent. It still falls within reason to expect news stations to report on the content of the president’s tweet within minutes and fill in with more information as it becomes available. It is, however, important to note that at most, this will affect the data by only one day, which I see as an acceptable margin of error, and one that should not have a detrimental effect on my dataset.

## Descriptive Timeline

There is value in getting an overview of the highlights of the 2017-2018 North Korea crisis as to better understand the time perspective of the events. Therefore, I have created a timeline, as a brief overview of what I see as the most interesting events of the 2017-2018 North Korea crisis. A lot of the events represent more than one single event. For example, the series of calls to China were a series of tweets by Trump over several days. The most eye-catching thing here is for how long a period the crisis lasted – as well as the rapid succession of the missile tests. And while there were three instances of increased UN Security Council sanctions, this follows the pattern of increased such sanctions whenever North Korea has conducted a nuclear test or a major missile test.

**Timeline:**


06-Mar-17
Start of dataset
Series of calls to China
25-Apr-17
Failed missile test
Failed missile test
IRBM Test
IRBM test
SRBM test
ASM test
14-Jun-17
ICBM test
03-Aug-17
ICBM test
Fire and Fury threat
Harder UN sanctions
Harder UN sanctions
IRBM test
Nuclear Test
SRBM test
IRBM test
22-Sep-17
THAAD operational in SK
Trump praises Chinese sending delegation to NK
US general will resist illegal nuclear strike
11-Nov-17
ICBM test
Trump says his nuclear button is bigger
NK-SK meeting at DMZ first since 2015
Doomsclock at 2min to midnight
31-Dec-17
Seizure of Oil ships heading to NK
Olympics Open With Koreas Marching Together
False Hawaii missile alarm
19-Feb-18
Trump say he will meet Kim
Rex Tillerson fired
Annual US-SK drill
10-Apr-18
NK suspend missile and nuclear tests
Trump announces meeting with kim is back on
30-May-18
Trump cancels meeting with Kim
Trump meets Kim
End of dataset
19-Jul-18

# Chapter 4: The Korean conflict

In this chapter I will go through some of the history of the Korean Peninsula from the Second World War to today. The emphasis will be put on the origin of the Korean conflict, major events after the Korean War and the development of Nuclear weapons in North Korea.

## The Korean war

The Twentieth century started off on the wrong foot for the Korean population. As a result of the Russo-Japanese war of 1904-1905, Korea was made a protectorate of Japan. Just five years later, in 1910, it was annexed into the Japanese empire (Cumings, 1981). This means that during the Second World War, Korea was part of Japan. During the Second World War an agreement was made at the Yalta Conference between the Allies that were at war with Japan (The US and United Kingdom) and the Soviet Union that was not. The agreement stated that the Soviet Union would join the war against Japan within three months after victory in the European theatre (Dear & Foot, 2001). In accordance with this agreement the Soviet Union promptly declared war upon Japan on the 9th of August 1945, almost exactly three months after the German surrender on the 7th of May 1945. After the declaration, Soviet forces immediately attacked Japanese forces in Korea and Manchuria (Coox, 1985). The Americans, according to Matray (2006), gambled that the Japanese would immediately accept surrender after the nuclear bombs dropped, respectively on the 6th and 9th of August. This would have led to a full American occupation of Korea. As that did not happen, it allowed the Soviet Union to declare war, forcing President Truman to propose a division of occupation of the peninsula (Matray, 2006). But the Americans knew that they were some time away from getting troops to the Korean peninsula, so that a proposal to divide Korea was all they could do. Stalin agreed to Truman's proposal and, as agreed, the Soviet forces occupied Korea north of the 38th parallel while their American counterpart would occupy territory to the south of it. The American occupation of Korea south of the 38th parallel would not start before American troops landed in Korea 8th September. This was almost a month after the unconditional surrender of the Japanese the 14th of August 1945 (Cumings, 1981).

While there were attempts of reunification between the two different occupation zones – including a joint Soviet-American commission tasked to do so, as well as a United Nations (UN) resolution in 1947 that called for the reunification after supervised national elections – all this failed to lead to reunification on the Korean peninsula. The Americans, facing the reality of the situation, namely that unification would be impossible for now, instead pressured the UN to oversee elections in the American occupation zone. This election resulted in the Republic of Korea (South Korea) to be established in May of 1948. The response by the Soviet Union was the establishment of the Democratic People's Republic of Korea (North Korea) in September. The withdrawal of American forces from the peninsula started in 1949, despite there being border clashes between North and South Korean forces at the time. In 1949, the leader of North Korea, Kim Il Sung, started to lobby for approval from Stalin to invade its southern neighbour. While reluctant, Stalin eventually approved the invasion plan, in April of 1950. The approval came in large part due to the victory of the communists in China in 1949. This made it possible for Kim Il Sung to play the Chinese and Soviets against each other, securing the approval from both (Matray, 2006).

The North Koreans invaded south of the 38th parallel on the 25th of June 1950. The same day the United States tried to solve the matter diplomatically through the United Nations Security Council (UNSC). They did so with a resolution calling for an immediate ceasefire and withdrawal of North Korean troops from the south. At the time the Soviet Union was boycotting the UNSC. As a result, the resolution was promptly ignored by the North Koreans. This was followed up with a resolution the next day calling for all member states to support South Korea. The United States was appointed by the UNSC as the agent to execute this resolution. President Truman then appointed General Douglas MacArthur as the leader of the United States-led UN force. The North Koreans made a rapid advance after the invasion started. This forced the South Korean forces, and their allies that either arrived quickly or was already stationed there, down to a small pocket in the southeast of the Korean Peninsula called the Pusan Perimeter (Chambers, 1999).

The Pusan Perimeter held despite several North Korean attempts to push through. The counterattack by the American-led forces came on the 15th of September with an amphibious landing behind enemy lines at Inchon. This city is just outside Seoul and quite close to the border with North Korea at 38th parallel (Cannon & Crowcroft, 2001). This, combined with a push out from the Pusan Perimeter, quickly led to the south being secured. With the south

secured, the question now became what to do next. While the initial plan and the UN mandate was to defend South Korea, the success of the amphibious landing forced the now exhausted North Korean forces to retreat. A decision was made, now was the opportunity to reunify Korea, and the UN forces received a mandate for the reunification of Korea on the 7th of October (Matray, 2006). While the invasion was very successful in the beginning, the Chinese decided to intervene on the side of the North Koreans. This meant that in November, the UN forces in northern North Korea were suddenly attacked by large and fresh Chinese forces. The surprise attack forced the United Nations forces into retreat, and they were pushed back south of the 38th parallel. However, The UN forces were able to push the combined North Korean and Chinese forces back, and in the summer of 1951 the frontline again ran along the 38th parallel. The United States and the United Kingdom had reached an agreement in March of 1951 that they would only secure the independence of South Korea. While the armistice negotiations started in July of 1951, the fighting would continue for two more years while negotiations were ongoing. Little land would be lost or captured during this time (Park, 1983).

The conclusion of what we call the Korean War was the armistice signed on the 27th of July 1953, which used the status quo as a basis for settling on the new borders. This border, while not exactly at the 38th parallel, had both sides give and take some land while keeping the size of their respective territories similar to when the war started. As a de-escalation measure, a four-kilometre wide zone was designated at the border where there is not supposed to be any military – this zone is called the Demilitarized Zone (DMZ). It is important to remember that this was not a peace treaty, and the countries have never signed a peace treaty to this day (June 2020), so technically the two countries are still at war (Matray, 2012).

## From the Korean war to 2016

The Korean Peninsula did not become a place of tranquility after the armistice, and while there has not been outright war, there have been incursions, bombings and hostile acts. The two nations have blamed each other for a lot of breaches of the DMZ (Park, 2009). An example of such a breach was a North Korean assassination attempt on the president of South Korea through a commando raid. Another example was North Korea's seizure of an American electronic intelligence-gathering ship in international waters. What is more impressive is that

these two incidents happened just a few days apart in 1968. It should also be noted that the North Koreans insist that the American electronic intelligence-gathering ship was well within their territorial waters at the time of seizure. While the logbook shows that the ship was inside the territorial waters of North Korea on the same trip, the Americans insist it was in international waters at the time of seizure (Koh, 1969).

Other large incidents include, but are not limited to, an assassination attempt on the South Korean president by bomb in 1983, where the delayed arrival of the president meant he survived, as well as a presumed bombing in 1987 of a South Korean airplane, which went down over the Thai-Burmese border. While North Korea denies any involvement in any of these acts, the United States placed sanctions on North Korea in 1988 as a response to what they see as involvement in terrorist activities. In 1996 the South Koreans captured a North Korean submarine that had been abandoned due to being beached in their territorial waters. Earlier that same year, North Korean stated that they would no longer respect the DMZ, and that they would conduct military exercises within the DMZ. This provoked the United States and some of their allies so much that they stopped sending food aid to North Korea as a response (Bowman, 2000).

In the 1950s and, in particular the 1960s, North Korea was placed in a peculiar diplomatic position between the Soviet Union and China, both of which had given support to Pyongyang during the war. During this period of heated Sino-Soviet conflict, North Korea chose to remain neutral (Bowman, 2000). In 1961 it signed separate defence agreements with both the Soviet Union and China. These were called, respectively, the Soviet-North Korean Mutual Aid and Cooperation Friendship Treaty and the Sino-North Korean Mutual Aid and Cooperation Friendship Treaty. These treaties call for each of the parties to support the other if it is ever attacked. The treaty between the Soviet Union and North Korea was suspended after the fall of the Soviet Union, but the one with China is still in effect. These treaties were signed as a deterrent to avoid invasion by South Korea and the United States (Solingen, 2007).

South Korea saw continued assistance and presence by the United States and its military through the entire period. South Korea has also experienced a chequered history of leaders. The government became infamous for its autocratic leaders, military coups and crackdown on democratic demonstrations. This included, but was not limited to the 1960 April Revolution, a student demonstration ending in a blood bath and martial law, as well as President Park's suspension of the constitution and proclamation of martial law in 1972. The assassination of

Park in 1979 by South Korea's own intelligence agency and subsequent uprising in the aftermath of the assassination, in 1980, leading to a minimum of over hundred dead civilians. (However, the suspected number is many times larger). From the 1980s the country has remained a democracy (Solingen, 2007).

The nuclear weapon development in North Korea has been one of the major developments in the post-war era in the area. In 1985, after many years of pressure from the Soviet Union, North Korea signed the Non-Proliferation Treaty (NPT), an agreement to stop the spread of nuclear weapons. Despite this, it is suspected that just a few years later they were able to create weapons grade plutonium to potentially create nuclear weapons. It is also suspected that in the aftermath of the fall of the Soviet Union, they managed to get their hands on, or imported, uranium enhancement technology from Pakistan. In 1990, after the United states removed their nuclear weapons from the peninsula, North Korea agreed to inspections by the International Atomic Energy Agency (IAEA). A year later both North and South Korea signed the "Joint Declaration for the Denuclearization of the Korean Peninsula". In 1993 they threatened to withdraw from the NPT, after inspections by the IAEA found irregularities in their plutonium reprocessing, which was a breach of commitments they had agreed to. This was followed by an international crisis which was resolved by North Korea suspending their secret uranium enrichment operation in exchange for aid. The suspended operation was allegedly restarted in secrecy around 1998. A few years later, in 2002, a North Korean diplomat spilled the beans and the United States rejected the framework of earlier deals. North Korea responded by removing IAEA surveillance equipment and expelling the inspectors. This led to IAEA condemnations in 2003, where the North Korean response was to immediately withdraw from the NPT. To try to get North Korea to commit to denuclearization, the United States, China, Russia, North Korea, South Korea and Japan started the process that is known as the Six-Party Talks. All efforts were fruitless, however, and by 2005, North Korea admitted to possessing nuclear weapons, calling them a "nuclear deterrent". However, the first registered nuclear test performed in North Korea did not occur until 2006 (Solingen, 2007). This test was followed by nuclear tests in 2009, 2013 and two times in 2016 (IAEA, 2020). The 2006 nuclear test lead to a unanimous UNSC resolution to stop the development of nuclear, missile and other weapons of mass destruction by North Korea, by banning all exports of anything that could help them develop their weapon program All the subsequent nuclear tests, as well as developments in Pyongyang's missile program, have led to unanimous UNSC resolutions to further strengthen the embargo as well as to target key individuals (UN, 2020). It is estimated

today that North Korea possesses between 20-30 nuclear weapons (Arms Control Association, 2020).

The Kim family has reigned supreme in North Korea this entire time, Kim Il-sung remained the leader of North Korea until his death on the 8th of July 1994, after which his Son Kim Jong-il took over as the supreme leader of the state (Bowman, 2000). On the 17th of December 2011, Kim Jong-il died and his son Kim Jong-un became the third supreme leader of North Korea. His immediate focus has been on the twin goals of promoting economic development and building up the nuclear deterrent. On the one hand, Kim Jong-un has proven to be the most market friendly of the supreme leaders of North Korea, even going as far as promoting and formalising parts of the informal free market. With this North Korea even managed to increase the economy by 4% in 2016. This increase came despite the very strict sanctions that the country is suffering. At the same time Kim showed his commitment to developing nuclear weapons by refusing to back down on their development as well as conducting three nuclear tests in his first five years as supreme leader (Ford, 2018).

# Chapter 5: Analysis

In this chapter I will attempt to answer if the United States used a version of the madman strategy during the 2017-2018 North Korea crisis. To reach an answer one must understand what North Korea and the United States wanted to achieve and how they could achieve this. I will therefore in this chapter create a game to better understand the strategies and possible outcomes of the crisis. I will first outline the limitations of the game, beginning with the number of players, the access to information and the players' preferences.

The game I will create will consist of three parts; each one can and will be analysed as an individual game. This game I will create is based on the accumulation of threats and actions between the United States and North Korea from the starting point of the crisis, a missile test done by North Korea on the April 4 2017, to right before the nuclear test in September 2017. After going through the history up to that point, highlighting the most important events. I will then illustrate what I identify as the possible strategies and outcomes based upon that starting point as well as the game rules for both countries. Afterwards I will go through what happened historically, highlighting what I see as the most important events, and comparing the game with reality, analysing the choices and outcomes of the states involved.

## Game rules

The game rules, according to Hovi and Rasch (1993), are part of the five distinct elements defining a game. The game rules themselves are simply a summary of the framework for a specific game. This includes, but is not limited to, the number of players; whether the game is static or sequential; and, if it is sequential, in what order they are playing and their access to information. It is also important to understand the outcomes and the players' preferences for the different outcomes to be able to create a game (Hovi and Rasch, 1993).

The game in this analysis, as well as the subgames, are sequential games, as this makes the most sense. As the data consist of news articles over time, this has the advantage to gauge the players' actions and reactions. This will therefore be a pattern of back and forth which is best analysed as a sequential game.

## Players

This analysis is trying to answer a question about a country, which makes it natural to keep the game at a country or state level. One might be inclined to think that such a game would be between people or individuals. This is because, as is evident when reading through the news sources at the time, the countries' actions were talked about in conjunction with the opinions of and actions by the leaders of the involved countries. Thinking that the crisis itself and the actions made by the countries involved should be a match or game between leaders cannot be further from the truth. In fact, this has very little to do with the leaders themselves. It is instead a question about strategy endeavoured by a country. One cannot simply believe that one man alone decides an entire country's strategy. Consider the plan that Nixon and his advisors devised based upon Nixon's Madman theory. It was not a one-man effort, and his plan was influenced far outside the planning room – there were also a lot of unplanned consequences and actions. And all this despite the entire plan being a pure bluff. Sagan and Suri (2003) neatly point out that the plan, due to these unplanned consequences and actions, instead became a threat that leaves something to chance due to the dangers it created. Keeping the players at the country level is the best way to analyse the games, hence the United States is the player, not Trump. This does not mean that Trump is insignificant, but instead it indicates that his preferences and actions are a part of the larger picture and should be treated as such.

The games illustrated in this study are two-player games. China, South Korea, Japan and several other countries were part of the crisis, as is evident when looking through the dataset. Though it is possible to have more than two players in a game, keeping only two simplifies the games, which is a better representation of reality. While many countries were part of it to a varying degree, there were only two who were the real "movers and shakers". The 2017-2018 North Korea crisis is a story of their actions and reactions to each other. I have therefore chosen the players: The United States as one side and North Korea as the other.

## Information

To find the balance between a useful representation of reality, while at the same time creating a game that provides valuable insight to understanding the situation, is not easy. One must often

guess what the opponent's thoughts and actions are; this is hard to implement into games as to not make them overly complicated and useless. In the game created, I have chosen the access to a level of information that is full and perfect, meaning that both players know each other's preferences and strategies, as well as each other's choices and actions earlier in the game.

A core element in this game, and in its subgames, is the element of randomness. By its very nature, the randomness of accidentally starting a war through weapons malfunction, miscommunication or some other elements are extremely hard, if not impossible, to establish or to calculate. The more people, weapons tests, military exercises and other points of possible failure involved, the likelihood of an accidental war increases. Even if one were to remove all factors which are possible to influence, there would still be a chance of war, because it is a threat with a random element as defined by Schelling (1960).

Another element that needs to be addressed is intelligence agencies and their effect on this analysis. One could say that due to their nature intelligence agencies will predict the preferences and strategies of their opponents. I can absolutely see how one could give weighted values based on how good the players' intelligence agencies are. However, it is naturally impossible for me to accurately predict their value or their correctness of their predictions. I have therefore chosen to ignore the value of this element as it is just not possible to properly account for it.

### Preferences

Even though you can never truly understand the preference of a country, we can rationalize, theorize, and guess as to what the country wants to achieve. It is possible to divide the preferences of a player into the miniscule, it adds little value to the game. I chose to divide the preferences of the players into five levels. This is a compromise where there are few enough levels that they hold significant differences, while having a reasonable amount to choose from. Keep in mind that the preferences are not necessarily the same for both sides.

In a game one might think that the easiest approach would be to figure out what the players want. This might be correct in some cases; but I surmise it is instead easier to comprehend what a player truly does not want. The least preferable outcome for any rational player is not to be able to play the game anymore, in other words death. Consider the bomb

threat example presented in the methods chapter. The worst outcome for both parties is that the one making the threats blows up the bomb, hence acting on his threat and killing them both. Dying is equivalent to losing the game, and if they both die, nobody wins – the rationale being that death is the worst possible outcome. By being dead you can never play the same or any game anymore. If the players represent countries, as they do in this game, the question of death means the removal of, or at least severe and irreversible damage to, a country. This comes in two main forms: being conquered or being nuked, as are the end games of Schelling's all-out war (Schelling, 1960). Following this logic, if the threat concerns being conquered, the only logical response is to exchange nuclear weapons. As you have already lost the game, why not take down the other player with you? While one could think that the value of such an exchange would be based upon the weapons that could be delivered at the enemy, it is not. This is so despite that the United States' nuclear superiority is overwhelming when compared to North Korea or China; the United States possess an estimated 6000 nuclear warheads, while North Korea possess an estimated 20-30 and the Chinese an estimated 130 (Arms Control Association, 2020). As Sagan and Turcoout (1993) point out, the exchange of nuclear weapons, even if one sided, will have far-reaching unforeseen consequences. While I will not deny that there is reason to question Chinese commitment to North Korea and their nuclear program, as there is little to gain and much to lose for the Chinese by North Korea possessing nuclear weapons, there is little to no reason to believe that the Chinese would allow a nuclear attack on North Korea to go unanswered. Due to this reasoning, I conclude that the exchange of nuclear weapons must have the lowest possible value for both players. It is the least favourable outcome for them both.

Following the logic of destruction being something to avoid, the logical second worst alternative is a limited war. By limited war I follow Schelling's (1960) distinction, where it means all the steps of conflict below all-out war. So, theoretically, it includes all forms of conflict from simple rifle fire to missile strikes. Still, there exists a potential reasoning to differentiate between the level of conflict. The inherent danger of limited war is nonetheless the escalation possibility, not the damage from the weapons themselves, since even such an armed conflict can become an all-out war (Schelling, 1960). While limited war is a logical second worst alternative, I will instead argue that it is not necessarily the second worst alternative for North Korea. This is because the North Koreans have put extreme effort into developing nuclear weapons. As evident through their history, they have been willing to commit acts of limited war, with border skirmishes, commando raids and bombings. They are

not strangers from war, and the potential conventional firepower that North Korea can launch on its southern neighbour and their American bases is not insignificant. North Korea has the world's fourth largest army, third biggest storage of rocket projectors, third largest collection of tanks and a significant amount of artillery. (Globalfirepower, 2020) They can do significant conventional damage southward. Even if the technological edge clearly leans towards the United States and their South Korean allies, as evident from watching North Korean military parades where a lot of their equipment is outdated (Lister, 2017), it also seems evident that North Korea signed the NPT mostly due to pressure from the Soviet Union, as the pressure disappeared with their dissolution. After the fall of the Soviet Union North Korea committed strongly to developing nuclear weapons by any means possible. They only temporarily stopped when their program was discovered, and they started it up again as soon as they could (Solingen, 2007). However, while nuclear weapons had been developed before Kim Jong-un came to power, the number of tests ramped up after he became supreme leader, going so far as to perform three nuclear tests in his five and a half years of office, where two of them occurred in 2016. Considering all of this, I assume that the preferences of the United States and North Korea diverge: The second worst possibility for the United States is limited war, while denuclearisation, in other words giving up on its nuclear venture, is the second worst possibility for North Korea. The third best option for North Korea becomes limited war, basically following the same logic – while it is not a good outcome in an absolute sense, but it is at least marginally better than giving up on their nuclear program.

As I have already concluded, other than nuclear war, the worst option for North Korea is denuclearisation, while it is something that the United States wants to achieve. This does not necessarily mean that getting North Korea to denuclearize is the most preferred outcome for the United States. However, the United States have historically put a lot of pressure trying to make North Korea follow the NPT, with both sticks, in the form of sanctions, and carrots, in the form of aid (Solingen, 2007). This does not necessarily mean that this is the preferred outcome of the United States. The reason for this lies on the shoulder of Trump. If there is one way an individual can affect the outcome, it lies in the preferences of those outcomes. In an interview with *The Washington Post* in 2016 Trump said the following to a question about risk:

> "TRUMP: Well I just think we have much bigger risks. I mean I think we have militarily tremendous risks. I think we're in tremendous peril. I think our biggest form of climate change we should worry about is nuclear weapons. The biggest risk to the world, to me – I know President Obama thought it was climate change – to me the biggest risk is nuclear weapons.

> That's – that is climate change. That is a disaster, and we don't even know where the nuclear weapons are right now. We don't know who has them. We don't know who's trying to get them. The biggest risk for this world and this country is nuclear weapons, the power of nuclear weapons." ("A transcript of Donald Trump's meeting", 2016)

As we can see in this 2016 interview, he points to nuclear weapons as one of the biggest risks to the world. However, this interview was done just a few months before the 2016 election. With any such interview there is an uncertainty if that is truly what he thinks and not just something he says due to the election. However, this is not the first time he talks about nuclear weapons, as one can see in an interview, he had with Playboy Magazine in 1990:

> "I've always thought about the issue of nuclear war; it's a very important element in my thought process. It's the ultimate, the ultimate catastrophe, the biggest problem this world has, and nobody's focusing on the nuts and bolts of it. It's a little like sickness. People don't believe they're going to get sick until they do. Nobody wants to talk about it. I believe the greatest of all stupidities is people's believing it will never happen, because everybody knows how destructive it will be, so nobody uses weapons. What bullshit." (Playboy, 1990)

As one can see, despite the time between the interviews being long, there is absolutely consistency in the language used by Trump to describe the perceived importance of nuclear weapons. This lends credibility to the idea that Trump sees and understands the power of nuclear weapons. And there is also the inherent logic of the fear of nuclear weapons, as any rational actor would not dare to use them, at the very least if the target can retaliate with nuclear weapons. Following that logic, one can see why one would want to remove the chance of such weapons being used at all. One should also not underestimate the value of achieving something that his predecessors could not. Because of this I would say the optimal outcome for the United States and Trump is denuclearisation.

While they are a surprisingly large part of the international language, war and nukes are luckily not the only means of communication between nations. Through the history of the last 70 years on the Korean Peninsula we can see that while war and nukes have been used to speak to each other, or as signalling devices, other important languages have been economics and military posturing. Trade, sanctions and aid are all part of economic communication, and posturing through military exercises, missile tests and the presence of troops is about telling a story to the outside world as well as to each other. The North Korean regime has been hit hard with economic sanctions at every step of the nuclear development process, only for the

sanctions to be reduced when Pyongyang has suspended their efforts. After performing a nuclear test, even their sole allies, the Chinese, did approve a UNCS resolution to sanction North Korea. With every consecutive nuclear test and major missile breakthrough the country has faced harder and harder sanctions, and their Chinese allies have supported it at every step. While the original sanctions were very focused on the development of nuclear and missile weapons themselves, by 2016, the sanctions were targeting their export and income (Arms Control Association, 2018). It is undoubtedly in the interest of the North Korean regime to end these sanctions. This interest is further strengthened by Kim Jong-un's focus on developing the economy, as explained by Ford (2018). Logically, it would be in the United States' interest to continue with the sanctions unless North Korea makes an effort to denuclearize. In contrast, removing or reducing the sanctions without North Korea suspending their nuclear endeavour in return effectively means you have accepted their nuclear program. With posture, I mean an implied threat through a show of military force; in other words the aggressive language of tacit communication. There are varying ways to show military force. One way is through military exercises, such as the annual Foal Eagle/Key Resolve and Ulchi-Freedom Guardian conducted by the United States and South Korea. ("US-South Korea", 2017). Another way is through the displaying of weaponry in a military parade, while the parade itself is often in remembrance of or a celebration of something. The discussion and focus, in foreign media, are usually on the weaponry displayed – as one can see if reading articles of the annual North Korean parade for the Day of the Sun. (Schmerler, 2017). A third way is as simple as a constant military presence, such as the American military bases present in South Korea.

However, all of these are mere constants, being present all the time. During a crisis there would instead be extraordinary shows of power, such as extraordinary weapons tests, military presence and military exercises. The question then becomes how all of this translates to preferences. I see them as positions, compared to how the game started, where you either are at a worse or in the same position, or at an improved position. Worse position means here stronger sanctions, more military exercises and more weapon tests. And better position means decreased sanctions, less military exercises and fewer tests. What each player specifically wants varies, however. Following the train of thought as to why denuclearization is important for the United States, then fewer nuclear and missile tests by North Korea, or the stopping of them altogether, will be important to Washington. At the same time, the easing of some or all of the economic pressure coming from sanctions is important for North Korea. The placement for these position outcomes on the scale of preferences differs for each country. For North

Korea, being in the same or a worse position is the second-best outcome and being in a better position is the best possible outcome. As for the United States, denuclearization of North Korea is the best possible outcome, being in a better position is below that, and being in a worse position as the third best outcome.

Based upon this, the preferences will be looking like below. Going from worst, second worst, status quo, second best and best, I have given a descriptive meaning to these levels for each of the countries, to better remember what they mean.

North Korea:

| | |
|---|---|
| (1) Worst | Nuclear exchange |
| (2) Second worst | Denuclearization |
| (3) Status quo | Limited War |
| (4) Second best | Same or worse position |
| (5) Best | Better position |

The United States:

| | |
|---|---|
| (1) Worst | Nuclear exchange |
| (2) Second worst | Limited War |
| (3) Status quo | Same or worse position |
| (4) Second best | Better position |
| (5) Best | Denuclearization |

## Leadup

The dataset starts on the 8th of april, which is when the first significant event happened. As a response to a missile test by North Korea, the United States sent a navy strike group to the Korean Peninsula (Ali, 2017). The days following, North Korea warned that it would respond to any aggression with nuclear force, causing Trump to send out a series of tweets about North Korea. (Wong & Brunnstrom, 2017). The most interesting takeaway from these tweets was that they usually mentioned China and their response to North Korea. This culminated with China announcing that they were enforcing a ban on coal imports from North Korea as well as increasing economic pressure against Pyongyang. At the same time North Korea launched a missile test, which failed. Ten days after the navy strike group wes said to be sent, *Reuters* reported that it never arrived at the Korean peninsula after all, but instead was headed towards Singapore and India (Stewart, 2017a). North Korea launched another failed missile test on the 29th of April. ("North Korea crisis", 2017). Five days later, the navy strike group arrived in South Korea. (Lockie, 2017a).

Over the next month North Korea launched three additional missile tests, while in a transcript of a conversation between Trump and the president of the Philippines it was revealed that the United States had two nuclear submarines in Korean waters (Kubo & Sano, 2017; Lema, 2017; Park, 2017; "North Korea fires missile", 2017).

On 2nd June, the United Nations Security Council (UNSC) unanimously expanded sanctions against North Korea (Nichols, 2017a). Just a few days before, two American strike force groups met up outside the Korean peninsula, and officials called it routine (Lockie, 2017b). On the 13th of June, an American student, imprisoned in North Korea, was sent home in medivac after going into a coma, dying just a week later (Gorman, 2017; Spetalnick & Woolston, 2017). On the 30th of June, after a visit by the new South Korean President Moon Jae-in, Trump tweeted that his patience was over and called the era of strategic patience with the North Korea regime a failure (Trump, 2017b, 2017c).

North Korea launched another missile test on the 4th of July (Kubo & Lies, 2017). The United States responded it was ready to use force against North Korea, while China urged restraint (Blanchard & Shepherd, 2017). On the 29th of July North Korea launched a missile test, which reportedly flew higher than 3000 kilometres, and announced that all of the United

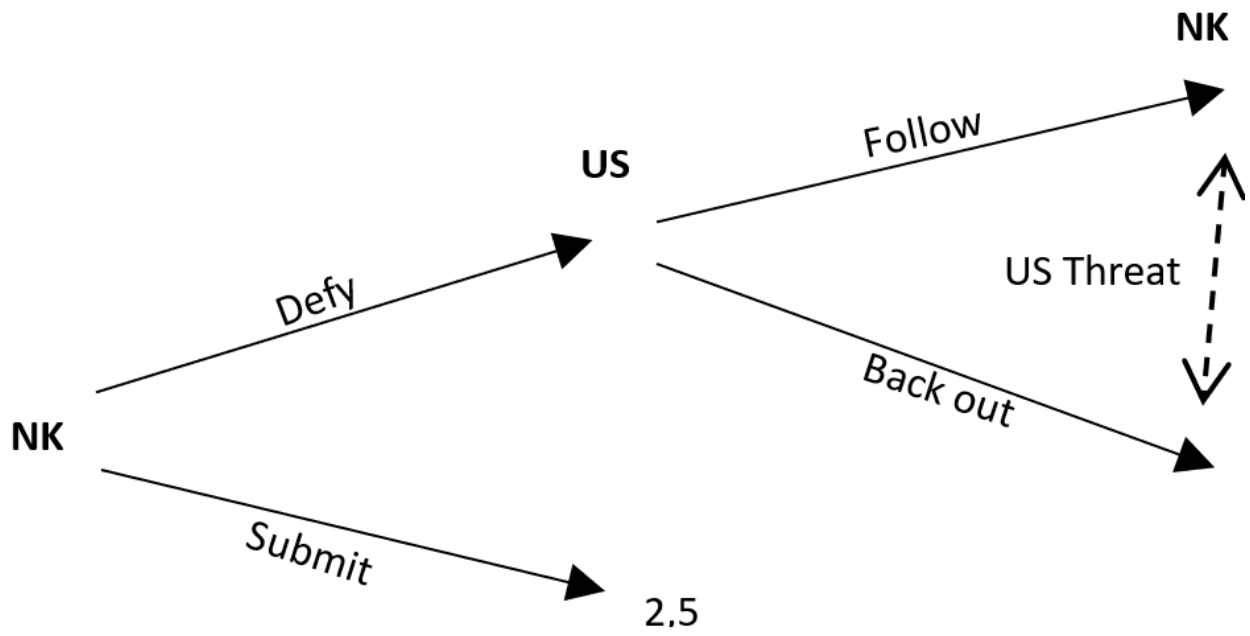
States is within strike range (Lies, 2017). At the same time, Trump said that China had done nothing in North Korea (Kim & Ali, 2017). The next day the United States flew bombers over the Korean Peninsula (Pearson & Nichols, 2017). The UNSC unanimously voted for further sanctions against North Korea on the 5th August (Nichols, 2017b). A few days later North Korea said it was considering striking a US military base in Guam (Kim & Kim, 2017). The same day United States officials said North Korea should halt actions that would lead to the end of the Regime, while Trump says he will respond with "fire and fury" against further threats against the United States (Ali, 2017; Walcott, 2017). The annual joint South Korean and United States military exercise started the 20th of August (Cheng, 2017). Over the next week, North Korea launched two missile tests (Henderson, 2017), where one of the missiles flew over Japan. (Fifield, 2017). Trump tweeted on the 30th of August, claiming that talks with North Korea did not help and was not the answer (Heavey & Alexander, 2017).

## Figures

As one can see, April to September 2017 was an eventful period. This period and the events can be viewed as a game of escalation, where one sees the events as actions and reactions between the players, leading up to the nuclear test. All these actions and reactions are a series of escalating threats, influencing whether the ultimatum is credible. The ultimatum is perhaps best illustrated by Trump's tweet of "fire and fury", but it is the sum of actions that the United States. The ultimatum was therefore an attempt to make North Korea back down by denuclearizing and ending their missile tests.

This ultimatum presents North Korea with the choice of either submitting or defying it. Figure 2.1 is made to illustrate this situation as a sequential game, where North Korea starts.

**Figure 2.1: Initial Threat**




Submitting would mean backing down on their nuclear program, causing the game and situation to end. The United States will get their most preferred outcome, while it would give North Korea their second worst outcome as they would lose their nuclear weapons program. If they choose to defy the threat instead, it will move the game forward, and it is then up to the United States to either follow through with their threat or backing out of it.

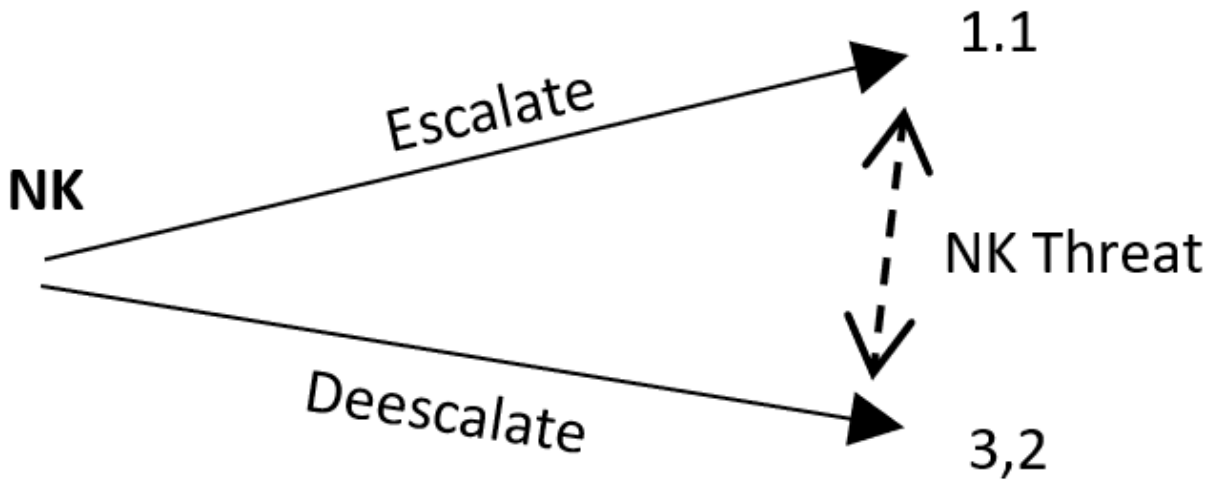
The question becomes if North Korea believes that the United States will follow through with their threat or not. However, the choice for the United States – to follow through or not on their threat – should not be viewed solely as a choice and instead be viewed as a choice with a chance element attached, with the chance being that they will follow through with their threat even if it does not make sense for a rational player who is destined to realize the best possible outcome.

The "US Threat" in Figure 2.1 represents the chance or likelihood that the American threat is influenced by the inherent randomness of institutions, weapons malfunctions and miscommunications. The previous threats are ways that increase the chance that they will follow through with their threats. The more weapons, personnel and institutions that are involved in the threat the higher the chance that an accidental war could start. So that is how the threats by the United States directly influence the likelihood of whether the United States

follows through or not. However, the element of "US Threat" should be treated as random, as the values of these are unknown; even if one was to remove all possible factors that the players could remove, there should still be a base chance of it happening.

If the United States follow through on their threat, this will move the ball over to the North Korean corner, presenting them with the choice to either escalate the conflict or de-escalate the conflict. Escalating the conflict would mean escalating the war to total conflict, while de-escalating the conflict will lead to either continued conflict at the same intensity level or reducing the level of conflict. Figure 2.2 is made to illustrate this situation.

**Figure 2.2: War Scenario**




However, in the same style that the American threat is influenced by the inherent randomness of institutions, weapons malfunctions and miscommunications, the same can be said about the chance or likelihood of the North Koreans escalating the conflict. This means that the more weapons, personnel and institutions that North Korea includes in their threats, the higher the chance that North Korea escalates instead of deescalates.

There exists an important relationship between the North Korean threat and the American threat. The effectiveness of the American threat is reduced if the North Korean threat is effective. For the more likely the outcome of the scenario is nuclear war the less likely the threat is effective. This is because while the American threat relies on an implicit chance of the use of nuclear weapons, they still follow the rules of rational actors where they want to achieve the best possible outcome. However, as a threat with a random element needs a random element

that cannot be eliminated by either players, the effectiveness of the American threat can never be zero even if the chance of North Korean retaliation is 100%; for the random chance of war due to institutions, weapons malfunctions or miscommunications is always present, or else it would not be a threat with a random element.

An important thing to point out here is that the game as written here accounts for the event of a first strike nuclear attack on North Korea by the United State. The only thing such an attack would do, within the limitations of this game, is to force an increase in the chance that North Korea chooses "escalate" to one hundred percent. This is so as any use of nuclear weapons is the worst possible outcome for both sides, even if it is just one side, and therefore escalating is the only possible outcome of an American first-strike scenario.

It should also be noted that it is possible to see this escalating process as a repeated game with an increasing chance of total war every time someone chooses to escalate. For the purpose of this thesis, I have chosen to keep it as a simple non-repeating game for simplicity.

If the United States chooses instead to back out of their ultimatum, and if is not forced by the random chance into following through with it, the question becomes, what is North Korea's next move? If the United States backs down, North Korea has avoided retaliation for breaking the ultimatum, so instead it becomes a question of how to normalize relations. As any talks would have to include denuclearization to some degree, there are two possible choices for North Korea: either commit or to give lip service to such talks.

Committing here would mean accepting denuclearization; in effect, this would be the same as submitting and ending the game. The United States will get their most preferred outcome, denuclearization, while it would give North Korea their second worst outcome as they would lose their nuclear weapon program. It is important to remember that North Korea has not been willing to give up on their nuclear program at all. And under Kim Jong-un the intensity of nuclear tests has gone up, and logically there is little reason to believe that they would believe that North Korea would commit to denuclearization when North Korea has done so much to keep their nuclear program running (Ford, 2018). However, as this is a game with full and perfect information, if North Korea choose to commit to denuclearization, the United States will know this commitment is real.

North Korea may instead give lip service to denuclearization, meaning that they do not commit themselves, instead talking about it but doing nothing. This is how North Korea has

acted several times before the nuclear test of 2006 (Solingen, 2007). In other words, giving lip service to talks is a continuation of their earlier policy of talking and not stopping with their weapons development.

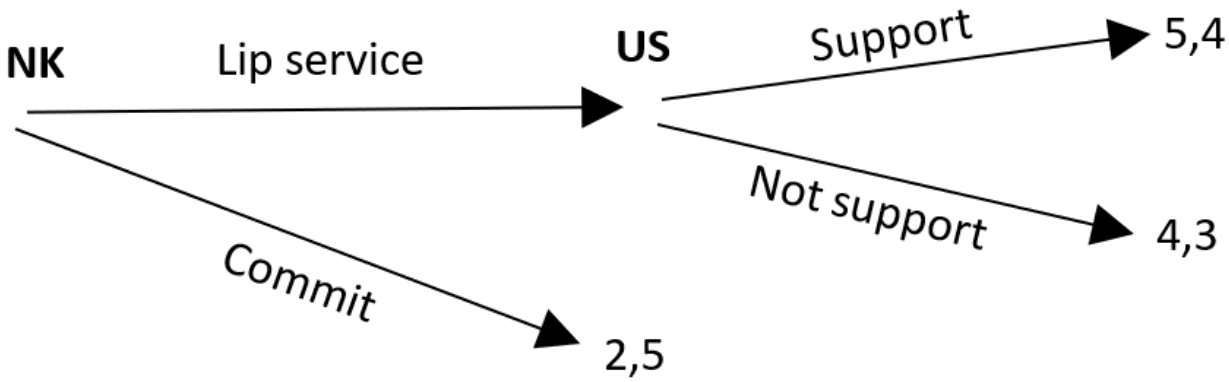
Giving lip service gives the United States a choice of how to react. They can either support talks or not support them. Considering that this is a game the United States would immediately know that North Korea is not committed to such talks, the question then becomes what they can gain by supporting or not supporting “pointless” talks.

By not supporting the talks the United States will effectively continue the status quo, with little to be gained by either side. In this scenario the trade embargo of North Korea, military exercises and weapons tests by both sides will continue. In other words, this will be the second most preferred outcome for North Korea while it will be the third most preferred outcome for the United States.

By supporting the talks, the United States instead opens the possibility for gains by each side. While the United States cannot achieve their preferred outcome of denuclearization when the talks are just lip service for North Korea. It can still briefly or permanently reduce North Korea’s weapons tests and military exercises. For North Korea, the gains they could achieve are to get the United States to reduce its deployment of weapons, weapon tests, military exercises, and reduce its trade embargo on North Korea. However, it should be noted here that history shows that the United States has only been willing to reduce its trade embargo on North Korea if denuclearization is on the table. Regardless, achieving just a temporary reduction of hostilities by each side is an improvement, and it is therefore the preferred outcome for North Korea and the second most preferred outcome for the United States.

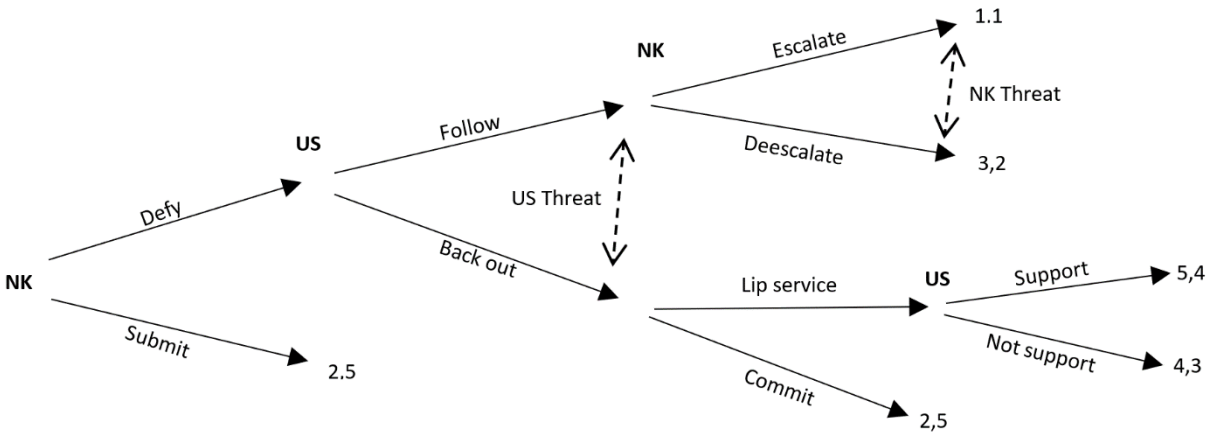
Figure 2.3 is made to illustrate the situation, where North Korea starts.

**Figure 2.3: Peace Scenario**




While each of the figures are interesting on their own, they are only part of the total game. Figure 2.4 shows Figure 2.1, Figure 2.2 and Figure 2.3 combined – in other words, the entire game.

**Figure 2.4: The Game**




Following the rules as outlined above, and using backwards induction starting at the last possible choice, we can best analyse the game in its entirety. The last possible move is the United States with the choice of supporting or not supporting. The value of support is higher than not supporting, as gaining something is better than status quo. This will give the United States their second most preferred outcome and North Korea its most preferred outcome.

Moving one step backwards, North Korea is presented with the choice of committing to denuclearization or engaging in lip service talks. Committing will give North Korea their second worst preferred outcome and the United States their most preferred outcome. However, as North Korea will get their most preferred outcome by choosing lip service, they will therefore rationally choose that action.

One move backwards from this we find the United States with the choice of either following through or backing out of their threat. Following backwards induction, we know the outcome associated with backing out will be the preferred outcome for North Korea and the second most preferred outcome for the United States.

We can now instead take one step forward to the other strategy where the United States followed through with their threat. The choice that North Korea is presented with is either escalating or de-escalating the conflict. Naturally, North Korea will want to avoid total war, which is their least preferred outcome, and, if given the opportunity, instead choose to de-escalate, which will give North Korea its third least preferred outcome and the United States its second least preferred outcome.

Going backward one move, the actual choice for the United States when choosing to follow through or backing out is between their second most preferred or their second least preferred outcome. So rationally they would choose to back down.

By taking one more step backwards we arrive at the start of the game where North Korea has the choice of either submitting to the ultimatum or defying it. Submitting means giving up the nuclear program and is therefore the second least preferred outcome for North Korea, while it is the most preferred outcome for the United States. We know that the outcome of defying is that North Korea gets their most preferred outcome. The rational choice for North Korea is therefore to defy the threat.

It is therefore only through the threat with a random element that the United States can persuade North Korea to go for their second least preferred outcome instead of their most preferred one. For this the chance of the United States following through with their threat needs to be high enough to persuade North Korea. It is, however, important to remember that even if the United States follows through with their threat if North Korea de-escalates, that produces a limited war, which is still a preferred outcome over submitting and denuclearization. While North Korea can reduce the effectiveness of the threat with their own threat, it is important to

remember that North Korea's threat, if followed through, will lead to total war, which is the only outcome that is ranked lower than denuclearization.

## Aftermath

To understand how these games fit with reality I will first go through the rest of the time period under study, before discussing how reality and the games fit together.

On the 2nd September, 2017, North Korea announced it had a missile-ready hydrogen bomb ("North Korea says", 2017). On the following day North Korea conducted an underground nuclear test, the most powerful it had ever conducted. It was powerful enough to be consistent with a hydrogen bomb, which if true would have been a major North Korean breakthrough (Kim & Park, 2017). The UNSC introduced stronger sanctions nine days later, on the 12th of September ("North Korea threatens US", 2017). This was the same way the UNSC had responded after every major North Korean missile and nuclear test.

Over the next month the United States and North Korea began a series of escalating threats where Trump among other things promised to destroy North Korea if the United States was attacked (Mason & Holland, 2017), while North Korea conducted another missile test, this time over Japan. ("North Korea missile test", 2017). The United States and its allies also conducted a series of military drills around the Korean Peninsula (Kelly, 2017; Stewart, 2017b).

On the 29th of November North Korea tested an intercontinental ballistic missile that reportedly could reach the mainland of the United States (Smith, 2017). On the 12th of December North Korea said the military drills conducted by the United States and its allies around North Korea would make war inevitable ("North Korea says war", 2017). On the 22nd of December, the UNSC unanimously adopted new sanctions against North Korea (Young, 2017). On the 31st of December Kim-Jong-un announced that North Korea was open to talks with South Korea (Yang & Smith, 2018). Two days later Trump tweeted that his nuclear button was bigger, after Kim Jong-un stated that "his nuclear button is on his desk at all time" (Beech, 2018).

On the 3rd of January 2018 North Korea reopened their hotline to their southern neighbour to discuss the Olympics ("North Korea reopens hotline", 2018). Two weeks later it was agreed that North and South Korea would march under a single "united" flag at the opening of the Olympic Games in South Korea ("Koreas to march", 2018). When the Olympic Games commences on the 9th February, the Korean nations duly marched together under a united flag (Rich, 2018).

A notable event that also happened in January, on the 25th, was that the so-called Doomsday Clock – a symbol of the perceived risk of a global calamity – was moved to two minutes to midnight. This was done as a response to both the development of the North Korean nuclear program and the US nuclear program. This is the closest the clock has been to midnight – the symbol of an impending global catastrophe – since the end of the cold war. (Goldberg, 2018). Furthermore, Foal Eagle, one of the annual joint military exercises between South Korea and the United States was suspended for a month after the Olympics and started up on the 31st of March (Kim, 2018).

After meetings between North Korea and South Korea, it was announced on the 8th March that Trump was going to meet with Kim Jong-un. The meeting would take place by May with the goal of achieving permanent denuclearization (Padden, 2018). Over the next month several developments took place; there were reportedly secret talks between the United States and North Korea, and sources claimed that North Korea was willing to discuss disarmament (Labott et al., 2018; Spetalnick & Brunnstrom, 2018). On the 20th of April North Korea said it would no longer conduct nuclear tests and was willing to scrap their nuclear test site (Kim & Kim, 2018). Reports of a possible collapse of the test site came less than a week later – a collapse that could render the test site unusable ("North Korea test", 2018). Two weeks later North Korea announced that it had scheduled the dismantlement of their nuclear test site for late May (Kim & Brunnstrom, 2018).

On the 4th of May Trump announces that the date and place is set for a summit with North Korea (Holland & Rampton, 2018). Three weeks later, however, on the 24th of May, Trump canceled the summit with North Korea and warned that the military was ready (Brunnstrom et al., 2018). The same day North Korea collapsed tunnels at its nuclear test site (Lee, 2018). A week later, on the 1st of June, Trump announced that the summit with North Korea was now going to happen ("US-North Korea", 2018). The two leaders arrived in Singapore, which was chosen for the summit, on the 10th of June (Diamond, 2018). After a few

days of meetings and discussions, the two nations signed a declaration of peace, prosperity and denuclearization of North Korea ("Trump Kim summit", 2018). On the 12th of June 2018 Trump pledged to suspend all "war games" with South Korea. He also called the joint military exercise an unnecessary expense that was very provocative towards North Korea (Lamothe, 2018). On the next day he also announced that North Korea was no longer a nuclear threat. (Heavey, 2018).

## Discussion

By comparing the constructed game with reality, it is now possible to discuss the validity of the game and the value of it. The first and clearest response in all of this is the response that North Korea had to the "ultimatum" by the United States. North Korea responded in defiance, by conducting a nuclear test, thus the main purpose of the threat no longer exists, though the consequences of the threat are still in play.

The exact response by the United States after the North Korean nuclear test, and the rest of the game, is a lot harder to pinpoint. This is because it is nigh impossible to pinpoint the specific action which is the move taken by the player. For example, one could say that the United States first chose not to follow through with their threat until the two nations met. This is because just a few weeks before the summit, the United States said the summit was not going to happen and said their military is ready to strike. Despite this the rational choice would be to immediately choose between following through or not. Because it follows reason that if the United States had chosen to follow through with their threat, they would have done so right after the nuclear weapons test, in order to demonstrate that the United States follows through with their threats, thereby lending credibility to future threats.

As this is a threat with a random element it is not a matter of the United States choosing to follow through with their threat or not. The fact that there were no news reports of weapons exchanges of either the conventional or nuclear sort, indicates that the random chance of war between North Korea or the United States did not occur. The implied threat of increased UNSC sanctions after North Korean nuclear or missile tests, should not be seen as part of the threat with random elements by the United States. Sanctions by the UNSC have followed every such

test, despite North Korea's only formal ally, China, being part of the UNSC and therefore able to veto any resolution. There is little reason to doubt that North Korea would expect to avoid sanctions after performing another nuclear test. The threat by the United States as understood in this thesis is conventional or nuclear military strike or intervention on North Korea.

When the United States chose to not follow through with their threat was over and North Korea was given the option to choose between lip service or commit themselves to denuclearization and when the option the United States chose to accept lip service talks are quite diffuse and in the end does not matter. What is important is whether North Korea entered the United States–North Korean summit with the intention to denuclearize. If they went with the intention to denuclearize, the outcome of the game, as shown in Figure 2.4, would be (2,5), not (5,4). The evidence supporting that they were committed to denuclearizing are the treaty the two countries signed and some of the actions taken. Treaties are not necessarily proof that they will follow through with concrete action. North Korea signed the NPT, so them possessing nuclear armaments today is proof that they did not stick to what they agreed to. It is more important to look at the actions taken to gauge their commitment to denuclearization. The most persuasive action that supports a commitment to denuclearization was the decommissioning of the nuclear test site. One argument against the sincerity of this action would be news reports at the time claiming that the test site was already collapsing, and that it was rendered unusable after the previous nuclear test. The decommissioning of the test site might have been inevitable, and considering how far North Korea has gone to develop their nuclear program, despite the ever-growing sanctions and diplomatic isolation, it seems unlikely that they would follow through with denuclearization. Based on the information available at present time, news articles seem to indicate there is very little progress with respect to North Korean denuclearization (Sanger & Sang-hun, 2018). This suggests that North Korea never actually committed themselves to denuclearization, and that their commitment at the time should be viewed as lip service.

The assumption that the United States knew that North Korea would not give up the program would call into question why the meeting took place at all. The short answer is that both states had something to gain from it; as shown in Figure 2.4, the value of the outcome of supporting is higher than not supporting. While it is unlikely that North Korea ever intended to denuclearize, at least they gave the impression that they were willing to. This made it easier to justify a meeting between the two countries' leaders at the Singapore summit. While I suspect

the value of the meeting might lie in the legitimacy it gave to the policies the leaders of the respective countries used, the true value of this meeting is debatable and outside the scope of this thesis. We can only conclude from this thesis; it would not happen if they both had not something to be gained from it. Though, at the end of the day Trump and Kim Jong-un were the first leaders of their respective countries to get their counterparts to agree to a face- to-face meeting, is impressive regardless of the value.

# Chapter 6: Conclusion

My intention behind this study was to examine if the United States used madman theory during the 2017-2018 North Korea crisis. My theoretical foundation revolved around the inherent problems of using nuclear weapons as threats; thereafter building my theoretical understanding around Thomas Schelling's ideas and assumptions about bargaining theory, while at the same time also reviewing other theorists, some of whom conform to and some of whom criticize his ideas and assumptions. This way I was given a framework to better understand the madman theory – and its limitations – as described by Richard Nixon. Based on this, I concluded that true nature of madman theory is a threat with a random element. By doing this, a core assumption of bargaining theory and game theory – the rational actor – is adhered to, and a value of behaving irrationally can be applied to a game. After applying game theory to what I rationalize is the possible outcomes of the crisis, and by comparing those outcomes and games to reality, I gained a better understanding as to why the outcome of the crisis was the one that was eventually reached. It was only through using a threat with a random element that the United States could possibly get North Korea to denuclearize.

Does all this mean that the United States used madman theory during the 2017-2018 North Korea crisis? According to this thesis, the answer is yes. In my constructed game there is only one way that North Korea would rationally accept denuclearization, namely if the United States threaten to escalate the crisis to war. This is so even though there is rationally no reason for the United States to follow through with such a threat, as such an outcome is only possible if the United States accept the realization of their worst or second worst possible outcomes. Hence the only way to achieve the desired outcome by the United States is by behaving like a madman, or, in other words, by applying a threat with a random element. This, however, proved unsuccessful and achieved nothing but an increase in the risk of a war of either the limited or total variant. At the same time, and in my judgment, this was also the only way that the United States could possibly achieve their objective. There is also the problem of North Korea probably being willing to accept a limited war over denuclearization. This means that the only way that they would accept denuclearization was if their choice were between that or total war.

It is important to remember that the war not occurring does not mean that there was no chance of it happening. One should instead see this as the United States and North Korea

walking towards the brink and, before they slipped and fell into the chasm of war, they fortunately stopped.

As the assumption about rational behaviour forms a core part of this analysis, it is important that the reader does not extrapolate that Trump knew that North Korea would not denuclearize even though he got a summit with a treaty saying that Pyongyang would do so. It does not matter in this analysis if Trump knew or not, as it is the United States that is the player, not Trump. If we follow the condition of the rational actor, then the United States – and not necessarily Trump – would know that North Korea would not denuclearize. In other words, the question of whether Trump knew that this would happen is outside the scope of this analysis, and my findings here are neither a confirmation nor a denial that he did.

It is also important to acknowledge that while North Korea have not yet denuclearized, neither have they performed any nuclear tests since the summit, and they have also suspended missile tests for some time. Also, the United States suspended their annual military exercises for a period. These victories are by no means perfect outcomes for either side, but they are better than no gains for either. This also means that, since these outcomes are not a permanent solution, both sides may have some reason to allow any future crisis to escalate. The United States wants denuclearization, and there has been little to no progress on that matter; while North Korea wants the sanctions gone, and they have not been reduced at all. So, the question is likely not *if* but instead *when* there will be another crisis involving threats of nuclear proportions between North Korea and the United States. While the preferences for both nations involved in such a future crisis could change, I expect the preferred outcomes to be like those described in this thesis. This will most likely mean that threats that are truly mad, due to the destruction that they can cause, will be used again. And there is no single answer to solve the conflict.

While I personally hope it is possible, I do not see any likely scenario in which North Korea will ever give up their nuclear weapons – except if they face imminent destruction. If they ever do surrender them willingly and peacefully, it will invalidate large parts of my analysis unless there is a huge policy change which will drastically reduce the value of possessing nuclear weapons for North Korea. Currently I can only see North Korea giving up their nuclear weapons in the extremely unlikely case of a sudden and total collapse of the North Korean government. Which is then either followed up by either Chinese occupation or an unlikely peaceful reunification of the Korean peninsula. In other words, a more unlikely version

of what happened with German reunification. While I will not overvalue a miniscule chance of such a scenario. as Levy (1997) says we humans have a pattern of doing, the chance of a peaceful denuclearization of North Korea without nuclear threats still exists.

The main limitation of this thesis, as well as of reality, is not knowing the exact point where the likelihood of conflict escalation is high enough to dissuade the other part. This thesis has made no attempt to quantify the value of the threats or calculate how threatened North Korea must feel to not defy the ultimatum. There is therefore room for more research into what this value could be. Since the better we understand where the ultimate brink is, the higher the chance that we never cross it. If it is at all possible to properly do so without having access to source material that will not be known for a minimum of decades, if ever, that is another question. However, there is value in attempting to calculate this. Because if anyone ever miscalculates and a war happens, regardless of the nations involved, if at least one of them possesses nuclear weapons, there is a chance for nuclear war – and that is a brink that I hope that we never cross.

# References


Ali, I. (2017, April 9). US Navy strike group to move toward Korean peninsula, US official says. *Business Insider*. https://www.businessinsider.com/r-us-navy-strike-group-to-move-toward-korean-peninsula-us-official-2017-4?r=US&IR=T

Ali, I. (2017, August 9). Mattis warns North Korea to stop actions that would 'lead to end of regime'. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-pentagon-idUSKBN1AP21E

Arms Control Association. (2018). *UN Security Council Resolutions on North Korea*. Retrieved from: https://www.armscontrol.org/factsheets/UN-Security-Council-Resolutions-on-North-Korea#res2087

Arms Control Association (2020). *Nuclear Weapons: Who Has What at a Glance. Retrieved* from: https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat

Beech, E. (2018, January 3). Trump to North Korean leader - my nuclear button 'is bigger & more powerful'. *Reuters*. https://uk.reuters.com/article/uk-northkorea-missiles-trump-button/trump-to-north-korean-leader-my-nuclear-button-is-bigger-more-powerful-idUKKBN1ES02C

Blanchard, B. & Shepherd, C. (2017, July 6). China urges calm after U.S. says ready to use force against North Korea. *Reuters*. https://ca.reuters.com/article/topNews/idCAKBN19R0OQ-OCATP

Bowman, J. (2000). Korea. *Columbia Chronologies of Asian History and Culture* (pp. 193-224). New York: Columbia University Press.

Brunnstrom, D. Spetalnick, M. & Kim, C. (2018, May 24). Trump cancels summit with North Korea's Kim, warns that military ready. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles/trump-cancels-summit-with-north-koreas-kim-warns-that-military-ready-idUSKCN1IP1RY

Bump, P. (2017, May 3). On more than a third of the days since Nov. 8, Trump has mentioned the election results. *The Washington Post*.

https://www.washingtonpost.com/news/politics/wp/2017/05/03/on-more-than-a-third-of-the-days-since-nov-8-trump-has-mentioned-the-election-results/

Cheng, J. (2017, August 20). War Games Begin as U.S., South Korea Brace for North's Fury. *The Wall Street Journal*. https://www.wsj.com/articles/war-games-to-begin-as-u-s-south-korea-brace-for-norths-fury-1503233131

Cannon, J. & Crowcroft, R. (2001). *A Dictionary of British History*. New York: Oxford University Press.

Carrier, G. (1990). Nuclear Winter, Current Understanding. *Proceedings of the American Philosophical Society, 134*(2), 83-89.

Chambers II, J. W. (1999). *The Oxford Companion to American Military History*. New York: Oxford University Press.

Coox, A. D. (1985). *Nomonhan: Japan against Russia, 1939*. California: Stanford University Press.

Cumings, B. (1981). *The Origins of the Korean War*. New Jersey: Princeton University Press.

Diamond, J. (2018, June 10). Trump arrives in Singapore ahead of historic North Korea summit. *CNN*. https://edition.cnn.com/2018/06/10/politics/donald-trump-arrival-singapore-summit/index.html

Downs, G. & Rocke, D. (1990). *Tacit bargaining, arms races, and arms control*. Ann Arbor: University of Michigan Press.

Fifield, A. (2017, August 28). North Korean missile flies over Japan, escalating tensions and prompting an angry response from Tokyo . *The Washington Post*. https://www.washingtonpost.com/world/north-korean-missile-flies-over-japan-escalating-tensions-and-prompting-an-angry-response-from-tokyo/2017/08/28/e1975804-8c37-11e7-9c53-6a169beb0953_story.html

Foot, M. R. D. & Dear, I. C. B. (2001). *The Oxford Companion to World War II*. New York: Oxford University Press.

Ford, G. (2018). Kim Jong Un. *In Talking to North Korea: Ending the Nuclear Standoff* (pp. 135-157). London: Pluto Press. doi:10.2307/j.ctv69tfz0.14

George, A. L. & Smoke, R. (1974) *Deterrence in American foreign policy: Theory and practice.* New York: Columbia University Press

Globalfirepower. (2020). *North Korea Military Strength (2020)*. Retrieved from https://www.globalfirepower.com/country-military-strength-detail.asp?country_id=north-korea

Goldberg, B. (2018, January 25). 'Doomsday Clock' closest to midnight since Cold War over nuclear threat. *Reuters*. https://www.reuters.com/article/us-science-doomsdayclock/doomsday-clock-closest-to-midnight-since-cold-war-over-nuclear-threat-idUSKBN1FE2GL

Gorman, S. (2017, June 19). U.S. student held prisoner by North Korea dies days after release. *Reuters*. https://www.reuters.com/article/us-usa-northkorea-detainee-idUSKBN19A2TW

Haldeman, H. R. and DiMona, J. (1978). *The Ends of Power*. New York: Times Books.

Heavy, S. (2018, June 12). Trump says North Korea 'no longer a nuclear threat'. *Reuters*. https://www.reuters.com/article/us-northkorea-usa-trump/trump-says-north-korea-no-longer-a-nuclear-threat-idUSKBN1J915T

Heavey, S. & Alexander, D. (2017, August 30). Trump says 'talking is not the answer' with North Korea . *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-trump/trump-says-talking-is-not-the-answer-with-north-korea-idUSKCN1BA1MC

Henderson, B. (2017, August 25). North Korea 'fires unidentified missiles into the sea'. *The Telegraph*. https://www.telegraph.co.uk/news/2017/08/25/north-korea-fires-unidentified-missiles-sea/

Holland, S. & Rampton, R. (2018, May 4). Trump says date, place set for North Korea summit. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-meeting/trump-says-date-place-set-for-north-korea-meeting-idUSKBN1I51PK

Hovi, J. & Rasch, B. E. (1993). *Strategisk handling: innføring i bruk av rasjonalitetsmodeller og spillteori.* Oslo: Gyldendal Norsk Forlag.

Hovi, J. (1998). *Games, Threats and Treaties: Understanding Commitments in International Relations.* London: Pinter.

Hughes, R. (2018, January 21). Trump's year on Twitter: Who has he criticised and praised the most? *BBC*. https://www.bbc.com/news/world-us-canada-42651688

Huth, P. K. (1999). Deterrence and international conflict: Empirical findings and theoretical debates. *Annual Review of Political Science 2*.1, 25-48. https://doi.org/10.1146/annurev.polisci.2.1.25

IAEA (2020). *IAEA and DPRK: Chronology of Key Events*. Retrieved from: https://www.iaea.org/newscenter/focus/dprk/chronology-of-key-events

Jervis, R. (1982). Deterrence and Perception. *International Security, 7*(3), 3-30. doi:10.2307/2538549

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica, 47*(2), 263-291. doi:10.2307/1914185

Kelly, T. (2017, October 11). US aircraft carrier drills with Japan as Air Force B-1 bombers buzz North Korea. *Business Insider*. https://www.businessinsider.com/us-aircraft-carrier-japan-air-force-b-1-bombers-north-korea-2017-10?r=US&IR=T

Kim, C. (2018, April 1).U.S., South Korea kick off annual joint military exercises after month-long delay. *Reuters*. https://af.reuters.com/article/worldNews/idAFKBN1H70S1

Kim, C. & Brunnstrom, D. (2018, May 12). North Korea details plans to dismantle nuclear bomb test site. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles/north-korea-details-plans-to-dismantle-nuclear-bomb-test-site-idUSKCN1ID0H5

Kimball, J. (2006). The Nixon Doctrine: A Saga of Misunderstanding. *Presidential Studies Quarterly, 36*(1), 59-74. https://doi.org/10.1111/j.1741-5705.2006.00287.x

Kim, C. & Kim, S. (2017, July 30). North Korea says seriously considering plan to strike Guam: KCNA. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-usa/north-korea-says-seriously-considering-plan-to-strike-guam-kcna-idUSKBN1AO2L9

Kim, J. & Ali, I. (2017, July 28). North Korea claims all of U.S. in strike range as Trump says China has done "nothing". *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-idUSKBN1AD1ZB

Kim, J. & Park, J. M. (2017, September 3). Possible two-stage hydrogen bomb seen 'game changer' for North Korea. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-thermonuclear-ana/possible-two-stage-hydrogen-bomb-seen-game-changer-for-north-korea-idUSKCN1BE0PT

Kim, S. & Kim, C. (2018, April 21). North Korea says will stop nuclear tests, scrap test site. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-kim/north-korea-says-it-will-stop-nuclear-tests-abolish-test-site-kcna-idUSKBN1HR37J

Koh, B. (1969). The Pueblo Incident in Perspective. *Far Eastern Survey, 9*(4), 264-280. https://doi.org/10.2307/2642545

Koreas to march under single 'united' flag in Olympic Games. (2018, January 17). *BBC*. https://www.bbc.com/news/world-asia-42721417

Kubo, N & Lies, E. (2017, July 4). North Korea missile 'greatly exceeded' altitude of 2,500 km: Japan Defense Ministry. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-japan-idUSKBN19P0I0

Kubo, N. & Sano, H. (2017, May 14). North Korea missile rose more than 2,000 kilometers in altitude: Japan defense minister. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-inada/north-korea-missile-rose-more-than-2000-kilometers-in-altitude-japan-defense-minister-idUSKBN18A00V

Labott, E. Liptak, K. & McLaughlin, J. (2018, April 7). Secret, direct talks underway between US and North Korea. *CNN*. https://edition.cnn.com/2018/04/07/politics/north-korea-us-talks/index.html

Lake, D. (2010). Two Cheers for Bargaining Theory: Assessing Rationalist Explanations of the Iraq War. *International Security*, *35*(3), 7-52. https://doi.org/10.1162/ISEC_a_00029

Lamothe, D. (2018, June 12). Trump pledged to end military exercises with South Korea. But will it ever happen? *The Washington Post.* https://www.washingtonpost.com/news/checkpoint/wp/2018/06/12/trump-pledged-to-end-military-exercises-with-south-korea-but-will-it-ever-happen/

Langlois, C. & Langlois, J. (1996). Tacit Bargaining in International Relations: A Game Model and a Case Study. *The Journal of Conflict Resolution*, *40*(4), 569-596.

Lawler, E. (1992). Power Processes in Bargaining. *The Sociological Quarterly*, *33*(1), 17-34.

Lee, J. (2018, May 24). North Korea collapses tunnels at nuclear test site: media reports. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles-tunnels/north-korea-collapses-tunnels-at-nuclear-test-site-media-reports-idUSKCN1IP1KU

Lema, K. (2017, May 24). Trump tells Duterte of two U.S. nuclear subs in Korean waters: NYT. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles-submarines/trump-tells-duterte-of-two-u-s-nuclear-subs-in-korean-waters-nyt-idUSKBN18K15Y

Levy, J. (1992). Prospect Theory and International Relations: Theoretical Applications and Analytical Problems. *Political Psychology*, *13*(2), 283-310.

Levy, J. (1997). Prospect Theory, Rational Choice, and International Relations. *International Studies Quarterly*, *41*(1), 87-112.

Lies, E. (2017, July 28). Altitude of N. Korean missile flight could have been over 3,000 km: NHK quoting Japan defense official. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles-altitude/altitude-of-n-korean-missile-flight-could-have-been-over-3000-km-nhk-quoting-japan-defense-official-idUSKBN1AD26U

Lister, T. (2010, November 25). North Korea's military aging but sizable. *CNN.* http://edition.cnn.com/2010/WORLD/asiapcf/11/24/north.korea.capability/index.html

Lockie, A. (2017b, June 2). The US now has 2 aircraft carriers sitting off North Korea's coast. *Business Insider*. https://www.businessinsider.com/vinson-reagan-aircraft-carrier-koreas-coast-2017-5?r=US&IR=T

Lockie, A. (2017a, May 4). The US and South Korean navies just put on a massive show of force amid North Korean nuclear tensions. *Business Insider*. https://www.businessinsider.com/us-south-korea-navy-north-korea-vinson-2017-5?r=US&IR=T

Mason, J. & Holland, S. (2017, September 20). Trump's U.N. speech shows nationalist instincts firmly intact. *Reuters*. https://www.reuters.com/article/us-un-assembly-trump-doctrine-analysis/trumps-u-n-speech-shows-nationalist-instincts-firmly-intact-idUSKCN1BV06I

Matray, J. I. (2006). The Korean War. In R. D. Schulzinger (Editor), *A Companion to American Foreign Relations*. New Jersey: Blackwell Publishing Ltd.

Matray, J. I. (2012). Mixed Message: The Korean Armistice Negotiations at Kaesong. *Pacific Historical Review, 81*(2), 221-244. doi:10.1525/phr.2012.81.2.221

Morrow, J. D. (1994). *Classical Game Theory. In Game Theory for Political Scientists*. New Jersey: Princeton University Press.

Nichols, M. (2017a, June 2). U.N. expands North Korea blacklist in first U.S., China sanctions deal under Trump. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-un-idUSKBN18T2X3

Nichols, M. (2017b, August 5). United Nations bans key North Korea exports over missile tests. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-un/united-nations-bans-key-north-korea-exports-over-missile-tests-idUSKBN1AL0NU

North Korea crisis: North in another 'failed' missile launch. (2017, April 29). *BBC*. https://www.bbc.com/news/world-asia-39750240

North Korea fires missile into Japanese waters. (2017, May 28). *The Guardian*. https://www.theguardian.com/world/2017/may/29/north-korea-fires-missile-into-japanese-waters

North Korea missile test splits world powers. (2017, September 15). *BBC*. https://www.bbc.com/news/world-asia-41281050

North Korea reopens hotline to South to discuss Olympics. (2018, January 3). *BBC.* https://www.bbc.com/news/world-asia-42549161

North Korea says it has missile-ready hydrogen bomb. (2017, September 3). *Al Jazeera.* https://www.aljazeera.com/news/2017/09/north-korea-missile-ready-hydrogen-bomb-170902225854764.html

North Korea says war with the U.S. is inevitable. (2017, December 7). *NBC.* https://www.nbcnews.com/news/north-korea/north-korea-says-war-u-s-inevitable-n827296

North Korea test site could be unusable after collapse - Chinese scientists. (2018, April 25). *BBC.* https://www.bbc.com/news/world-asia-43894394

North Korea threatens US with 'greatest pain' after UN sanctions. (2017, September 12). *BBC.* https://www.bbc.com/news/world-asia-41242992

Padden, B. (2018, March 8).Trump to Meet With Kim in Visit to North Korea. *VOA.* https://www.voanews.com/usa/trump-meet-kim-visit-north-korea

Park, J. M. (2017, May 21). North Korea tests another missile; Seoul says dashes hopes for peace. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles/north-korea-tests-another-missile-seoul-says-dashes-hopes-for-peace-idUSKBN18H0A6

Park, T. (2009). Beyond the Myth: Reassessing the Security Crisis on the Korean Peninsula during the Mid-1960s. *Pacific Affairs, 82*(1), 93-110.

Pearson, J. & Nichols, M. (2017, July 30). U.S. flies bombers over Korean peninsula after North Korea missile test. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles/u-s-flies-bombers-over-korean-peninsula-after-north-korea-missile-test-idUSKBN1AF02K

Plasking, G. (1990). *Playboy sat down with a young Donald Trump in 1990 where he teased a future in politics.* Retrieved from: https://www.playboy.com/read/playboy-interview-donald-trump-1990

Rich, M. (2018, February 9). Olympics Open With Koreas Marching Together, Offering Hope for Peace. *The New York Times.* https://www.nytimes.com/2018/02/09/world/asia/olympics-opening-ceremony-north-korea.html

Rothman, T. (1989). A MEMOIR OF NUCLEAR WINTER. *In Science a la Mode: Physical Fashions and Fictions* (pp. 109-147). PRINCETON, NEW JERSEY: Princeton University Press. doi:10.2307/j.ctt7zvs2k.8

Sagan, C. & Turco, R. (1993). Nuclear Winter in the Post-Cold War Era. *Journal of Peace Research, 30*(4), 369-373.

Sagan, S. & Suri, J. (2003). The Madman Nuclear Alert: Secrecy, Signaling, and Safety in October 1969. *International Security, 27*(4), 150-183.

Sanger, D. E. & Sang-Hun, C (2018, June 12). Two Years After Trump-Kim Meeting, Little to Show for Personal Diplomacy. *The New York Times.* https://www.nytimes.com/2020/06/12/world/asia/korea-nuclear-trump-kim.html

Savage, C. (2019, July 9) Trump Can't Block Critics From His Twitter Account, Appeals Court Rules. *The New York Times*. https://www.nytimes.com/2019/07/09/us/politics/trump-twitter-first-amendment.html

Schelling, T. C. (1960). *Strategy of Conflict*. Cambridge: Harvard University Press.

Schelling, T. C. (1960). *Arms and influence*. London: Yale University Press.

Schmerler, D. (2017, April 17). North Korea's military parade: What we didn't see. *CNN*. https://edition.cnn.com/2017/04/16/opinions/north-korea-military-parade-explained/index.html

Solingen, E. (2007). North Korea. *In Nuclear Logics: Contrasting Paths in East Asia and the Middle East* (pp. 118-140). New Jersey: Princeton University Press.

Smith, J. (2017, November 29).How North Korea's latest ICBM test stacks up. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles-technology-factbo/how-north-koreas-latest-icbm-test-stacks-up-idUSKBN1DT0IF

Spetalnick, M. & Brunnstrom, D. (2018, April 8). North Korea tells U.S. it is prepared to discuss denuclearization: source. *Reuters*. https://www.reuters.com/article/us-northkorea-missiles-talks/north-korea-tells-u-s-it-is-prepared-to-discuss-denuclearization-source-idUSKBN1HF0WQ

Spetalnick, M. & Woolston, B. (2017, June 13). High-level U.S. visit leads North Korea to free student in coma. *Reuters.* https://www.reuters.com/article/us-usa-northkorea-detainee/high-level-u-s-visit-leads-north-korea-to-free-student-in-coma-idUSKBN1941UX

Stewart, P. (2017b, November 2). U.S. bombers flew over South Korea's Pilsung Range in drill. *Reuters.* https://www.reuters.com/article/us-usa-trump-asia-bombers/u-s-bombers-flew-over-south-koreas-pilsung-range-in-drill-idUSKBN1D22XA

Stewart, P. (2017a, April 19). As Trump warned North Korea, his 'armada' was headed toward Australia. *Reuters*. https://www.reuters.com/article/us-northkorea-usa-carrier-idUSKBN17L03J

The Washington Post. (2016). *A transcript of Donald Trump's meeting with The Washington Post editorial board*. Retrieved from: https://www.washingtonpost.com/blogs/post-partisan/wp/2016/03/21/a-transcript-of-donald-trumps-meeting-with-the-washington-post-editorial-board/

Trump, D. J. [@realDonaldTrump]. (2017a, April 28). *North Korea disrespected the wishes of China & its highly respected President when it launched, though unsuccessfully, a missile today. Bad!* [Tweet]. Twitter. https://twitter.com/realDonaldTrump/status/858100088253669376

Trump, D. J. [@realDonaldTrump]. (2017b, June 30). *Just finished a very good meeting with the President of South Korea. Many subjects discussed including North Korea and new trade deal!* [Tweet]. Twitter. https://twitter.com/realdonaldtrump/status/880602793341591552

Trump, D. J. [@realDonaldTrump]. (2017c, June 30). *The era of strategic patience with the North Korea regime has failed. That patience is over. We are working closely with....* [Tweet]. Twitter. https://twitter.com/realdonaldtrump/status/880892632142143490

Trump Kim summit: Full text of the signed statement. (2018, June 12). *BBC.* https://www.bbc.com/news/world-asia-44453330

UN (2020). *Security Council Committee established pursuant to resolution 1718 (2006).* Retrieved from: https://www.un.org/securitycouncil/sanctions/1718

US-North Korea: Trump says summit with Kim is back on. (2018, June 1). *BBC.* https://www.bbc.com/news/world-us-canada-44339003

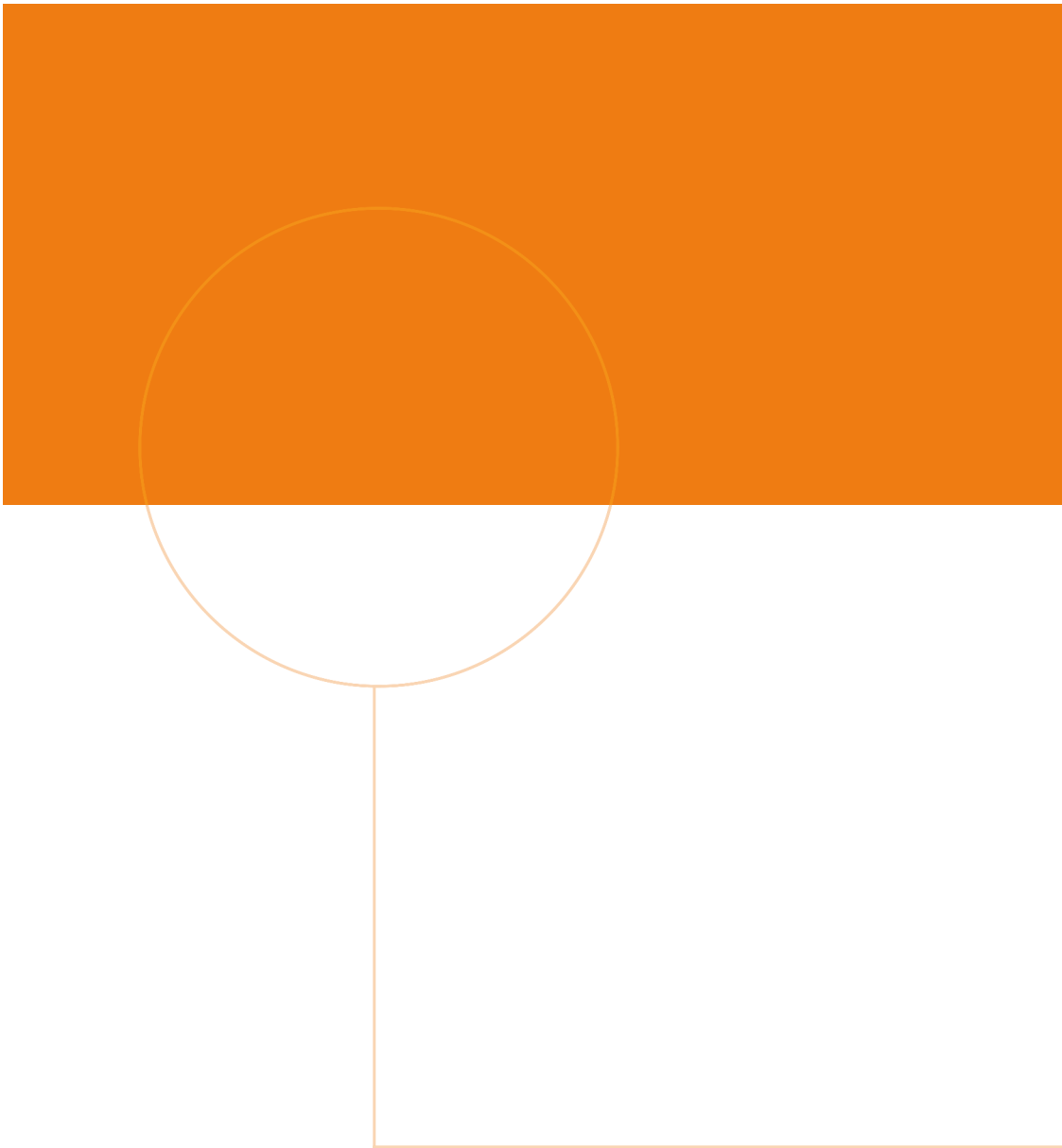
US-South Korea hold military drills amid tension. (2017, August 21). *BBC.* https://www.bbc.com/news/world-asia-40957725

Walcott, J. (2017, August 9). Trump's 'fire and fury' North Korea remark surprised aides: officials. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles-usa-idUSKBN1AP26D

Wong, S. L & Brunnstrom D. (2017, April 11). North Korea warns of nuclear strike if provoked; Trump 'armada' steams on. *Reuters.* https://www.reuters.com/article/us-northkorea-nuclear-idUSKBN17D0A4

Yang, H. & Smith, J. (2018, January 1). North Korea's Kim 'open to dialogue' with South Korea, will only use nukes if threatened. *Reuters.* https://www.reuters.com/article/us-northkorea-missiles-kimjongun/north-koreas-kim-open-to-dialogue-with-south-korea-will-only-use-nukes-if-threatened-idUSKBN1EQ0NJ

Young, L. (2017, December 22). Here are the latest United Nations sanctions on North Korea. *Global News.* https://globalnews.ca/news/3931801/united-nations-sanctions-on-north-korea/



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