Emerging Pressures:

Risks of Inadvertent Escalation with Emerging Nuclear Powers

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Abstract

Despite the supposed risks new and aspiring members to the so-called 'nuclear club' present for inadvertent nuclear escalation, scholarly attention to this is a relatively new endeavour. As we should not take for granted that established assumptions from deterrence theories developed based on Cold War superpower competition automatically apply to emerging nuclear powers, this asks the following question: *Why might escalatory pressure and subsequently the risk of inadvertent escalation be more intense for emerging nuclear weapons states?*

To answer this, Posen's (1991) seminal contribution on drivers of escalatory pressures is applied to the case of North Korea and its adversarial relationship to the United States-South Korea alliance. This has a two-fold purpose; to test to what extent this theoretical framework is appropriate for the study of new nuclear powers, and to investigate how his proposed mechanisms may manifest differently or more acutely for such states. Through a case study on North Korea, I find that these escalatory pressures indeed are present for emerging nuclear weapons states and may make adversary constellations including such states more prone to inadvertent escalation than their more established counterparts.

List of Abbreviations

ASW – anti-submarine warfare

C2 – command and control

C3 – command, control and communications

C4 – command, control, communications and computers

CYBERCOM – U.S. Cyber Command

DMZ – demilitarized zone

DPRK – Democratic People's Republic of Korea (North Korea)

ICBM – intercontinental ballistic missile

ISR – intelligence, surveillance and reconnaissance

JCPOA – Joint Comprehensive Plan of Action

KAMD – Korea Air and Missile Defence

KCNA – Korean Central News Agency

KMPR – Korea Massive Punishment and Retaliation system

K3 – South Korean deterrence approach to the DPRK: Kill Chain, KAMD, KMPR

MAD – mutually assured destruction

MRBM – medium-range ballistic missile

NPR – Nuclear Posture Review

NPT – Nuclear Non-Proliferation Treaty

OPLAN-5015 – Operations Plan 5015

OPLAN-5027 – Operations Plan 5027

OSINT – open-source intelligence

PGM – precision-guided munition

RoK – Republic of Korea (South Korea)

SLBM – submarine-launched ballistic missile

SRBM – short-range ballistic missile

SSB – ballistic missile submarine

SSBN – nuclear-powered ballistic missile submarine

TEL – transporter erector launcher

THAAD – Terminal High Altitude Area Defense

TNW – tactical nuclear weapons

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Chapter 1

Introduction

In March 2021, North Korea launched two newly developed potentially nuclear-capable cruise missiles into the Yellow Sea. Two days later, newly inaugurated U.S. President Joe Biden casually described these tests as nothing but 'business as usual' (Bicker, 2021). Later in August, North Korean leader Kim Jong Un's younger sister Kim Yo Jong declared diplomacy with the U.S. and South Korea futile and a need to further bolster the DPRK's deterrent power (KCNA Watch, 2021b). The DPRK followed up with a missile test spree over the course of September and October culminating in the test of a submarine-launched ballistic missile (Choe, 2021c; Van Diepen, 2021). Amidst these tests, North Korea claims it is willing to accede to American and South Korean calls for ending provocations and resuming talks (Choe, 2021d), on conditions of sanctions relief and action-based proof the U.S. has no 'hostile intent' towards it. Cycles of ambiguous signalling between these actors spark questions and discussion surrounding their intents and motivations. Some have ranked the North Korea-U.S./South Korea as one of the 'top conflicts to watch' due to high estimated of a crisis spinning out of control and the ramifications such a conflict would have for global affairs (Snyder, 2021). Analysts have estimated the odds of war on the Korean peninsula to be as high as 50 percent (Welch, 2018), and consider the most likely path towards it to be inadvertent escalation from crisis or limited conventional hostilities.

Nuclear proliferation among states like North Korea, Pakistan and Iran has shaped global politics in the 21st Century, especially in the forms of concerns regarding their 'rogue' nature, aggressive nuclear policies and risk-willingness. The objective of this thesis is to analyse the escalation pressure emerging nuclear weapons states are likely to experience, and their implications for deterrence and crisis stability, by asking the following research question: *Why might escalatory pressure and subsequently the risk of inadvertent escalation be more intense for emerging nuclear weapons states?* To answer the research question, suggested drivers of escalation pressure by Posen (1991) are applied to the case of North Korea.

Structure-wise, this thesis opens with a combined literature review and presentation of the theoretical framework and basic assumptions underlying the arguments. In the following chapter, I outline the research design and discuss the methodological choices associated with it. Subsequently, the discussion consists of four chapters of analysis. The first three are structured according to the mechanisms driving escalation pressure, namely the *security dilemma*, the *offensive inclination* of the military, and the *fog of war*. Last of them is a chapter presenting the overall picture emerging from the findings, key conclusions and implications for other emerging nuclear weapons states, followed by a concluding chapter providing implications for policy and theory.

The key finding of this thesis is that escalation pressure in a crisis or ongoing conventional hostilities on the Korean peninsula should be considered very high; adversary perceptions of malign intent, poor understanding, a highly asymmetrical balance of power, and resource constraints, mingle with threats of pre-emption and counterforce capabilities, and likely breakdown of situational understanding once a conventional campaign is underway. Together, these factors constitute a precarious situation. The security dilemma presents itself as acute on the Korean peninsula, and adversary perceptions are generally characterised by hostility. All three parties involved have offensively oriented doctrines and postures, and face first-strike incentives. How the fog of war influence escalation pressure remains a mostly theoretical discussion due to data scarcity.

Chapter 2

Literature Review and Theory

This chapter begins by presenting key concepts and relevant literature which has inspired this study. After accounting for central tenets of strategic theory and key works from the literature on nuclear deterrence follows an explanation of the scholarly contributions which form the theoretical basis of this thesis. That theoretical framework draws heavily on Posen's (1991) work on inadvertent escalation, and more recent inspired contributions by Kartchner and Gerson (2014) on escalation dynamics and Talmadge (2017) on the risks of inadvertent escalation during conventional conflict. Jervis' (1976) seminal work on the influences on misperception in international politics, and Jervis, Lebow and Stein's (1985) *Psychology and Deterrence* influence key assumptions and logics of this analysis. Accounting for the theory here functions both as clarifying the analytical framework for the thesis, as well as a literature review of selected past and contemporary contributions in the field of nuclear deterrence. The research question posed here is: *Why might escalatory pressure and subsequently the risk of inadvertent escalation be more intense for emerging nuclear weapons states?*

With the advent of states refusing to abide by international rules and instead choose to pursue nuclear weapons, concerns have been raised about the possibility of and necessary capabilities for deterring them. Questions of whether and how emerging nuclear weapons states pose new or adverse challenges for crisis stability, deterrence efficiency and risks of inadvertent escalation require investigations of how they challenge key assumptions of deterrence theory and as well as understanding the role nuclear weapons play for these states. A large portion of the literature on nuclear weapons was developed during the Cold War, with the superpowers of the U.S. and Soviet Union in mind. One should not take for granted that regional nuclear powers will display similar dynamics, or that all assumptions relevant to superpower competition will apply to them.

A part of this puzzle is to look at how escalation pressures could manifest for these states in relation to their main adversaries, especially under conditions of imminent or ongoing conventional military hostilities. As will be further discussed in the next chapter on research

design and methodology, the chosen case here is North Korea and the relationship to its main, allied adversaries United States and South Korea.

2.1 Key Concepts

2.1.1 Emerging Nuclear Weapons States

A key term here is *emerging nuclear weapons states* or *emerging nuclear powers*. Narang (2014, p. 1) captures key features of such states in the term *regional nuclear powers*: 'These states have small nuclear arsenals, are often ensnared in long-standing rivalries, participate in multiple active conflicts, and often have weak domestic political institutions'. The term *emerging* rather than *regional*, is used here to convey another relevant aspect and for precision; there are other regional nuclear powers with small arsenals who are tangled in rivalry and ongoing conflicts, like Israel and France, but these do not seem to spark the same unease with relation to deterrence challenges as those who most recently acquired nuclear weapons or have ongoing programmes, namely Pakistan, North Korea and Iran. These recent additions to or aspiring members of the 'nuclear club' cause unease presumably due to their highly repressive political systems but possibly also lack of experience with the politics of nuclear deterrence – hence, emerging. It is not given that all emerging nuclear weapons states will pose the same challenges to deterrence or that the severity of those challenges will be the same in each case. This opens for analysis of which factors influence escalation pressures in conflicts involving such powers, without conflating these actors with more established nuclear powers.

One could say *emerging nuclear weapons states* is an alternative term to that of the 'rogue state'. The latter carries an obvious negative undertone but has been frequently used to describe emerging nuclear weapons states with authoritarian regimes. It seems to be based on an: '…implicit assumption that these states are aggressively inclined and rarely adhere to the norms and rules of international relations' (Smith, 2006, p. 13). With its politicisation its analytical value has decreased, and critics claim it is now so vague it is: 'whoever the United States says it is' (Litwak in Caprioli and Trumbore, 2003, p. 378). Stricter definitions relied on key state characteristics such as a) pursuit of weapons of mass destruction, b) use of terrorism as an instrument of state policy, and c) threatening American security interests (Lake in Caprioli and Trumbore, 2003, pp. 383–384). These inspired the red-listing of states such as

Pakistan, North-Korea and Cuba, but incidentally left out states such as Syria and Saudi Arabia. The fluid and contested term of terrorism itself confuses the analytical boundaries of such a definition, and

2.1.2 Nuclear Escalation: Inadvertent and Accidental

In theory, escalation is defined as: '…an increase in the intensity or scope of conflict that crosses the threshold(s) considered significant by one or more of the participants' (Morgan *et al.*, 2008, p. 8). A definition like this has three basic points (Kartchner and Gerson, 2014, p. 146); first, escalation happens in the context of an ongoing conflict, second, the threshold that is crossed is dependent on the adversary's perception, and third, this means that the consequences of an act of escalation cannot be reliably predicted. The motivations behind escalation can be unintentional or deliberate. *Inadvertent escalation* involves *intentional* acts which were unintentionally escalatory (Kartchner and Gerson, 2014, pp. 150–151), while *accidental escalation* involves *unintentional* acts of escalation; an act of escalation one did not intend for to happen. Actions then, can be intentionally escalatory, inadvertently so or accidental. An opponent may not interpret an intentionally escalatory act as such. On the other hand, an opponent could interpret an act which is *not* intended to cross a threshold, as escalation. It is this form of inadvertent escalation this thesis is concerned with.

2.2 The Escalation Process

The above definition of inadvertent escalation is in line with basic principles of strategic theory, and of the concept of strategy as a *dynamic*, process-oriented exercise between two or more parties. It also underlines the role of uncertainty in deterrence as the underlying mechanism underpinning it (Kartchner and Gerson, 2014, p. 147). There are two main theoretical strands of escalation. One side sees escalation as a process inherent to all wars that have a tendency to take on a life of its own, the other side as deliberate acts which can be controlled (Kartchner and Gerson, 2014, pp. 148–149). There is little reason to believe that escalation can always be controlled, and this thesis builds largely on the first approach. Schelling's (1966, p. 1-5, 34) notions of *threats that leave something to chance* and *diplomacy of violence* are built upon a merging of these two logics of escalation; an actor can deliberately exploit the possibility of conflict spinning out of control to coerce an opponent into submission (Kartchner and Gerson,

2014, p. 149). There is however an inherent chance of attempts like this failing – if there was no possibility of the conflict spinning out of control, the threat of it would be redundant. As a result, one can take actions which without intention cross the target's 'red line' – in other words, ending up with inadvertent escalation rather than achieving one's desired outcome. In a conflict involving emerging nuclear weapons states, the possibility of escalation generally – and more specifically inadvertent escalation – may be more likely.

First of all, because the relatively recent acquisition of nuclear weapons naturally mean they are less experienced with nuclear politics and have had fewer crises in which to draw lessons from. Secondly, the 'rogue' state label often applied to them indicate that they are perceived differently by other actors in the international system than their more established counterparts. As adversary perceptions matter, one can imagine their relationships to other – nuclear and non-nuclear – states are affected by this, which in turn would influence escalation dynamics between them. Posen (1991, pp. 19–22) suggests three mechanisms of escalation, namely the influence of the security dilemma on threat perceptions, how offensive preferences in doctrine and posture influence first-strike incentives, and how the 'fog of war' – borrowed from Clausewitzian strategic theory and concerning the difficulty of gathering and assessing information during military operations – create uncertainty and may exacerbate the former two.

2.3 Theories of Nuclear Deterrence

The term *deterrence* has its origin in the latin word *deterre* (Freedman, 2018, p. 4), meaning to frighten from, or frighten away. It is an act, or multiple ones related to each other, of persuasion (Freedman, 2018, p. 4), and usually thought of as a threat to punish the behaviour we wish to prevent. We want to scare someone into avoiding doing what they otherwise would have done. Although deterrence is part of our everyday lives, the stakes are arguably never as high as when the potential use of nuclear weapons is involved. Today, there are multiple nuclear powers with interrelated rivalries. They differ with regards to available resources and military balance, geographical size and technological capabilities, ideological foundations and domestic institutions, to name only a few.

Just the fact that there are more of them heighten the risk one will eventually put these weapons to use. Nuclear deterrence has inspired a vast scholarly literature, much of it stemming from

the era of the Cold War. It has been more common to analyse questions of nuclear deterrence with rationalist theories and game theory emphasising the calculations of costs and interests, and less so with Clausewitzian strategic theory emphasising uncertainty, the fog of war and the relationship between policy and military planning (Cimbala, 1991, pp. 2–3). The latter approach underpins this analysis, as the way these dynamics could influence threat perceptions – and ultimately the potential for fatal misunderstandings – deserve attention in our contemporary nuclear environment.

Strategic theory encompasses classical works of Clausewitz, Sun Tzu and others and concern itself with studying the relationship between political ends and the means to achieve them (Smith, 2011; Mahnken, 2019, pp. 57–60, 64–67). In this case, it relates to how nuclear powers use and plan to use nuclear weapons for purposes of achieving political objectives, which is usually understood to be deterrence. To do so, it must necessarily focus on the involved political actors as the unit of analysis; these can be states seen as a unitary actor, organisations, and individual decision-makers. Recent scholarship has shed light on how nuclear weapons may be serve a variety of different purposes for states in *addition* to security, to which the discussion will turn below. Strategic theory aims primarily at understanding the value systems and preferences of these political actors, namely their motivations and interest construction informing their objectives and their behaviour aimed at achieving them – based on influences of the strategic environment they operate in and the information available to them.

It assumes at least bounded rationality in these actors. In other words, the involved parties try to make accurate cost-benefit analyses and direct their limited resources to accomplished desired goals. This is not to say that they are 'perfectly efficient' like they would be in game theory models. Neither does it mean they will make the 'right' choices; a sound strategy can fail, and a bad strategy can succeed. It is a theory focused on the notion of a dynamic relationship with an adversary. It assumes that there are a minimum of two active participants involved, with clashing wills, and that these will and must consider one another's actions as they pursue their competing objectives. Unpredictability and chance open for unintended consequences, and each side's room for manoeuvre depends on the adversary. Finally, it assumes moral neutrality and concerns itself with the utility of actions – not because the first isn't important, but because it is an entirely different question.

In theory, successful deterrence would be when a threat is considered credible, and the adversary indeed decides that their desired objective would not be worth pursuing considering the costs of doing so. In contrast, should the enemy decide to push on and test our threat, it would constitute a deterrence failure. However, deterrence success and failure, and its efficiency, is not always straightforward to identify in practice. Today, it may be more challenging than ever with new actors who does not necessarily lend themselves so easily to logics of deterrence established during the Cold War.

Nuclear deterrence differs from conventional deterrence in the sense that a threat of nuclear use is 'incontestable' (Wirtz, 2018, pp. 59–61); the outcome of a nuclear strike can be relatively easily calculated and is almost impossible to defend. Schelling (1966, pp. 22–23) referred to this as the novelty of nuclear weapons and the reason states covet them; the unprecedented situation where enormous damage could be inflicted on an enemy before a military victory. Humans have brutalised and murdered one another throughout history. The difference the atomic bomb made was not *how much* damage one could do but how *fast* one could do it:

> Against defenceless people there is not much that nuclear weapons can do that cannot be done with an ice pick. And it would not have strained our Gross National Product to do it with ice picks. (Schelling, 1966, p. 19)

Bernard Brodie is by many considered the father of nuclear deterrence and was the first to point out the potential 'self-propelling escalatory effect' of nuclear weapons. Even though the main body of his work was written in the Cold War context, many of his insights are still highly relevant today. Brodie (1966, p. 26) contended that the probability of a surprise strategic attack turned smaller with the development of stronger retaliatory forces and measures in hardening, concealment and mobility. According to him, these physical changes nurtured a psychological change as well, where both the US and Soviet aspired to understand each other's motivations and modes of thinking better too.

The turn away from mutually assured destruction (MAD), in other words a disproportionate attack in response to limited aggression, was a matter of credibility (Brodie, 1966, pp. 26–28). Rather than threaten mutual suicide, a doctrine of flexibility and diverse options was adopted. This turn essentially switched focus from avoiding *wars* to avoiding *escalation* (Brodie, 1966, p. 29): "We have to leave to the opponent in his next move the choice of making the situation

more dangerous, or less so, though we can of course massively influence the choice he will make". At the same time, *strategic* stability may favour more limited use of tactical nuclear weapons (TNWs) (Brodie, 1966, p. 31), as both parties know the other will be cautious when faced with the prospect of full-scale nuclear war.

There are reasons to believe we should revisit these theories with emerging nuclear states in mind. The fact that multiple nuclear-armed actors must interact pose a risk of inadvertent escalation. Additionally, the emerging nuclear powers may pose challenges to central assumptions, like that of rationality; it is not given that actors share a basic level of risk-willingness or that they pursue similar goals and conceive of similar pathways to get there. To understand them and which principles of deterrence applies to them is of imperative importance.

2.4 Deterrence Theory and Emerging Nuclear Powers

An increasingly complex geostrategic landscape makes it: '…less clear how or which of these timeless principles [of strategic theory] apply in any given situation' (Kartchner and Gerson, 2014, p. 144). First, there is no disputing that the number of nuclear-armed states has increased since the Cold War. This must impact the way we think about nuclear strategy and deterrence. Second, there is now significant variation between existing and potential nuclear powers. Brodie (1966, p. 40) asserted that American policymakers should not have to worry overmuch about escalation to the nuclear threshold with an opponent whose capabilities were no match to theirs. Although sceptical of the term *accidental* escalation, Brodie (1966, pp. 53–54) was still open to escalation coming about as a result of miscalculation or unauthorized action (Brodie, 1966, pp. 53–54). However, recent scholarship on the most recent members of the nuclear club suggests that it is precisely those with less impressive capabilities who may opt for the most aggressive nuclear postures (Narang, 2015, p. 78).

2.4.1 The Perceived Utility of Nuclear Weapons

Sagan (1996) theorized that mainly have three motivations for nuclear acquisition. It can be for security, the most common explanation, for domestic reasons like organisational pressure, or for prestige and legitimacy. It seems reasonable to assume that if states differ with respect to

why they *develop* nuclear weapons, they may differ with respect to the when, where, how and why they would put them to use. In that line of reasoning, Bell (2015) has contributed to the literature on nuclear emboldenment by showing how nuclear weapons serve different functions as an instrument of foreign policy. He finds that states may show different forms of emboldenment, some inducing more risky behaviour than others. As leaders are not exempt from cognitive biases, Jervis (1976, p. xxvii) expect we will observe differences in behaviour and expressions between regimes whose perspectives on international politics are fundamentally at odds. This notion is echoed by Delpech (2012, p. 60); states could use the threat of nuclear weapons for the purpose of blackmailing its way to concessions or getting its will, and may be more comfortable flirting with the 'brink of war'. Worries have been raised that we may see more of this with the advent of 'unrestrained' nuclear powers in pursuit of absolute goals (Delpech, 2012, p. 57); the unwillingness to compromise could make escalation hard to stop once begun.

2.4.2 Available Choices for Nuclear Doctrine and Postures

In the course of nuclear proliferation, the two most recent members of the nuclear club – as well as those aspiring to acquire nuclear weapons in the future – are highly authoritarian regimes. When Pakistan became a nuclear power in 1998, many were concerned. Pakistani authorities have altered their nuclear strategy over time, and today adopted an asymmetric escalation nuclear posture which has proven itself highly effective against a conventionally stronger India (Narang, 2010, p. 39). In his typology of nuclear postures available to regional powers, Narang (2015, pp. 75–78) outlines three; the *catalytic* intended to inspire assistance from a patron state, *assured retaliation* directly deterring by threatening nuclear retaliation after sustaining initial damage, and lastly *asymmetric escalation* through first-use of nuclear weapons in response to a conventional or nuclear attack. The latter is the most aggressive option available and is assumed to heighten risks of inadvertent use (Narang, 2015, pp. 78–79), as it presupposes a certain level of pre-delegated authority in order to respond quickly. As we will see, North Korea's entrance onto the nuclear stage in 2006 sparked similar worries to those expressed regarding Pakistan.

In a recent article, Narang and Panda (2020) discuss the general risk of escalation with North Korea and its implications for deterrence postures of its adversaries. They point to how North

Korean nuclear strategy is premised on 'permanent brinkmanship' in peacetime and crisis in the form of constant threat of asymmetric conflict escalation (Narang and Panda, 2020, pp. 48–49). Few others have investigated this topic, and this thesis builds further on their work by systematically applying Posen's (1991) framework for an in-depth analysis of the factors which may influence escalation pressure for North Korea and other emerging nuclear weapons states.

2.4.3 The Rationalist, Universalist Assumption of Deterrence Theory

A key assumption in this thesis is that states differ with respect to: '…their own motivations and ambitions, […] perceptions of threat and preferred palate of responses' (Kartchner and Gerson, 2014, pp. 144–145). This departs from the standard realist assumption of the state as a unitary actor in a purely rational pursuit of preserving national security. Although it must be underscored that survival is obviously the central part of any state's strategy, it does open for the possibility that states may differ with regards to what constitutes national security, how they plan to achieve it, and what methods they deem most appropriate to further that goal. This includes variation in what role nuclear weapons play in producing such security for states (see for example Sagan, 1996, 2011; Narang, 2014; Saunders, 2019).

In turn, this has implications for deterrence (Delpech, 2012, pp. 54–55). Specifically, it affects *how* to deter actors who may not agree with the deterrer's conception of national interest or the most fruitful paths to attain it. The paradox – even irony – of the relationship between rationality and strategic theory is that *if* there is a chance your adversary is not acting under *your* definition of rationality, it is strategically unsound to plan as if they were. The assumption of at least bounded rationality is necessary for strategic theory. If there is no such thing as risk evaluation of costs and benefits, if humans act solely as social or emotional beings, expectations about their behaviour becomes close to impossible to predict – and we cannot trust that we perceive actions correctly either. Thus, this thesis assumes the parties are largely rational and aiming to be so. But as Delpech (2012, p. 54) notes, war may not be the most rational environment, and: 'As strategic thinkers have acknowledged since antiquity, in matters of war and peace, passions are at least as powerful as reason and calculation' (Delpech, 2012, p. 88).

The notion of rationality is often – if not always explicitly – tied to that of risk acceptance or risk willingness, what one could call 'a healthy fear of devastation' (Delpech, 2012, p. 18). Presumably actors can vary with respect to where on the spectrum of risk averse and prone to gambling they are (Delpech, 2012, pp. 58–59). The notion of nuclear brinkmanship, where one or both parties exploit the shared risk of war for coercive purposes (Cimbala, 1991, p. 7), seems increasingly risky with multiple and diverse players. This is closely connected to Schelling's (1966, p. 121) notion of the *threat that leaves something to chance*. Some have argued that new nuclear powers and proliferators are inherently risky and irresponsible, but as he describes it:

> "Brinkmanship" has few friends, "chicken" even fewer […]. There is, though, at least one good word to be said for threats that intentionally involve some loss of control or generation of "crisis". It is that this kind of threat may be more impersonal, more "external" to the participants; the threat becomes part of the environment rather than a test of will between two adversaries. The adversary may find it easier – less costly in prestige or self-respect – to back away from a risky situation […]. (Schelling, 1966, p. 121)

In this way, threats playing on an ambiguous outcome, are closely connected to the credibility problem (Delpech, 2012, p. 45); arguably, this is more relevant than ever as multiple, diverse nuclear weapons states have to interact with one another. Other actors will likely pay attention to when threats are issued for what, as well as whether and what kind of threats are delivered on.

Rationality in deterrence has usually been conceptualised with reference to Western culture (Delpech, 2012, p. 55), which limited understanding of adversaries in the past. It is hardly reasonable to expect this to ring any less true today. If we accept that what might be rational to one actor may seem like madness to another, and that there are multiple preferred pathways to and methods for achieving survival for a state – and that these assessments are made by people whose risk willingness and personalities differ – it opens up for multiple explanations and nuanced analysis.

2.4.4 Regime Type, Leadership and International Disputes

Jervis expects there to be significant differences between democracies and dictatorships in how they view international politics and in the images they hold of others, as: '…highly ideological

regimes will view the world through glasses tinted by their beliefs' (1976, p. xxvii). One could argue those 'tinted glasses' can be just as relevant to democracies as dictatorships. This it not the same as saying they are *irrational* per se, only that bounded rationality can incorporate that we do, in fact, as human beings, form our beliefs about how the world works in different environments and that this *may* factor into our decision-making processes. As leaders are also human beings, they are prone to the same cognitive limitations as others. There is no automaticity involved in leaders having the same conception of security either; for some regimes it is the survival of the state, for others its citizens, and yet others its regime. Leadership has played a decisive role in nuclear crises of the past (Delpech, 2012, p. 87), and there is no indication that will matter less in the future.

These cognitive limitations are many and many-faceted, which is the reason Jervis (1976, p. xxii) does not claim a full and strict *theory* of misperceptions. Rather, we can use his framework as an analytical tool which recognizes and accepts that there is a 'human factor' even in the most rational and 'realist' realms of international politics. These mechanisms may influence decision-making by reinforcing misperceptions and limiting rationality. The three main factors involved when humans form perceptions are beliefs, images and intentions. The main issue, and 'missing link' in existing models like the deterrence model and the spiral model, rests with the difficulties of perceiving each other's intentions. This will in turn affect whether the use of force will be effective or self-defeating.

Caprioli and Trumbore (2003) conceptualised 'rogue' states based on their domestic patterns of behaviour alone, namely systematic and harsh internal repression. Their findings indicated that a rogue state can be identified prior to displays of violence on the international political arena (Caprioli and Trumbore, 2003, pp. 378–379); those scoring high on internal political repression and severe discrimination of their own citizens are more likely to resort to aggressive measures in their external relations too. They did find a correlation between domestic state repression and the likelihood of use of force in interstate disputes (Caprioli and Trumbore, 2003, p. 397). The reasoning, simply put, is that a propensity for violent dispute resolution internally will transfer to state-to-state relations too (Caprioli and Trumbore, 2003, pp. 379–381). What they did not investigate was the likelihood of these states initiating or getting involved in interstate disputes. Weeks (2012) later shed light on this by focusing on the domestic drivers of international dispute initiation. She finds that leaders of *personalistic*

dictatorships are more likely to initiate conflicts, and solve disputes with violence, than other types of autocracies and democracies (Weeks, 2012, p. 338-342).

2.4.5 Threat Perceptions and Difficulty of Interpreting Adversary Intentions

For a time, matters of nuclear weapons remained in the world of rationality and correct information about the adversary. However, Jervis' (1976, pp. xv–xvii) merging of strategic studies and insights from psychology shed light on when and why states perceive threats. Political decision-making and choices are always partly a result of leaders' perception of their environment, and political science had underplayed how difficult it is to perceive others' actions and intentions accurately. Nuclear weapons are not an arena exempt from cognitive bias and confirmation bias, and is just as much subject to basic human nature and psychology as any other field of politics (Jervis, 1976, p. xxxvii). In other words, it is not exempt from misperception and miscalculation of adversary intentions and motives or acting in accordance with those expectations.

Cognitive consistency is a tendency to interpret other's actions as consistent with established patterns, either for rational or irrational reasons (Jervis, 1976, p. 117-124); we assimilate information in the context of expected patterns of behaviour in the other to simplify a complex environment, which can lead to missing information influencing threat perceptions. Sometimes we also do this because we have a desire for consistency – meaning we can dismiss obvious evidence contrary to our expectations, and hold on to perceptions which do not align with reality. These expectations create predispositions when humans assess information they have access to (Jervis, 1976, pp. 143–145), which in turn influence what we notice – and what we do not notice – about the other. Should one fail to notice how these pre-existing beliefs can cause cognitive distortions and result in decisions founded on misperceptions (Jervis, 1976, pp. 172–181, 187-203), we run the risk of cognitive closure and incomplete pictures of adversary intentions.

Human cognition is influenced by recent events (Jervis, 1976, p. 203), as well as first-hand experiences, formative experiences in our early life and events which profoundly impacted on society like wars, revolutions or organisational changes (Jervis, 1976, p. 239, 249, 262-266), which can impact on our ability to accept change and new information contrary to our beliefs

(Jervis, 1976, pp. 308–310). Some common misperceptions are as follows (Jervis, 1976, p. 319, 343-354,); we see other's actions as premediated and afford them little room for accidents, and overestimate our own importance and target value while underestimating how threatening our own behaviour could be for the adversary with the logic that "because *I* know that my intentions are not hostile, it should be *obvious* to my adversary too". When confronted with facts that our beliefs are wrong it can cause cognitive dissonance (Jervis, 1976, pp. 382–392), with the result that we experience discomfort and look for new justifications for continuing our beliefs and refusing failure – particularly if changing our mind incurs very high costs.

The influence of psychology on political science opened for novel explanations and recognition strict assumptions of rationality were difficult to apply. If we accept that even leaders – who presumably strive to avoid these cognitive and very human pitfalls – fall prey to them at times when they assess their adversaries, we also accept that they are liable to misperceive one another's intentions and that we are more likely to do so in an ongoing crisis. Different conceptions of what purposes nuclear weapons can serve, doctrines relying on a nuclear first-strike, that humans are rational within boundaries *and* that these boundaries can differ, as well as deep-seated political and ideological divides, influence perceptions of adversaries. These are likely to influence the mechanisms Posen's (1991, pp. 12–23) suggest as drivers of escalation pressure. The emerging nuclear weapons states seem to be poorly understood by their adversaries and vice-versa. This is partly a result of limited strategic communication between them and their adversaries, which is crucial in the case of a nuclear crisis (Delpech, 2012, p. 59). This, and the factors discussed above, in turn heightens the likelihood of misperceptions and subsequently the potential for inadvertent escalation.

2.5 Posen's Three Paths to Inadvertent Escalation and Deterrence Failure

In his work on inadvertent escalation, Posen (1991, p. 2) suggests that the problems he outlines would 'loom especially large' for future medium-sized and small nuclear powers due to their constraints on building survivable nuclear forces. Posen (1991, pp. 12–23) developed a model of inadvertent escalation, in which he emphasised some key factors creating and fuelling its presence in relationships between nuclear weapons states. Although written right after the fall of the Berlin Wall, and using the U.S.-Russia relationship and Cold War superpower competition as empirical material, he foreshadows explicitly:

> […] military doctrines and force postures tend to change slowly, and many of the problems outlined in this book will likely remain in some form for years to come. Even if these issues diminish in importance in the U.S.-Soviet military relationship, the spread of weapons of mass destruction to regional conflicts suggests they will emerge in a slightly different, but arguably even more frightening guise. (Posen, 1991, p. xi)

There are three different mechanisms through which inadvertent escalation could happen, namely structural conditions of the security environment, the propensity for offensive acts often found in military organisations, and lastly the famous 'fog of war'. Posen (1991, p. 24) names them *escalatory pressures*, and each of them are likely to impact conflict involving emerging nuclear weapons states in particular ways. The key question of when a state would risk escalation to the nuclear level is not whether the target state expects to lose *all* its nuclear capabilities, but rather whether its nuclear capability would be degraded to a level considered unacceptable, in other words *past some threshold it considers vital to its security* (Talmadge, 2017, p. 58). This thesis aims to investigate how these mechanisms make themselves apparent for *emerging nuclear states*. The chosen case of study is North Korea, as it is relatively understudied and could carry implications for a future Iran should it acquire the bomb. A further discussion of case selection follows in the next chapter.

2.5.1 The Security Dilemma

The structure of the international system is one of anarchy. Since World War II, it has gone from one characterized by multipolarity, to bipolarity, to unipolarity and arguably is again on the path towards multipolarity (Waltz, 2013, p. 4); in the anarchic environment of the international system, self-help is the principle of action to achieve security. The military balance between adversaries influences threat perceptions of states and the dynamic between them. All states face the dilemma that actions and measures they take to defend themselves, in other words preparations in the case war breaks out, is hard to distinguish from actions signalling an *intent* to go to war. The Catch-22 is that the costs of *not* preparing for attack by another state could mean the end of one's existence, and conversely, preparing for war could provoke an adversary to launch a preventive or pre-emptive war in self-defence. This is commonly referred to as the concept of the security dilemma and has been dominant in the debates on nuclear proliferation and escalation.

The security dilemma refers to the fact that defensive measures one state takes in order to defend itself may be perceived as offensive to their adversary (Posen, 1991, p. 12); as states cannot rely on a higher authority to protect them, they are usually sceptical towards one another's intentions and prone to worst-case assumptions. When states feel threatened and correspondingly insecure, they tend to compensate. This may produce counterproductive effects, as in the effort of increasing your own security, you may in fact decrease it. Then again, if you have perceived the threat correctly, you *should* probably initiate defensive measures. This concept can be utilised both before and after a conflict has broken out (Posen, 1991, p. 13), as the dynamics remain similar regardless of whether the context is one of peace, crisis or war. Posen (1991, p. 13) points to the inherent *inadvertent* nature of the security dilemma: states do not intend their defensive actions to be anything but defensive, but the key lies with its adversary's perception of them as such. This can lead to: '…spirals of mutual hostility and competitive military preparations' (Posen, 1991, p. 13).

Posen's (1991, p. 3) main concern is of large-scale conventional operations which produce patterns of damage or threat to key elements of the adversary's nuclear capabilities, particularly to a state's second-strike capabilities. However, in today's environment, where a few of the new and aspiring members of the nuclear club have small arsenals and limited second-strike capability – or none at all – it seems reasonable to assume threats to their first-strike capabilities would seem just as threatening: 'Among small nuclear powers, this [ie. plausible response: delegated authority and less civilian control] could be particularly dangerous, since their early warning and command and control apparatuses are likely to be less redundant and resilient than those found today in the medium-sized and great powers' (Posen, 1991, p. 3). Conventional hostilities do not need to be large-scale in order to threaten emerging nuclear powers – in fact, crisis may be enough to induce escalation.

The security dilemma drives inadvertent escalation because both sides have nuclear forces which they see as a vital interest and which could be threatened by the other's conventional military action (Posen, 1991, pp. 12–14), and what would amount to offensive action in the perspective of nuclear warfare by the targeted state may not be easily foreseen. In turn, particularly because tensions are higher when conventional conflict is underway or already begun, harsh reactions from the adversary would likely be interpreted as increased aggression rather than defensively motivated action.

In his analysis, Posen (1991, pp. 15–16) discusses how geography could impact escalatory pressures between the U.S. and Soviet Union during the Cold War. As the U.S. was physically much farther from the theatre of war than the Soviet Union, he suggested this asymmetry could cause its own kind of escalation pressure. Any conventional conflict in that case would have taken place on the European continent, meaning weapons deployments and joint U.S.-NATO conventional operations could have threatened Soviet strategic nuclear forces and their retaliatory second-strike capabilities. Conventional operations could have been perceived by Soviet commanders as either a cover for attacks against their nuclear forces or camouflage of a surprise nuclear attack. As American leadership did not face a similar geographical problem, he worried they could underestimate the stress conventional operations would place on Soviet strategic nuclear forces and how proximity to the theatre influence threat perceptions.

To assess how the security dilemma might influence the risk of inadvertent nuclear escalation during a conventional conflict between North Korea versus the U.S. and South Korea, this analysis centres primarily on the military balance between them and observable perceptions of the adversary (Montgomery, 2006, p. 151), and some reflections on how geography may influence these. Indicators of the military balance can be empirically observed through military capabilities and adversary perceptions. The security dilemma essentially captures the structural conditions the adversaries find themselves in (Posen, 1991, pp. 12–16).

2.5.2 The Offensive Inclination of the Military

According to Posen (1991, pp. 16–19), a second driver of escalation pressure is the offensive inclination of the military and these organisations' quest for autonomy in military affairs. It stems from organisational theory; particularly military organisations' proclivity for offensive action and resistance towards civilian meddling in operational planning and execution (Posen, 1991, pp. 16–19). Military organisations have a: '…generalised tendency to prefer offensive doctrines and force postures long in advance of war' (Posen, 1991, p. 16). To reconsider them might require considerable outside pressure, which civilian authorities are poorly placed to apply for two reasons (Posen, 1991, p. 17); first, because civilian leadership do not necessarily want to plan for warfare during peacetime, and second, because they do not have intimate knowledge of the 'intricacies of military planning'.

Thus, the offensive inclination is here conceptualised more as a general offensive inclination observable in the parties' doctrine, force posture and preferred methods of warfighting. These are seen as an expression of political and military leadership preferences. Thus we concern ourselves here with what Talmadge (2017, pp. 59) names the *military-technical drivers of wartime escalation risk*, which includes official statements from the parties to the conflict, knowledge about their doctrines, force postures and campaign plans, as well as experiences from past conventional campaigns, military exercises and potential targets with nuclear implications. There are some clear obstacles in assessing this, however. Information about ongoing civilian-military relations and deliberations are not easily accessible to the public even in relatively transparent democracies like the U.S. and South Korea. In a secretive state like North Korea, they are simply unavailable. Targets include nuclear weapons and their components, delivery platforms, and the conventional support structure surrounding nuclear weapons (Talmadge, 2017, pp. 59–60).

Talmadge (2017, p. 60) outlines the following characteristics of the target state's military which increase the likelihood of conventional operations threatening nuclear infrastructure; nuclear and conventional weapons are located near each other, heavy reliance on dual-use platforms or conventional forces to protect and support nuclear forces, or infrastructure of nuclear weapons or related infrastructure based close to conventional battlefields.

2.5.3 The Fog of War

The last mechanism, the fog of war, concerns the parties' ability to correctly interpret the military-technical realities as well as each other's intentions and motivations in a situation of ongoing crises or conventional hostilities (Posen, 1991, p. 19). In other words, it constitutes an additional source of target state insecurity which is raised during crises or ongoing conventional operations (Talmadge, 2017, p. 64). Theoretically, it creates escalatory pressure in three ways (Posen, 1991, pp. 20); either by itself, or through exacerbating the other two drivers as: '…it makes control of military operations under way difficult for high-level policymakers, [and] creates conditions that heightens fears that an adversary can mount a successful surprise attack'.

It makes missing or ambiguous information threatening (Talmadge, 2017, p. 63), and feeds escalation pressure by interfering with the target state's ability to evaluate the military-technical elements and opponent's motives correctly. In the case hostilities have already broken out, the fog of war will make it hard for a state to reassure itself (Talmadge, 2017, pp. 62–63), and may lead it to radically reassess its opponents' intentions and motivations and expect worst-case scenarios as a result. Escalation pressure stemming from the fog of war will here be operationalized as capabilities compromising command, control, communications and computer (C4) systems and intelligence, surveillance and reconnaissance (ISR) capabilities.

Each of the mechanisms above can produce escalation in a conflict involving emerging nuclear weapons states but may not manifest exactly the same way they did for the superpowers. The following chapter details the methods and research design chosen for investigating if and how Posen's (1991) three mechanisms of escalation pressure affect adversaries which include emerging nuclear weapons states, namely the relationship between North Korea and the U.S. and South Korea.

Chapter 3

Methods and Research Design

This chapter presents the research design of this paper and discuss strengths and weaknesses of the methodological choices made with regards to the research process, case selection, operationalisation, data and source material. The main purpose of this study is to contribute with a piece of the puzzle in understanding how a conventional military confrontation between an emerging nuclear power, North Korea, and its main adversaries, the U.S. and South Korea, could escalate into a situation where atomic weapons are detonated for the first time since 1945.

The theoretical framework developed by Posen (1991), and further build on by Talmadge (2017), is well suited as an analytical framework for assessing the potential for inadvertent nuclear escalation. One could object that studying something that has not yet come to pass – inadvertent nuclear escalation – is hypothetical and must be based on a purely speculative assessment. However, by focusing on factors which increase uncertainty and influence threat perceptions, as well as paying attention to the involved parties' incentives for striking first and early on, we can establish the presence and assess the severity of escalation risk even if nuclear escalation itself is absent. It is arguably too important a matter for scholars to avoid it as an object of study. The dependent variable in question is *escalation pressure*, which is assumed to vary in intensity based on the severity of the security dilemma, the offensive inclination and the fog of war. The research question this paper seeks to answer is the following: *Why might escalatory pressure and subsequently the risk of inadvertent escalation be more intense for emerging nuclear weapons states?*

3.1 Case Selection

As previously mentioned, North Korea is often described by Western policy-makers and scholars in unfavourable terms denoting a sense it is a state out of control: 'rogue' (U.S. government in Smith, 2006), loathable and 'evil' (Bush in Smith, 2006, p. 86), an 'outpost of tyranny' (Rice in Smith, 2006, p. 84), as 'unpredictable' and a 'lawless pirate' (Delpech, 2012,

pp. 16, 12). This indicates a level of hostility between North Korea and its adversaries that is quite severe.

An assumption behind the choice of case here is that this level of hostility influences North Korea's perceived advantages of pre-emption in any kind of conflict between them. There is a cloud of uncertainty surrounding emerging nuclear powers and limited understanding as to how to deter an actor like North Korea, indicated by regular crises and military competition. Negotiations with the country has been marred by stalemates, deadlock and failure to reach compromises and settlements, indicating poor understanding between the parties and inability to solve problems with diplomacy. There is an enormous disparity in the military balance between the DPRK and its main, allied rivals the U.S. and South Korea. All the while, this 'small nation unable to feed its own people' has managed to grow into a nuclear power despite powerful actors' efforts to stop it (Delpech, 2012, pp. 102–103). Continued efforts at negotiations, the occurrence of intermittent crises and a potential for future military confrontation, combined with little consensus on the most fruitful approach to any of these matters, make this case a relevant unit worthy of scholarly attention.

North Korea seems to present a puzzle in many ways, especially with respect to how it is perceived, what motivates the behaviour of its leadership and how said leadership may be expected to act in the future. Questions regarding the drivers of escalation are ultimately questions of motivations, intentions, perceptions and choices. The literature on escalation has been updated and applied to today's most powerful nuclear states. Some have collected and reviewed theoretical contributions mostly developed during the Cold War context (Kartchner and Gerson, 2014), others refined and adapted seminal contributions to our contemporary nuclear environment (Talmadge, 2017).

Theoretical contributions on regional nuclear powers have enabled understanding of what doctrinal choices are open to these actors and why they select one over the other (Narang, 2010, 2014, 2015). As for understanding the so-called 'rogue' actors and their leaders, a large literature on regime type has emerged. They have contributed with insights about drivers and motivations behind different types of autocratic leaders (Weeks, 2012; Way and Weeks, 2014). Recent scholarship has aimed at explaining the role of nuclear weapons in Kim Jong Un's strategy (Panda, 2020), in essence what purpose they serve for the regime. Summarized, North

Korea as a nuclear state poses a range of questions and intellectual challenges which scholars should aim to answer for both scholarly and practical reasons.

The aim of this thesis is to build further on previous efforts, by contributing with a piece of the puzzle concerning under what conditions and for what reasons North Korea might stumble across or inadvertently be provoked into crossing the nuclear threshold. How North Korea perceives and acts towards its adversaries, and how its adversaries act and perceive it, influence not only whether military conflict could break out but whether such a confrontation could involve the use of nuclear weapons. Levy (2008, p. 7) considers intrinsic interest alone to be an insufficient criterion for case selection. The fact that a state is nuclear-armed, with corresponding ability to wreak global havoc and take millions of innocent civilian lives in the process, justifies close study of each of those – to date – nine actors. Investigating the conditions which could influence a North Korean decision to employ nuclear weapons in a conventional clash with the U.S. and South Korea is just that.

Van Evera (1997, pp. 77–78) considers intrinsic value to be one of several valid reasons for the close study of one case, although it should be combined with other criteria. Another is its relevance to policy prescription (Van Evera, 1997, p. 83), because inferences drawn in a case more like another is more likely to operate in that second case. As emerging nuclear weapons states like North Korea and Iran seem to be causing policy-makers headaches studying them specifically is important, as studies on global powers may not yield as reliable prescriptions (Van Evera, 1997, p. 84). Thus, a secondary aim of this study has been exploratory in nature in line with expected purposes of case studies (Gerring, 2017, p. 23), which is further discussed below in the section on research design.

This research project started out with a general hypothesis that emerging nuclear weapons states differ with regards to their nuclear and conventional capabilities compared with established nuclear powers. Additionally, poor communication between them and their adversaries, and the labelling of them as ‘rogue’ and uncontrollable actors, suggested that hitherto unexplored factors may be of significance in explaining their behaviour in international politics. Revisiting theory on escalation dynamics developed with the Cold War super-powers in mind is necessary, both to expand on existing knowledge and contribute with contemporary insight.

A selection criterion suggested by Van Evera (1997, p. 86) and Seawright and Gerring (2008, pp. 301–303) makes itself relevant here; North Korea seemed in the preliminary research phase to exhibit very high values on the dependent variable. This arguably tilts it towards a potential outlier case (Van Evera, 1997, p. 86), although not the strictly *ideal* type. One can expect the theory to have explanatory power, though the theory does not detail the causal mechanisms at play with regional rather than global powers, nor emerging nuclear states as opposed to superpower dynamics. Through thorough analysis it should be possible to explore if and why the values are particularly high in this case, and whether there could be additional explanatory factors at play.

This specific case was selected for in-depth analysis for the reason it may offer insights that could be relevant for other new members of the 'nuclear club', like Pakistan, or for future potential members, like Iran. According to Van Evera (1997, p. 78), case selection should correspond with the 'stage of the inquiry'. As investigations into this topic must try to *infer* theory or *test* it, one could argue considerations of *internal validity* are more pressing than including additional cases for the purposes of testing the theory's range and achieving *external validity*. Narang (2010, 2014) has conducted in-depth analysis of Pakistani nuclear posture and its implications for South-Asian stability. He has also studied the likely postures of emerging nuclear powers like North Korea and Iran (Narang, 2015), and convincingly argues these states face constraints and experiences of their environment differently than global nuclear powers.

Two common features of these states are that their nuclear weapons programs were initiated to offset conventionally much stronger adversaries, and all find themselves in intensely hostile security environments. All of them have ongoing military disputes with geographically proximate rivals. In addition, the states who either recently acquired or have ongoing nuclear weapons programs are authoritarian regimes and face economic struggles, with ongoing or potential internal instability as a result. Some of these characteristics are shared with other nuclear weapons states, but others are uniquely theirs. However, their possible implications for nuclear escalation have not yet been subject to structured, academic analysis.

Finally, lack of data richness may be thought of as a reason to avoid the investigation of a case (Van Evera, 1997, pp. 86–87). As I discuss in more depth in the section on data below, there are multiple challenges related to the empirical material this study utilizes. However, despite the limits it places on drawing conclusive inferences, one could argue that using the –

admittedly limited – data supply in an attempt at understanding the mechanisms of interest can still be of value and contribute to useful knowledge. Not all knowledge in this world is *certain* and *unique* but it is a matter of degree (Van Evera, 1997, pp. 30–33).

Nevertheless, it is arguably better to contribute with suggested explanations and be appropriately humble about them, rather than to entirely avoid studying interesting social phenomena. Most predictions we deal with in the social sciences are so-called *straw-in-the-wind tests* and are inconclusive (Van Evera, 1997, p. 32); they provide neither direct evidence for or against a theory's predictions and cannot themselves be decisive. Instead, they are part of a 'bigger picture', where multiple scholarly works make up the 'total balance of evidence'. In other words, a number of studies by different scholars of different backgrounds and perspectives could alleviate this problem. The implication for this study is that generalisations to other emerging nuclear weapons states are tentative at best and theoretical only, provided the data is sufficiently reliable and the inferences drawn here are internally valid.

3.2 The Case Study: Ideographic and Theory-Guided

According to Gerring's (2017, p. 27-28) definition of a case study, it is an intensive investigation of a single case or a few cases of some phenomenon delimited in time and space, of supposed theoretical significance – ideally then, it should 'shed light on a larger population of cases'. The limits on generalisability here will not be underplayed; a study of a single case is not appropriate for anything but tentative conclusions at best, which is a theme running through the following discussion. Nevertheless, the limited universe of country units when it comes to nuclear states place some inherent restrictions case selection, and the universe of *emerging nuclear weapons states* is even smaller.

These inherent constraints inform the need of a range of small-n analyses upon which to build for quantitative studies; there is a symbiotic relationship between these research forms, not a competition, and thorough case studies can help future quantitative studies with internal validity. The research design deemed most appropriate for this study is what mostly resembles an *ideographic case-study* of which: 'The aim is to describe, explain, interpret, and/or understand a single case' (Levy, 2008, p. 4). The scope of this paper is mostly limited to explain the case of North Korea and escalation pressure stemming from its interaction with the U.S.

and South Korea. The latter two function as 'adjacent units' (Gerring, 2004, p. 344), as the North Korean experience of escalation pressure and its underlying dynamics is necessarily dependent upon interaction with the U.S. and South Korea.

The units of analysis here is, in accordance with the principles of strategic theory outlined in the previous chapter, state actors. Formally, they are unitary and analysed primarily at the national level. That is where nuclear-relevant decision-making and foreign policy takes place. This study nevertheless recognise that the policies of these countries is primarily a reflection of the leadership's preferences, and so individual-level explanations mingle with country-level explanations. This is particularly true of North Korea, whose regime is peculiar in a global context. One must assume that most of the 'country's' behaviour is a mirror image of their Supreme Leader Kim Jong Un's behaviour. When appropriate, it is analysed as such. The peculiar characteristics of the DPRK are the main reason for selecting an ideographic approach in this study. The trade-off between generalisation and nuance, or external and internal validity, is a permanent feature of scientific research (Gerring, 2017, pp. 48–49). Considering the very limited universe of cases when it comes to emerging nuclear weapons states, one might make the argument that generalisations would be weak and that studies with strong internal validity may offer just as much scholarly value. Detecting covariance on key variables is a necessity in quantitative studies, which require a minimum of units and observations which is hard to achieve with this class in early stages of research.

Worries about how newly emerged nuclear powers would act compared with more established nuclear powers inspired this investigation. Studying how the nuclear-relevant choices of these and dynamics with their adversaries is important for both intrinsic reasons and for assessing the dangers of future proliferation. How states like these experience pressures to escalate should also have implications for foreign policies of their adversaries and inform efforts of diplomatic strategies. It seems to be generally assumed that these states are escalation risks due to their 'unreliable and irresponsible' conduct (Delpech, 2012, p. 58), and that they may experience first-use incentives and so-called 'use-or-lose' pressures. However, exactly *how* these pressures impact on the risk of escalation has so far received attention only by a few scholars.

How these pressures interact with other relevant variables and may influence interaction dynamics in a situation of ongoing conflict has not yet been subject to in-depth investigation.

Halperin and Heath (2020, p. 167) consider small-n studies to be particularly useful when uncovering causal paths and mechanisms and for the *assessment of specific mechanisms* in existing theories. A research design like the one outlined here should be able to shed light on *how* Posen's theory operates in a contemporary case of which it was not developed for. In a way, this study offers what Van Evera (1997, p. 87) calls a previously omitted type of test. That is the basis of the formulation of the research question this thesis aims to answer: *Why might escalatory pressure and subsequently the risk of inadvertent escalation be more intense for emerging nuclear weapons states?* The close interaction of theory and evidence also strengthens internal validity provided the analysis is structured and focused.

An alternative approach to answer the research question would have been a comparative design with another emerging nuclear weapons state (Seawright and Gerring, 2008, pp. 304–306); it would offer controls the case study approach lacks, and thus strengthen the external validity of inferences made. Comparing North Korea and Pakistan would have been the closest one could come to a most similar design. Despite facing an arguably similar security environment and preference of nuclear doctrine and posture, they also differ on important factors, which would make it difficult to isolate the independent variable of interest.

If one follows the logic that hypotheses and theoretical predictions derived from any study should be further tested on a *different* case (Van Evera, 1997, pp. 87–88), a comparative strategy using Pakistan and North Korea in this study would leave just one future, hypothetical case on which to test them in the future – Iran. In the early stages of this research, an approach comparing North Korea and Iran was considered, where the latter would serve as a hypothetical counterfactual. However, the caveats of dealing with a case purely on hypothetical basis proved to be less of a strength and more of a speculative endeavour. Comparing North Korea with India could have served the purposes of a most different design, but they do not seem to covary on the dependent variable, diminishing the value of it as a fruitful approach in this study.

Levy (Levy, 2008, pp. 4–5) distinguishes between two types of idiographic case studies, namely the *inductive* and the *theory-guided*. This study is firmly placed in the second category, as the variables of interest –the security dilemma, offensive inclination and the fog of war – are theoretically expected to influence both the presence and values of the dependent variable, escalation pressure. Despite not having chosen a comparative design, I nevertheless aim for a *structured, focused comparison* (George and Bennett, 2005, pp. 67); by asking general

questions in line with the research objective and focusing it by looking only at certain aspects of the case, the hope is that a similar study can be conducted on additional cases, like Pakistan. In fact, analysing phenomena like deterrence was the inspiration for the development of this approach in order to enable systematic comparison and cumulation of findings over time (George and Bennett, 2005, pp. 67–68), instead of policy-makers having to rely on historical analogies detached from broader theory when new events and cases presented themselves. If an analysis of Pakistan and Iran were to be conducted with the same method later, they might together contribute to generate new theoretical predictions and practical knowledge valuable for policymakers.

My approach borrows elements from hypothesis-generation (Levy, 2008, pp. 5–6). This is in line with Posen's expectation that future regional nuclear powers with smaller arsenals will experience escalation pressure differently than the superpowers of the Cold War (Posen, 1991, p. xi). Levy (2008, p. 5) emphasises the case study's potential contributions to theory construction. Panda (2020, p. 77) argues that understanding North Korean intentions is critical, though unfortunately 'not particularly in vogue' within U.S. and allied governments. He attributes this lack of understanding North Korea on its own terms because of its image as 'an obsessively secretive and unknowable state' (Panda, 2020, p. 77). Arguably this logic would apply to Iran too.

To study emerging nuclear weapons states is important to assess whether previous theoretical propositions apply to them. Theory therefore serves a twofold purpose in this study; it is applied to evaluate the presence and value of its independent variables, and it is revisited for the purpose of evaluation of additional exploratory factors. An assumption which underpins this logic is that we are seeing, and will in the future see, proliferators of a different calibration than those of the past. Nuclear weapons have to an extent gone from being a weapon of the most powerful, to a weapon for the weak – admittedly those with resources and will enough, as well as certain stamina with respect to international sanctions, to develop them.

Other causal explanations than those presented here may exist (George and Bennett, 2005, p. 215), and further research will hopefully solve problems of equifinality which have not made themselves evident to me during the course of this project. The scope of this study is limited to evaluating the presence of the variables dictated by Posen (1991), and to question what factors influence the value of them. Talmadge (2017, p. 62) claims that: 'Ultimately, the upward curve

of escalatory pressure is likely to look more exponential than linear as the various military-technical indicators of a possible counterforce campaign multiply'. This is echoed by Hersman's (2020, p. 93) notion of escalation *wormholes* where: 'Holes may suddenly open in the fabric of deterrence through which competing states could inadvertently enter and suddenly traverse between sub-conventional and strategic levels of conflict in accelerated and decidedly non-linear ways'. She contends that a more complex geostrategic landscape pose severe challenges to previous notions of escalation as a controllable process, with implications for crisis management, arms control and deterrence (Hersman, 2020, p. 94). The context matters and the target state's, in this case North Korea's, perception of interaction patterns will be decisive in a decision to escalate to nuclear use.

3.3 Data: Sources and Their Availability

Selecting North Korea as a case for investigation pose significant challenges with respect to data obtainability, language, types of available sources and more. In this section, I will discuss challenges associated with all the empirical material used in this study. Most of these reflections concern limitations and biases, and are quite intuitive but necessary to discuss in order to clarify how the data has been treated and the implications for conclusions drawn later. For all researchers, the Covid-19 pandemic has necessitated an approach which could be conducted from home the last year. The option of fieldwork in North Korea was never really present due to the regime's restrictions on entering the country, which would have placed constrictions on primary data collection regardless. However, a follow-up study may include interviews or field observations in the U.S. or South Korea depending on access to relevant sources.

I have relied solely on the qualitative collection of written and accessible sources, most of them secondary. The data utilized has thus consisted of relevant books and research articles, in addition to a range of media articles, including news and commentaries. Reports on capabilities and weapons developments are largely based on U.S. intelligence. The information needed to answer the research question is hardly accessible elsewhere. It requires intelligence, surveillance and reconnaissance capabilities and enormous resources which a student does not have. However, there is a great deal of high-quality secondary literature which has had access to sources I could not dream of reaching. These are obviously of value although they come

with caveats. Additionally, the advent of the internet has greatly expanded access to open-source intelligence (OSINT), like satellite-imagery, open-source databases and digital media. Knowledge on matters of national interest, like nuclear weapons, that was previously inaccessible to the public are now open to analysis by those who do not have direct connections with key individuals in high-level government or military positions. One can argue this is a healthy development, as it allows for analysis from different perspectives and lenses.

Arguably, the most fundamental challenge with secondary analysis is that no analysis is entirely objective (Levy, 2008, p. 9); historians, social scientists, journalists, writers, and intelligence analysts alike are vulnerable to their own theoretical and political biases, which inform their conscious or unconscious decisions regarding what information to include and what to exclude. For a case study like this, which relies directly or indirectly – exclusively so – on the works of others, this has obvious implications. Inferences and conclusions made here may be affected by these biases. Attempts at reducing this risk has been made. First, where possible, several independent sources concerning the same events have been closely examined. This is especially relevant to the media sources, where several reports of the same events are available from different papers and perspectives. Potential evidence that has not been 'corroborated' by other sources has not been included in the analysis.

American intelligence offers invaluable evidence on known and suspected North Korean capabilities. However, I will assume these are tinted with political bias. Utilizing sources which data has been mined for the purposes of a political administration or military organisation is challenging and requires special attention from the researcher. There are inherent problems to this which can only be partially mitigated. To the extent possible, the same approach as above has been tried. However, as some of these reports provide the only available information on capabilities, critical examination has been the only tool available. Data that carries obvious political weight have not been included without making that explicit.

A similar though even more acute challenge concerns KCNA Watch, available through the research organisations NK News and NK Pro, which is an online database of translated documents from the North-Korean regime's formal channels of communication. They include all public government statements and newspaper articles from North Korean media. There is no reason to believe statements or news published by the central government, the Korean Central News Agency (KCNA) or any of the other available sources in this database are held

back. Nevertheless, the contents of them are vulnerable to literally being lost in translation, and not speaking the language I am in no position to judge whether that may be the case.

As North Korean public statements generally equate to propaganda, it is not obvious which messages are directed at externally and which are intended for the domestic audience. However, an assumption here is that these do offer valuable information if analysed with care of the context in which it appeared and relation to the additional evidence. To use this content to assess indicators for the security dilemma variable entails the risk of incorrect interpretation and erroneous inferences. Simultaneously, it would be an omission to exclude these sources on those grounds. Studying North Korean perceptions without using the only public information which might offer clues on their leadership's thinking, with regards to their adversaries and the role of their nuclear arsenal, would deprive the analysis of essential perspective.

Language limitations is also a general concern for all the sources, as it imposes constraints on which sources I can obtain empirical material from. The literature on which the entire thesis rests has an inherent Western bias, as the literature on deterrence and regime type mostly originates from Western sources. Again, aiming for critical examination and careful consideration of these biases in my own arguments provide the most thorough barrier to either type I or type II errors – respectively, falsely rejecting the null hypothesis and failing to reject a false null hypothesis – (Gerring, 2004, p. 41); case studies are more vulnerable to the first. In other words, investigating only one case with limited controls could lead to the conclusion that a causal relationship exists where it in fact does not. An upside of the exclusive use of publicly available data strengthens replicability of the study; any researcher wishing to reproduce the conclusions reached here or refine them should be able and is very welcome to do so.

Summarized, this study will suffer from a range of threats to internal and external validity of its conclusions, primarily stemming from challenges related to the use of secondary sources and data availability. The precautions taken here can only mitigate them to some extent. Critical reflection, humility in the treatment of data, and explicitly stating the assumptions on which conclusions are reached should provide some insurance valuable insights may be gained despite all these caveats and contingencies.

3.4 Methodology

The process of investigating how Posen's mechanisms seem to be producing escalation in this case have been quite straightforward. I began the preliminary research phase by constructing a timeline, establishing these actors' general relationship and trends within it since the end of the Korean War in 1953 and key developments in the North Korean nuclear trajectory. The decision to settle on a closer look at the last ten years rest on three reasons. The first is a both practical consideration and an assessment of what this thesis could contribute with; one must assume North Korea's foreign policy and external behaviour is an expression of its leadership, and the current head of state Kim Jong Un assumed power when his father fell ill around 2010. The historical relationship between the U.S. and South Korea and his father, Kim Il Sung, is already well established in the literature. What is of interest for future theory and policy is the era of Kim Jong Un. Second, in terms of key developments in military capabilities, much has happened the last ten years. These happen quickly and impact on the dynamics between the adversaries. What was relevant in 2006, when North Korea tested its first nuclear device, is not necessarily relevant now.

The research process began by 'casting the net wide', so to speak. The whole process has been a very dynamic one between theory and empirical material, constantly consulting one or the other along the way. Recent publications of scholarly literature and general searches for nuclear-relevant matters on CSIS, KCNA and American online media was the starting point. I proceeded to sort this material into the three mechanisms suggested by Posen (1991), and data saturation was a question of time and resources rather than a pre-selected point – constant updates and happenings have stood out as relevant along the way. While conducting a close qualitative analysis of the gathered material, I have selected the sources which stood out as most representative and the least politically biased when feasible. The process has been close to what Van Evera (1997, p. 69) refers to as the congruence method; looking for within-case correlation between the variable of study – escalation pressure – and other phenomena which plausibly seem to factor in when assessing the mechanisms behind the risk of inadvertent escalation.

I have studied the security dilemma by collecting information on the indicators of military balance, strategic objectives, and adversary perceptions between the U.S.-South Korea and

North Korea. For the first indicator, I have consulted historical accounts by scholars, and data from SIPRI, the CIA Factbook, the World Bank, as well as organisations like Arms Control Association and CSIS. Government documents and public statements, as well as scholarly articles on each party's strategic goals, have constituted the data for assessing the parties' strategic objectives. The former two which contain references to the adversary have also constituted part of the data for adversary perceptions, in addition to media sources containing either relevant information on the respective parties' perceptions and interaction, government officials' references to one the adversary, and media commentaries which indicate either parties' perception of each other. KCNA Watch is my main source of public statements from North Korea.

The indicators chosen to observe the offensive inclination has been the military doctrines and postures, and specific military capabilities, of each country and the allied posture of U.S.-RoK. Additionally, I have drawn on information from past military campaigns. Indications of offensive inclination has been observed through explicit emphasis on first-strike, incentives for first-strike and 'use-or-lose' pressures, emphasis on counterforce capabilities and rapid overwhelming of the enemy early on in a conflict situation. The data have constituted largely of publicly available academic research and intelligence reports by experts in the field, as well as publications by influential think tanks like RAND and organisations like NTI and CSIS, and historical accounts of past military campaigns.

For the fog of war variable, the indicators constitute C4ISR capabilities of the respective parties, mainly focused on the North Korean side of it. However, this discussion is largely theoretical due to the limited availability of empirical data, and so no conclusions are made on this matter. What data is used have been gathered from academic research on the matter, intelligence reports and various discussions by scholars on escalation scenarios for the Korean peninsula.

Chapter 4

Analysis: An Acute Security Dilemma

This analysis proceeds in four sections. The first three parts concern Posen's main mechanisms behind inadvertent escalation; respectively, the *security dilemma*, the *offensive inclination*, and the *fog of war*. Each part establishes their presence on the Korean peninsula and analyse how they are likely to contribute to escalation pressure for the North Korean regime. The fourth section presents a summary and general picture based on key findings in the first three chapters. It concludes that crisis stability on the Korean peninsula is fragile and considers some implications for deterrence of other emerging nuclear weapons states. A main concern is that animosity, distrust, and poor understanding between the parties may exacerbate escalatory pressures even further. The potential for inadvertent nuclear escalation on the Korean peninsula in a conventional clash between North Korea and a U.S.-South Korea alliance is far from trivial.

Theoretically, the security dilemma create escalation pressure through states' mistrust and scepticism of each other's intentions and motivations (Posen, 1991, pp. 14–15); their inability to decisively distinguish between the adversary's defensive and offensive measures lead to insecurity. In turn, states adopt worst case assumptions. If both sides would gain advantage by striking first and do so early, spirals of action-reaction which threaten nuclear-relevant infrastructure are more likely to trigger a nuclear response. This chapter considers how the security dilemma create escalation pressure on the Korean peninsula and discuss factors which could trigger North Korean nuclear first-use in the case of ongoing conventional operations.

4.1 Strategic Goals, Military Balance and a Persistent Security Dilemma

North Korea has established itself as a state defying all prophecies of its inevitable demise (Pollack, 2011, pp. 18–21); still relying on its guiding ideology *juche*, commonly translated as self-determination or self-reliance, it has developed an operational nuclear arsenal and sustained an unmatched level of military confrontation with its neighbour despite harsh

economic and societal deprivation. Both the North and the South would prefer a united Korea without the other side's leadership's existence. In other words, North Korea has had little reason to feel secure throughout the country's history: 'South of the DMZ, it faces an opponent twice its size in population, an order of magnitude wealthier, and long allied with the world's foremost military superpower, the United States (Panda, 2020, p. 77).

Key features of the adversaries in this constellation can be found in the CIA Factbook (Central Intelligence Agency, 2021a, 2021b, 2021c). One party consists of two sovereign and consolidated democracies with stable and world-leading economies currently at first and tenth place (The World Bank Group, 2021), pitted against a highly authoritarian state under strict sanctions resulting in a flailing economy. In fact, no two contiguous states in the world has a larger economic imbalance than North and South Korea (Pollack, 2011, p. 18), and after the Covid-19 pandemic North Korea's economy is worse than ever (Choe, 2021a). Their respective militaries reflect these realities; North-Korea is barely a match conventionally for its Southern neighbour, and certainly not for the U.S.

The stated American and South Korean strategic objective on the peninsula was and still is denuclearization of the DPRK (Kyodo News, 2021). However, the North has repeatedly clarified that it refuses 'unilateral denuclearization' (KCNA Watch, 2018). The U.S. and South Korea must therefore settle for the time being on containment and deterrence (Panda, 2020, p. 286). In 2013, the alliance declared a joint 'tailored deterrence' strategy vis-á-vis North Korea (Parrish, 2013), while calling for the North's complete abandonment of all nuclear-related activities. The strategy includes all U.S. military capabilities and a special focus on missile defence in order to 'detect, defend, deter and destroy' North Korean threats (Parrish, 2013). The South has continued to bolster its air and missile defence capabilities parallel to North Korean missile developments (Jeong, 2019a).

One must assume that the ultimate goal of North Korea's political strategy is the survival of the Kim family regime (Panda, 2020, p. 71); any and all military measures the state takes should be to further that objective. For Kim Jong Un, the guarantor for his regime is the development of a nuclear deterrent. If the North Korean leader could achieve stable deterrence with the U.S., it would force the latter to deal with North Korea as a nuclear power (Panda, 2020, pp. 75–76), which is the main purpose of Kim's 'treasured sword'. The North Korean regime's quest for nuclear weapons has likely provided the regime with deterrent power vis-á-vis its adversaries

by evening out the strategic balance between them and so inducing caution in U.S. and South Korean behaviour. However, it has also created a spiralling dynamic of increased hostility and development of military countermeasures.

Kim Jong Un finds himself in a situation placing exceptional demands on deterrence (Panda, 2020, p. 84), as he has to deter multiple actors both close to and far from home. He not only has to defend against his contiguous neighbour in the South and immediate surrounding area such as Japan and U.S. military presence on Guam, but also the American superpower itself on the other side of the globe. In addition, this is an enterprise he now largely must accomplish alone. North Korea's nuclear option is likely a reflection of the country's focus on self-reliance but also a certain paranoia and scepticism towards even its allies and patrons like Russia and China (Scobell and Chambers, 2009, p. 189). North Korea's relationship to China has withered with Kim Jong Un's nuclear development activity (Albert, 2019); despite a formalized mutual defence agreement from 1961 still standing, North Korea can no longer count on Beijing coming to its rescue in a military stand-off with the U.S. and South Korea.

January 10th 2016, the Pyongyang Times refers to what they call the American 'nuclear hit list' (KCNA Watch, 2016c), and the fact that the US is the only country ever to have used the atomic bomb in warfare. This document is a declassified nuclear target list from the Cold War for both urban and industrial targets, including Pyongyang and several other North-Korean locations, of which a digital copy can be found in the National Security Archive (US Strategic Air Command, 2016). The North-Korean newspaper goes on to assert that:

> The most reasonable and perfect way to counter the US nuclear threat is to build a powerful nuclear deterrent, judging from the "survival logic of nuclear states" that they can never use nuclear weapons against each other. Hence, the DPRK decided to possess nuclear deterrent, as it has been exposed to the US nuclear threat since 1950s and is now put on top of its pre-emptive nuclear hit list. […] If it had not been hostile to and imposed nuclear threat on the DPRK, the latter would not have resorted to nuclear weapons and the nuclear issue of the Korean peninsula would not have been raised. (Pyongyang Times in KCNA Watch, 2016)

In line with the above logic and theoretical expectations of Posen (1991, pp. 13–14), the North Korean nuclear arsenal was developed, has expanded and keeps on growing and modernising today. North Korea is estimated to have between 20 and 60 deployable nuclear weapons and

has successfully tested ICBMs with continental U.S. in reach (Albert, 2020), but the size of the nuclear payload they can carry and whether they could survive re-entry from the Earth's atmosphere is still uncertain. In contrast, the U.S. has 3.750 nuclear warheads (Nuclear Threat Initiative, 2021a), of all ranges and types.

Although South Korea gave up on its nuclear programme in the 1970's (Nuclear Threat Initiative, 2015), it is a major exporter of nuclear technology and has the technological expertise and most of the necessary infrastructure to develop nuclear weapons. Its conventional capabilities have seen major advances the last decade (Bowers and Hiim, 2021a), while DPRK conventional military capabilities have been in rapid decline for a long time despite some selective modernization (Office of the Secretary of Defense, 2017, p. 9). In the words of Bennett et al. (2021, p. 5), the balance of power between them is 'overwhelmingly in favour of the U.S.-ROK alliance'. Summarized, it would be an understatement to call the conventional and nuclear military balance between North Korea and the American-South Korean alliance skewed.

4.2 Adversary Perceptions of Intentions and Motivations

Although this analysis mainly concerns itself with the timeframe in which North Korea has been a nuclear power, the history between North Korea and its main adversaries still influences today's situation and must be mentioned. Both sides claim regularly that their military developments are necessitated by acts of the other and that all of them are defensively motivated. After the Korean War ended with an armistice rather than a peace treaty in 1953, the two Koreas are technically still to this date at war with one another (The Straits Times, 2018). The U.S. and South Korea have been allies since the Korean War. The U.S.-RoK alliance is a formidable military threat to the Kim regime and represent its polar opposite in political, economic and ideological terms.

Naturally, the skewed military balance alone is suited to foster uncertainty about North Korea's ability to defend itself. The fact that its adversaries are also in a far superior economic position, and thus have more resources to develop their capabilities – and do so at a pace North Korea will struggle to match – must seem threatening to Kim Jong Un. He knows that avoiding surprises hinges on him being prepared in advance. Even if the Cold War ended for the U.S.

and Soviet Union, it is arguably still present between the U.S. and two Korean rival states (Pollack, 2011, p. 17), with their competing systems of a liberal democracy versus totalitarian communism. The ideological competition between them serves another dimension of irreconcilable differences. This could further limit the understanding of each other's motives and intentions, which will be discussed in more detail below.

Interpreting North Korean behaviour and intentions is not without its complications. After Kim Jong Il's death and Kim Jong Un's ascent to power in 2011, the addition that the DPRK is a 'nuclear armed state' was added to its constitution (Panda, 2020, p. 117). In 2013, the regime followed up with another constitutional law further 'consolidating the role' of its nuclear arsenal (KCNA Watch, 2013b):

> 1. The nuclear weapons of the DPRK are just means for defence as it was compelled to have access to them to cope with the ever-escalating hostile policy of the U.S. and nuclear threat.
> 2. They serve the purpose of deterring and repelling the aggression and attack of the enemy against the DPRK and dealing deadly retaliatory blows at the strongholds of aggression until the world is denuclearized.
> 3. The DPRK shall take practical steps to bolster up the nuclear deterrence and nuclear retaliatory strike power both in quality and quantity to cope with the gravity of the escalating danger of the hostile force's aggression and attack. […]
> 5. The DPRK shall neither use nukes against the non-nuclear states nor threaten them with those weapons unless they join a hostile nuclear weapons state in its invasion or attack on the DPRK. […]
> 8. The DPRK shall cooperate in the international efforts for nuclear non-proliferation and safe management of nuclear substance on the principle of mutual respect and equality, depending on the improvement of relations with hostile nuclear weapons states.
> 9. The DPRK shall strive hard to defuse the danger of a nuclear war and finally build a world without nukes and fully support the international efforts for nuclear disarmament against nuclear arms race.

There are multiple ways to interpret this addition to the constitution, both aggressive and defensive. The underlining of them as defensively motivated and only to be used for deterrence or in case of an attack could be what Allard et al. (2017, p. 5) considers 'quasi-moral arguments', or it could in fact be a true reflection of a profound sense of insecurity vis-á-vis the U.S. and its Southern neighbour. It indicates a highly suspicious image of its enemy's

intentions and motives. Since 2013, the DPRK has delivered on its promise to bolster its 'treasured sword' both qualitatively and quantitatively. If this is indeed an expression of its real perception of the U.S. and its allies, North Korean incentives for pre-emption would be high.

The official U.S. Nuclear Posture Review (NPR) is regularly updated with the entry of a new administration to the White House, publicly available and delineates the broad strokes of American nuclear doctrine. North Korea is described as a threat in each of them. In 2010, the Obama administration changed the language of against whom the U.S. might use nuclear weapons. The key take-away from that NPR sounded as follows: '…the United States will not use or threaten to use nuclear weapons against *non-nuclear weapons states that are party to the NPT* and *in compliance with their nuclear non-proliferation obligations*' (US Department of Defense, 2010, p. ix, [emphasis added]). Considering the ongoing back-and-forth diplomacy with North Korea and the latter's nuclear and missile developments at the time, this can only be interpreted as a tailored and direct message to the North Korean regime and other proliferation suspects – and a clear indication the DPRK's behaviour is perceived as anything but defensive in American policy circles.

In the 2018 NPR, the formulation was kept and highlighted (U.S. Department of Defense, 2018, p. 21), an indication uncertainty is increasing over time. Further, North Korea is described as a clear and grave threat towards the U.S. and its allies (U.S. Department of Defense, 2018, p. 32). There can be no doubt that American leadership considers North Korea to be a high-level security threat and its nuclear weapons programme as offensively motivated, and that it at least in theory opens up for nuclear use against it under certain conditions. References to self-defensive measures abound. A recent, joint U.S.-ROK military exercise in August 2021 was described by South Korea's Joint Chiefs of Staff as: '…defensive in nature *as usual*' (Sajid, 2021, [emphasis added]), amidst North Korean protests and warnings that a severe security crisis would be the result of it. American and South Korean military measures do not seem to be accepted as 'defensive only' in Pyongyang.

South Korea has clear incentives to invest in counterforce measures to offset North Korean weaponry aimed at its capital, but these may in turn create instability and constitute a source of escalation pressure. The South is heavily investing in the building of an air defence system intended to detect, identify and destroy incoming North Korean SRMs, artillery and UAVs (Jeong, 2019b; Oh, 2021), to protect military and civilian targets from DPRK artillery and

rockets along the DMZ aimed at Seoul and surrounding areas. Nevertheless, continued developments that create North Korean doubts as to the effectiveness of their weapons seem to feed a spiral of military competition rooted in insecurity and the difficulty of distinguishing offensive and defensive measures. In September 2021 tensions rose, as both South Korea and North Korea conducted missile tests with only hours between them. The South tested several new military capabilities after American President Joe Biden and South Korean President Moon Jae-in ended an agreement capping the range and payloads on South Korean missiles (Lendon *et al.*, 2021); a key take-away was that South Korea is now one of only seven countries with SLBMs, the other six incidentally being nuclear states. North Korean media characterised the lifting of restrictions as a 'stark reminder' of American hostility towards it (Koh, 2021b). These arms developments indicate a lasting dynamic where each party is undertaking a range of claimed defensive measures to counter the other, whereas the adversary sees it as offensive measures.

Diplomatic efforts intended to denuclearize North Korea has obviously not succeeded in the parties breaking out of the security dilemma. After the first nuclear test in 2006, Kim has overseen another five nuclear tests and over one hundred missile tests (Albert, 2020; Panda, 2020, pp. 95–134). The new Biden administration reiterated the American pledge to ultimately denuclearize the Korean peninsula (Yi, 2021), only for Kim Jong Un to declare that the DPRK 'must be ready for both dialogue and confrontation' with the U.S. and its allies. This pattern of dual messages is very much in line with the logic of the security dilemma; their relationship is one marred by distrust and suspicion, where neither side wants to compromise in the belief the other will fall back on their promises. How this dynamic would manifest if conventional hostilities broke out is an open question. In the cases of Yeonpyeong and sinking of *Cheonan*, restraint held the parties back from escalating further. However, there is evidence the shelling of Yeonpyeong could have led South Korean authorities to reconsider their military response in a future attack (Harlan, 2013). If that is the case, it would likely increase the chances of escalation.

Neither direct diplomacy between North Korea and U.S.-RoK nor efforts by the international community has managed to break these actors free of the security dilemma. As the North Korean nuclear developments have progressed, so has the overwhelming sanctions regime put on the state by the international community, as well as the independent measures by U.S., South Korea, Japan and others. The missile tests and first nuclear test resulted in the UNSC's adoption

of Resolutions 1695 and 1718, respectively (for a full list of UNSC resolutions on North Korea, see Security Council Report, 2021). The latter concerns its nuclear activities and functions as the benchmark resolution for the sanctions regime which is now extensive (Security Council Report, 2019). North Korea is the most heavily sanctioned state in the world – an indication of general perceptions of it as a hostile and aggressive actor to be contained – and yet refuses to budge on its nuclear and missile developments. Assuming the North Korean leadership operates with at least bounded rationality, perceptions of the world as 'out to get it' seem the only defensible reason to keep its nuclear programme active.

Perceptions of adversary hostility are evident in North Korean propaganda, and so is references to its 'treasured sword' as defensively motivated. Prior to its virgin nuclear test, North Korea's Foreign Ministry forewarned the world of its plan while assuring it would be conducted safely (Panda, 2020, p. 114). It is worth noting another statement from the Foreign Ministry the same day 'clarifying' the country's position on this new addition to its deterrent for the purposes of self-defence: 'The U.S. daily increasing threat of a nuclear war and its vicious sanctions and pressure have caused a grave situation on the Korean Peninsula in which the supreme interests and security of our Sate are seriously infringed upon and the Korean nation stands at the crossroads of life and death' (KCNA Watch, 2006). North Korea is well known for a certain dramatic flair to its propaganda. One could choose to see statements from the regime as fabricated, simply as public justifications for a nuclear weapons programme intended to allow for aggressive actions to further revisionist goals without reprisals. This is in line with what has been labelled the *stability-instability paradox* (Kapur, 2017, pp. 799–800).

Exaggerated rhetoric aside, one can at least infer from this statement that the North Korean regime did see it necessary to add a public note underlining fear of military action against it, and that it does not much appreciate to be a recipient of sanctions and pressure. If the primary motive behind its nuclear acquisition was to get away with low-intensity conventional aggression, one could argue we should have observed more instances of it. Instead, statements like the one above has since flourished parallel to nuclear-relevant weapons developments and testing activities. Nuclear weapons have consistently been referred to as a defensive measure and never as part of an offensive strategy (Allard, Duchâtel and Godement, 2017, p. 5). In other words, official statements from the North Korean regime over the past 15 years clearly emphasise self-defensive measures and their nuclear arsenal as a guarantor for sovereignty and territorial integrity. KCNA Watch is an open-source, online database publishing translated

versions of North Korean news and official statements. An advanced archive search on KCNA Watch for articles and statements containing the word 'self-defence' from three main regime channels, namely the English versions of the Foreign Ministry as well as state-run news agencies KCNA and Naenara, between January 1st 2007 and October 30th 2021 yielded no less than 12.317 results[1].

The programme has resulted in a sort of pariah status which even its allies have not objected to; China and Russia have repeatedly refrained from vetoing UNSC resolutions. Second only to ensuring stability, a strategic goal for Kim Jong Un is likely to improve the state economy, primarily through the lifting of sanctions (Shin, 2021). The sanctions themselves seem to serve as confirmation for the DPRK's leadership that its adversaries are motivated by hostility. After the 2015 North Korean cyberattack on Sony Pictures Entertainment, the U.S. adopted harsher sanctions on it, to which a DPRK statement responded with the following:

> Washington's one-sided policy for ratcheting up the sanctions against the DPRK is no more than a last resort chosen by it from the calculation that it can neither check the latter's bolstering of nuclear deterrent nor disturb its economic growth through power-backed pressure only. […] The sinister design of the US, an empire of devils, to wipe the DPRK, a sovereign state, off the world map by igniting even a nuclear war on the Korean peninsula is being revealed with each passing day. (KCNA Watch, 2015c)

The weaker the economy gets, the harder it will be for Kim to maintain control over and contain his population. His willingness to risk internal instability for continued development of his nuclear arsenal cannot – assuming that his behaviour is strategic and he wishes to avoid a nuclear confrontation with the U.S. and South Korea – stem solely from a wish to undertake aggressive action under the shield of a nuclear deterrent (DePetris, 2021). More likely, it reflects a genuine perception of its main adversaries as belligerent.

North Korean missile and nuclear activity has sparked American and South Korean attention and diplomatic efforts, as well as international sanctions and worry. Despite intermittent diplomatic efforts, threat perceptions do not seem to have lowered between them. The pattern of interaction between the DPRK and U.S.-RoK are normally brought on by North Korean weapons developments and tests described as provocations (Cha, 2016; Davenport, 2020),

[1] Author's search October 30th 2021.

followed by calls by both sides to resume talks, only for them to fade into stalemate. Then a similar pattern emerges weeks, months or years later. Deadlocked negotiations result from repeated U.S. and South Korean wishes for dismantlement of the North Korean nuclear programme (Koh and Yi, 2021).

Kim's strategy of demanding negotiations while pursuing ever new weapons and delivery options and testing them have been dubbed 'hot-and-cold water bath' (Choe, 2021d). This has led to North Korea being described as an unpredictable and irresponsible regime using its nuclear force for coercive leverage (Choe, 2021f; Lee and Ham, 2021). At times, North Korean tests have come in response to American or South Korean military developments or exercises, at other times they seem to be unrelated to specific external events. Some have suggested that North Korea only gathers world attention 'when it misbehaves' (Delpech, 2012, p. 103), inducing it to repeat provocations. Following DPRK official statements after provocations usually contain complaints on the sanctions regime and indirect calls for sanctions relief (KCNA Watch, 2015c, 2017c; Choe, 2021b; Shin, 2021), defensive justifications (KCNA Watch, 2014, 2019b, 2019a, 2020c), or both. Gathering from the North Korean descriptions of the U.S. and South Korea and vice-versa, diplomacy does not seem to have convinced either side it is not facing a belligerent adversary.

4.3 Potential Influence of Leader and Regime Type

Yet another factor which may intensify the security dilemma dynamics between the DPRK and U.S.-RoK is leader type and regime type. Leaders are, like most other human beings and despite presumably trying to avoid it, looking for consistency in their adversaries' behavioural patterns (Jervis, 1976, p. 117), and struggling to correct their perceptions in the face of new evidence. In addition, they are likely to assimilate information into pre-existing beliefs (Jervis, 1976, p. 143). Additionally, recent scholarship by Breuer and Johnston (2019) have shown how enemy images and narratives are constructed between the U.S. and China as interstate rivalry has intensified. Where they find that a master narrative of China as a revisionist power in defiance of international norms and rules have emerged (Breuer and Johnston, 2019, p. 431). One could argue such an established narrative of the Kim regime as irresponsible, unpredictable, irrational and dangerous has existed for a long time.

Vice versa, if the rhetoric used by the North Korean leadership in official statements offer real insight into the regime's perception of the U.S. and South Korea, it is one of the U.S. as a hostile aggressor intent on sending the DPRK's social system to the books of history through a nuclear attack (KCNA Watch, 2019a, 2019b; Oh, 2020). South Korea is described in terms of varying between a conniving traitor (KCNA Watch, 2019b), American 'puppet' (KCNA Watch, 2017e), and 'meddlesome' when trying to facilitate negotiations (KCNA Watch, 2020b). In line with the narratives described by Breuer and Johnston (2019, p. 429) they emphasise zero-sum interests, that coercion is the best approach to dispute resolution, and each side claims blamelessness for the aggressive behaviour of the other – a clear indicator of the security dilemma at play.

There can be little doubt that North Korean and U.S.-South Korean leadership differ with respect to deeply ingrained values and belief systems, which surely influences how they perceive each other. When presenting the U.S.-ROK tailored strategy in 2013, South Korea's development into a democratic and economic power was described as a 'success story worth protecting' by UN Command and ROK-U.S. Combined Forces Command Army General Thurmann (Parrish, 2013). Threat perceptions are at the end of the day subjective and, like Jervis and others (1976; Jervis, Lebow and Stein, 1985) have shown, vulnerable to human, cognitive shortcomings.

North Korea's political life is the antithesis to a liberal democracy's freedoms and focus on individual rights and human rights. Regime type may have an independent effect on the parties' perceptions of intentions and motives and constitute an independent source of mistrust. There are valid reasons for not including this as an indicator due to the number of nuclear weapons states being so small, and variation within the categories of democracies and autocracies being so large. Nevertheless, there seems to be general agreement that the ideological divide was real during the Cold War. Scholarship on the Cold War has shown that fear of surprise attack can be influenced by ideology and deep-rooted beliefs (Delpech, 2012, pp. 47, 53–54), and feed perceptions of the other as 'intrinsically aggressive' despite contradictory evidence. If we accept the former, we should accept that there are other cases where ideology might also influence states' perceptions – and specifically threat perceptions – of each other, and so it may impact the risk of inadvertent escalation in a conventional conflict. That this might influence perceptions on both sides in this triad is not so strange considering tensions on the Peninsula is in fact a remnant of the Cold War, and the security dilemma is likely to be influenced by this.

As mentioned previously, a few 'rogue' and authoritarian state leaders already experienced they could be swiftly thrown from power through American use of force. As Way and Weeks (2014, p. 709) put it: 'Personalist dictatorships present unusually tempting targets for foreign interventions' as their indiscretions towards their own populations leave them with few other states in their corner due to international human rights norms. North Korea, with its system of severe political repression and expectations of cult-like reverence for a single head of state, is squarely placed within this category. The regime is not oblivious to this, as it has noted the fates of both Saddam Hussein and Muammar Gaddafi regularly (Way and Weeks, 2014, p. 710); Iraq provided the lesson one needed a strong and physical deterrent to secure sovereignty, and Libya would have been 'better off keeping its nuclear program' (McDonald, 2011).

Neither U.S. nor South Korea are immune to enemy images either. Western media headlines and comments from experts, analysts and policy-makers alike over the years since he came to power indicate that Kim Jong Un has represented somewhat of a rationality puzzle (Rantala and Oatis, 2021). He allegedly had his brother assassinated in an international airport (Ma, 2019), which some interpreted as an expression of North Korean 'exceptionalism' (Broom, 2019). Three hundred reported executions, some for dubious reasons and in spectacular fashions (Kwon and Westcott, 2016), has earned him a reputation for brutality matched by few other state leaders. Questions regarding his sanity and rationality have been raised regularly, like whether he is a 'madman or a mastermind', the 'world's most dangerous man' or how 'volatile' he is (Lendon, 2016). One could argue his behavioural pattern and choice of nuclear posture displays low levels of risk-aversion and a willingness to gamble (Delpech, 2012, p. 46).

It seems reasonable to suspect that leaders' personalities and preferences influence nuclear decision-making simply because the authority to make decisions on nuclear matters is limited to few individuals or small groups. As Delpech (Delpech, 2012, p. 37) notes: 'The problem was, and still is, the conjunction of immensely destructive weapons with leaders as they have always been – prudent or trigger-happy, determined or hesitant, courageous or cowardly, intelligent or dumb'. Weeks (2012, pp. 334–336) is that leaders of *personalist* dictatorships may be substantially less restrained in terms of domestic audience costs than other types of leaders, and through their ascent to and hold on power: '…have learned that force is an effective and even necessary means of dispute resolution, lowering their perceptions of its costs'

(Weeks, 2012, p. 334). They may also surround themselves with deputies and 'sycophants' who are unwilling to rein them in for a number of reasons (Weeks, 2012, p. 335), which could be because they unconditionally support them for ideological reasons, that promotions and climbing the hierarchy depends on silence and submission, or because it can be deadly to disagree with said leader. Around 140 senior officers in the North Korean Worker's Party, military and government would have attested to the latter if they had not been executed by Kim over the course of his first five years as Supreme Commander (Kwon and Westcott, 2016).

Another consequence of such a turbulent history and high level of animosity is that any outstretched hand in the name of reconciliation – no matter how genuine – is likely to be viewed with profound apprehension even in peacetime. Whether North Korean authorities would trust American or South Korean signals or communication of restraint during a conventional conflict is unknown but seems unlikely. Regular statements saying it considers various events short of military action as declarations of war (KCNA Watch, 2015c, 2016a, 2017d, 2017f) does little to lower tensions. Rather, it serves to underline how the DPRK is consistently jumping to worst-case conclusions even in an environment *without* ongoing hostilities taking place, which does not bode well for a context of military action.

4.4 Influence on Perceptions of Past Crises and Military Campaigns

The Kim regime and Washington's relationship has been strained independently of North-South Korean relations for a long time. The security dilemma is influenced and intensified due to North Korea's perceptions of U.S. actions and intentions behind them in other parts of the world. A clear American willingness to engage in far from home military operations and promotion of democracy has been demonstrated time and again the last 20 years (Straub, 2020, p. 169), one could argue most notably through operations in Afghanistan, Iraq and Libya. In far-flung places, the U.S. has shown its willingness to go in with grand and revisionist goals and objectives (Panda, 2020, p. 81), which North Korean propaganda refers to regularly. The original and now infamous 'axis of evil' to American ex-President George W. Bush jr. included North Korea, and amongst others Iraq, Iran and Libya (Gardener, 2003). Considering how two of those regimes met their end through American use of force, North Korea does have reason to be suspicious.

In 2017, during the verbal duel between Trump and Kim Jong-un, Trump launched his own axis of evil yet again including North Korea (Dorell, 2017), further igniting security dilemma dynamics. The DPRK has been on the state sponsors of terrorism list twice due to its proliferation activities, and its public reactions to this have been to interpret the U.S. as a 'hostile aggressor' (KCNA Watch, 2002, 2017a). In 2013, KCNA is quite explicit about nuclear capabilities being a sole guarantee for the regime's survival:

> What fate would the DPRK have met and how miserable situation would have prevailed on the Korean Peninsula had the DPRK not had access to nuclear deterrence? It might have met the same lot as Iraq and Libya and the peninsula have turned into a theatre of war like the Balkans late in the last century and Afghanistan in the present century. (KCNA Watch, 2013a)

U.S. has displayed a *considerable readiness to operate outside the UN framework* (Straub, 2020, p. 169). This has not gone unnoticed by regimes sharing the experience of being the at the centre of American disapproval.

In American foreign policy, North Korea has been placed among the global top five military threats (Pellerin, 2017). Considering the adversaries it faces, North Korea does have sound reasons to fear 'infringement' on its security. The security dilemma would dictate that a state sharing borders with a much stronger opponent allied with an even more powerful state would feel insecure. Add the history of war, conflict and animosity between them, and grounds for eyeing one another's military activity with trepidation is clearly present. Joint U.S.-South Korean military exercises in its near abroad have sparked loud complaints from the North. A spokesman for the Foreign Ministry claimed they: '…pose [a] particularly serious danger unlike ordinary military drills as they are large-scale rehearsals for a war of aggression being staged by the U.S., the biggest nuclear power in the world, in areas close to the DPRK' (KCNA Watch, 2015b).

Panda (2020, p. 90) points to Pyongyang's inherent limitations on understanding American and South Korean intentions being a driver of this discomfort with joint military exercises – in particular those involving mass mobilization of forces and live-fire – as the regime fears they might be used as a ruse to initiate a pre-emptive war under otherwise peaceful conditions or as a cover to set in motion a regime change campaign. This worry would be no less acute in the event a conventional conflict has actually broken out – quite the contrary. The U.S. and South

Korea do have legitimate, defensive reasons to conduct joint military exercises. Not testing their forces together would decrease their security. Considering all mentioned above, one could nevertheless argue the difficulty of distinguishing between offensive and defensive measures are acutely felt in Pyongyang even in peacetime – in other words, the security dilemma makes itself very much evident. In an environment of ongoing conventional operations, North Korean doubts about the intent behind them would be intensified, and so would his incentives to get ahead by launching a nuclear first-strike.

Experiences from earlier crises may have exacerbated the security dilemma for both sides and serve to underscore how the security dilemma can intensify during crises, in line with Jervis' theoretical expectations on how decision-makers learn lessons from past events (1976, pp. 217–222, 266, 274). Several conventional military clashes have happened over the years between the North and South. 2010 was a particularly eventful year in that regard. In March, the South Korean ship *Cheonan* was sunk on the maritime border between the two countries, killing 46 crew members (Lendon, 2010). North Korea denied any involvement, but both South Korean and American intelligence attributed the attack to the DPRK and diplomatic ties were cut (Davenport, 2020). A later South Korean report on the incident – formally attributing blame to the DPRK – was labelled by the North as fabricated and a 'conspiratorial farce' (KCNA Watch, 2010). In response, South Korea and the U.S. held a joint military exercise involving 8.000 troops, 200 aircraft and 20 ships as a show of force in July (Batty and McCurry, 2010), which led Pyongyang to threaten with a 'retaliatory sacred war' involving its nuclear deterrent. Pyongyang has been quick to this kind of rhetoric and has so far dodged a military response.

The *Cheonan* sinking was a clear violation of international law and constituted an act of war (Delpech, 2012, p. 103); speculations on why the U.S. and South Korea refrained from military retaliation have included fear of even more aggressive responses from the North. However, it may be that U.S. and South Korean 'strategic patience' is waning (Delpech, 2012, pp. 103–304).

The most serious incident happened in November, one that could plausibly have been sparked due to security dilemma dynamics. North Korea fired artillery shells at the Southern-controlled island Yeonpyeong and South Korea returns fire (BBC News, 2010; Kim and Lee, 2010); the North accused the South of firing first, while the South's military said it had conducted exercises with live-fire directed *away* from the North. Exercises with live-fire has proven to

make Pyongyang edgy (KCNA Watch, 2015b, 2019b; Panda, 2020, p. 90). It may very well have been that the supposedly unprovoked shelling was in fact a North Korean response to feared attacks or an imminent invasion (KCNA Watch, 2015a). Claiming its nuclear and missile developments are only 'bolstering up its military capability for self-defence' (KCNA Watch, 2019a), a North Korean official expressed worry about American 'nuclear strike exercises' against it. In the same statement, he warned that a U.S. military official reportedly labelling the state 'rogue' and of 'evil intent' in a Senate hearing could only be interpreted as a vicious and hostile attitude towards it.

Whether declarations like these are purely for propaganda purposes or truly reflect a sense of imminent danger remains uncertain (Bennett *et al.*, 2021). Some have argued that U.S.-RoK military exercises does not influence North Korean threat perceptions or spark provocations (Cha, Lee and Lim, 2016), though this study only included pre-warned, annual exercises Foal Eagle and Key Resolve. If it is an expression of the latter, it reflects such a deep level of mistrust it should be a grave cause of concern in a scenario of conventional conflict. Only North Korean leadership knows the specific strategic reasoning and timing behind the Yeonpyeong Island shelling. A speculative assessment notwithstanding, one possible explanation is that the Southern exercise was misperceived as an imminent attack. Such events have also contributed to uncertainty with his adversaries, and repeated speculations on whether Kim Jong Un is 'an unstable madman or a calculating mastermind' (Lendon, 2016).

4.5 Influence of Geography on the Security Dilemma

Finally, the geography of the Korean peninsula is likely to compound the security dilemma for the DPRK. This stems mainly from the fact that it is a very compact theatre; a look at Google Maps is enough to realise that North Korea faces severe constraints when it comes to the basing of its nuclear weapons, both on land and at sea. It is a small country locked in on all sides. Although China is a formal ally, the DPRK cannot rely on Chinese help in a conventional conflict with the U.S. The warning and response time is equally short, meaning decisions would have to be made in haste. Neither bode well for the prospects of escalation in a conventional stand-off. The actual capabilities will be further discussed in the second chapter, which makes it sufficient to mention that North Korea does not yet have a credible nuclear-capable submarine force, and despite having developed a range of land-based missiles and launch

options, it has not yet spread its nuclear force across its territory, leaving its arsenal and second-strike capability vulnerable.

Posen (1991, p. 16) expected geography to pose a worse problem than it did for the U.S. and Soviet Union between future nuclear-armed adversaries who share a border, especially if one or both parties have limited access to maritime basing of its deterrent force. The reason being that a secure second-strike capability hinges on survivability. A future North Korean submarine-based force will struggle in this regard; if he deploys them at the onset of crisis, they will not get far. On its Western coastline, the small portion of the Yellow Sea from which they could deploy is locked in between China and South Korea and would have a hard time getting out undetected. On the Eastern side, the Sea of Japan is almost locked in by Japan. To get out to sea, a submarine would have to pass between south of Japan *and* South Korea – a task close to impossible.

Today's constellation of U.S., South Korea and North Korea share some similarities with the geographical asymmetries described by Posen (1991, pp. 15–16) too, further exacerbated by the necessity of quick decision-making in fear of a surprise attack. The border is shared between the two Koreas, and the U.S. finds itself once again geographically further away from the battlefield. The geographical asymmetry creates similar conditions, where joint U.S.-ROK conventional operations on the Korean peninsula could threaten North Korean nuclear infrastructure. Conventional operations could easily be perceived by North Korean leadership as a cover for attacks against their nuclear forces or camouflage of a surprise nuclear attack.

North Korea's second-strike capability and retaliatory forces is uncertain at best to begin with, and so Kim Jong Un could easily become nervous at the slightest degradation of his strategic assets during a conventional conflict. Although South Korea has not gone nuclear, some of their weapon's developments related to the Massive Punishment part of their strategy towards North Korea now mimic nuclear forces (Smith, 2021); by developing advanced submarine capabilities previously reserved for nuclear powers and precision-strike weapons intended to target bunkers, Seoul not only decreases its dependence on the U.S. alliance, but it also constitutes a form of nuclear hedging.

4.6 Key Findings

Based on the above analysis of how the security dilemma does influence the DPRK-U.S.-RoK relationship and how it is likely to operate in a setting of ongoing conventional operations, it is generally acute and will likely become worse in a crisis. This conclusion is based on the following findings. In theory, the security dilemma fosters insecurity due to scepticism of intentions and motivations. Based on the continued failure of diplomatic efforts, North Korean leadership is evidently poorly understood by its adversaries and deeply suspicious of their intentions. This is likely rooted in a mixture of their shared history of war and animosity which has generated established enemy images, as well as 'lessons learned' from American dealings with other 'rogue' states like itself.

Potentially the ideological divide between these adversaries hinder understanding between them and could heighten risks of misperceptions and miscalculations in a crisis or limited conventional conflict. Trust would come at too high a cost to Kim Jong Un; not compromising with his adversaries is a situation he can live with, while accepting dismantlement of his 'treasured sword' potentially could lead to the end of his family dynasty. Fears of a surprise first-strike are highly likely to intensify during ongoing hostilities due to the geography of the Korean peninsula.

Chapter 5

Analysis: Offensive Inclinations Abound

This chapter discusses how the offensive inclination could be affecting the risk of inadvertent nuclear escalation between the DPRK and U.S.-ROK in a conventional conflict scenario. The escalation pressure he faces in a conventional conflict scenario is a question of how safe he believes his retaliatory capability is, or in other words how vulnerable he believes himself and his arsenal to be. Judging from Kim Jong Un's continued references to Libya, Iraq and Afghanistan, he sees his nuclear option as the only bulwark between him and forced regime change by American and South Korean forces – making that 'treasured sword' his most valued possession. We must also assume from past research that the North Korean nuclear doctrine emphasizes first-use and is offensively oriented (Narang and Panda, 2020).

5.1 American and South Korean Doctrine and Posture

North Korea has in all likelihood closely observed how the U.S. fights its wars. Neither has the DPRK missed out on the fact that the American ability to project force globally is unparalleled. American strategic doctrine the last 20 years have undergone many substantive changes, developments, and revisions – many of them related to the events of 9/11 – which are beyond the scope of this paper. Some key elements are nevertheless of importance to its relationship to the DPRK. As previously mentioned, North Korean state channels repeatedly refers to the American operations in Afghanistan, Iraq and Libya. The common denominator in all three cases was that their respective regimes were toppled within mere days or a few months.

After the end of the Cold War, the American military focus shifted from mutually assured destruction vis-á-vis the Soviet Union towards development of missile defence systems, as well as achieving substantial qualitative improvements in the speed, agility, and lethality of American forces (Straub, 2020, pp. 168–169). No country in the world is a match for US military strength today, a fact that North Korean leadership is and has been painfully aware of. In addition, the threat from what American ex-President George W. Bush jr. labelled 'the axis

of evil' – namely states associated with either terrorism, proliferation of weapons of mass destruction, or both – gave way to a focus on counterproliferation and pre-emption (Straub, 2020, p. 169).

In a section on U.S.' tailored deterrence strategy towards North Korea, the NPR is not to be misunderstood (US Department of Defense, 2018, p. 33 [emphasis added]):

> Our deterrence strategy for North Korea makes clear that any North Korean nuclear attack against the United States or its allies and partners is unacceptable and will result in the end of that regime. *There is no scenario in which the Kim regime could employ nuclear weapons and survive*.

The technically advanced and currently modernizing American 'nuclear triad' consists of land, sea and air delivery options and comprises ICBMs, SSBNs and strategic bombers (Nuclear Threat Initiative, 2021b). Additionally, the U.S. has a range of TNWs with high accuracy and conventional PGMs. American missile defence is advanced and 'specifically geared' towards a North Korean missile attack (Van Diepen, 2019), even if it is not fool proof.

When the U.S. projects force, it does so quickly and with an emphasis on the advantage of offense. This is a likely cause of anxiety in North Korea, which is surely augmented by a South Korean offensive doctrine. The DPRK's possible concerns over the offensive way its adversaries fight wars is likely amplified by South Korea's recent military modernization efforts and shifting doctrine. Like mentioned in the previous chapter, South Korean conventional force build-up the last ten years have been significant and are still growing. The South Korean deterrence approach to North Korea consists of three key elements (K3) (Lee and Ham, 2021); the 'Kill Chain' system, the Korea Air and Missile Defence (KAMD) system and the Korea Massive Punishment and Retaliation system (KMPR).

Bowers and Hiim (2021b) describe them as follows; The *Kill Chain* rests on detecting imminent North Korean missile attacks and pre-emptively destroying the North's missile launch capabilities. KAMD is a layered system which the South has largely developed independently and indigenously. Still, with new North Korean missile developments its effectiveness is uncertain (Jeong, 2019a). The aim is reportedly now to develop a missile interceptor system similar to the Israeli 'Iron Dome' (Oh, 2021), in order to protect Seoul and

surrounding areas from long- and intermediate-range North Korean artillery. KMPR in essence means multiple kinetic and non-kinetic capabilities to target North Korean leadership facilities following a North Korean attack. Bowers and Hiim (2021a, p. 8) describe the K3 as an independent and unique combined counterforce and countervalue strategy; it consists of both offensive and defensive conventional capabilities specifically designed to neutralize North Korea's nuclear option as well as striking North Korean leadership.

There are few indications the U.S. or South Korea will reduce their dependency on offensive measures in the future. On the contrary, they are more likely to develop new capabilities in line with current doctrines. RAND Corporation and the Asan Institute for Policy Studies explicitly advice the U.S. and South Korea to continue to improve their counterforce and counter-leadership strike capabilities as well as improved defensive capabilities (Bennett *et al.*, 2021, p. 61). The reasoning behind the advice is that they expect North-Korea to acquire around 200 nuclear weapons and diverse ways of delivering them, including a significant increase in the number of ICBMs which could hit U.S. homeland, by 2027 (Bennett *et al.*, 2021, p. 59). In this lies also a recognition of the fact that negotiations with the Kim regime on denuclearization has proved to be futile so far.

Rather than wishing for North-Korea to drop their nuclear option, the US and South-Korea must now focus on how to deter Kim Jong-un and preparing for the event that both conventional and nuclear deterrence could fail (Bennett *et al.*, 2021, p. 60). Policy-guiding research on American deterrence now advocate a conventional deterrence approach rather than relying on nuclear weapons towards North Korea in order to: '…fight and win a limited defensive war below the nuclear level' (Mount, 2019, pp. 6–7). Although it remains to be seen how influential these thoughts will be in the upcoming, revised NPR of January 2022, less emphasis on counterforce and missile defences seems unlikely to manifest.

5.2 North Korean Doctrine and Posture

Past research efforts and logic provides a relatively clear picture of an offensively oriented North Korean nuclear doctrine, despite the fact that the state is so closed and opaque. There is no such thing as 'perfect information' when it comes to North Korean thinking on any matter, as reliable and valid data can be hard to find and challenging to interpret, but one can

nonetheless be fairly certain of key elements of Kim's *nuclear doctrine*. Despite this regime's obsession with secrecy, it is in fact:

> …surprisingly transparent about its intentions – particularly where its nuclear weapons are concerned. All things considered, this makes sense: there is no point in having a deterrent that nobody knows you have, or if nobody understands how you might use it. (Panda, 2020, p. 77)

In the years after its first nuclear test in 2006, North Korea's nuclear doctrine and posture was naturally under development. At the time, the existence of any explicit nuclear doctrine was unknown and it was probably best described as 'nuclear ambiguity' (York, 2021). It was an open question whether the regime saw its nuclear arsenal as an offensive weapon to use or a defensive deterrent (Scobell and Chambers, 2009, p. 194), as well as whether their nuclear weapons would be used tactically or strategically. Despite that there still is no official, formal and comprehensive doctrine in place, valuable research on what North Korea's doctrine plausibly is has been done and much more is known about the country's actual capabilities. Carefully orchestrated propaganda imagery with Kim Jong Un posing alongside elements of his 'treasured sword' and statements from North Korean state media and public officials has offered valuable clues (Panda, 2020, p. 77). DPRK conventional military capabilities have been in rapid decline for a long time despite some selective modernization (Office of the Secretary of Defense, 2017, p. 9), and they are expected to develop tactical nuclear warheads by 2027.

If *nuclear posture* is the role a nuclear arsenal might play in the execution of its national strategy of regime survival, small powers like North Korea has a limited options menu to choose from (Panda, 2020, p. 78). Narang (2014, pp. 14–23) has coded said postures as *assured retaliation*, *catalytic*, and *asymmetric escalation*. The first hinges on survivability of nuclear forces and the ability to survive a first strike (Narang, 2014, pp. 17–19). North Korea has never and is unlikely to adopt this posture in the near future; serious resource constraints and a compact geography is in the way of that (Panda, 2020, p. 78). Its economy hinders a massive build-up of nuclear forces and infrastructure, and its size limits available locations and spreading out its nuclear forces sufficiently to secure a second-strike capability. The second hinges on the availability of a stronger patron motivated to come to the rescue. This could have been an option for Pyongyang while Chinese patronage was secure. As a Chinese envoy in 2011 reportedly told North Korean leadership that Chinese aid was out of the question if North

Korea attacked South Korea first and there was a nuclear confrontation as a result (Panda, 2020, pp. 79–80), a catalytic posture would not be credible for North Korea today.

Hence, Pyongyang has two options: asymmetric escalation or settling for first-strike uncertainty. In the absence of a reliable third-party patron to balance for it while facing a conventionally superior and proximate offensive threat, Narang (2014, p. 32) expects North Korea to adopt asymmetric escalation. This posture has its merits against a conventionally stronger opponent; it is designed to deter conventional as well as nuclear attacks (Narang, 2014, pp. 19), the most aggressive posture option available. North Korea has repeatedly warned it would be the first to use nuclear weapons if threatened (Kim, 2013; KCNA Watch, 2016b, 2017b; Neely, 2016). Their conventional inferiority, deep-set fears of a surprise leadership decapitation, and continued explicit references to first-use, provide good reasons to assume they have settled for the option of asymmetric escalation. This posture relies on the threat of first-use in response to any attack, including conventional ones, crossing its 'red line'.

The significant conventional disadvantages the North Korean regime have vis-á-vis South Korea and the U.S. is what has: '…driven it to adopt asymmetric deterrence posture aimed at limiting damage to itself through pre-emptive escalation' (Mount, 2019, p. 8). The term 'pre-empting decapitation' has been suggested as a summary of Pyongyang's doctrinal thinking (Allard, Duchâtel and Godement, 2017, p. 1). Referring to fears of a pre-emptive strike has been a constant feature of DPRK statements since Kim Jong-un came to power (Allard, Duchâtel and Godement, 2017, p. 3), and have been clearly distinguished from a preventive strike which is never mentioned. Taking North Korea at their word then, would mean to accept they are convinced that a leadership decapitation is a real possibility and that this is their greatest fear – which could provoke nuclear use very early in a crisis. Further, they avoid any references to nuclear first-use without indications of an imminent leadership decapitation operation or regime change campaign.

Pyongyang fears regime change, invasion and unification in the regime's disfavour more than anything (Panda, 2020, p. 81); they will look for indications like evacuation of US citizens from South Korea or Japan, amassing forces, jamming or disabling North Korean communications. To avoid it, North Korea tries to hold at risk valued South Korean, Japanese and US targets. These targets are evenly spread between counterforce and countervalue (for a list of nuclear strike targets according to North Korean sources see Allard, Duchâtel and

Godement, 2017, p. 8). Kim has been relatively clear on which targets he can and aspires to hit (Panda, 2020, p. 86); in 2016, North Korean state media published a photograph of Kim next to a map identifying Hawaii, San Diego, Washington D.C., possibly Louisiana. He now has them all in range.

5.3 First-Strike Incentives and Use-It-Or-Lose-It Pressure

Following the 2016 U.S.-ROK military exercises in March and its second nuclear test that year in September, North Korea officially threatened a nuclear first-strike. In his statement to NBC News, a top North Korean official claimed that: 'A pre-emptive nuclear strike is not something the U.S. has monopoly on […]. If we see that the U.S. would do it to us, we would do it first. We have the technology' (Neely, 2016). In 2017, Kim's younger sister and potential heir to the family dynasty in the case of his demise reiterated the message: a nuclear first-strike would be the result of the 'slightest sign of provocation' (KCNA Watch, 2017b) – signs of 'provocation' ostensibly meaning indications of an imminent U.S.-South Korean leadership decapitation. Knowing that he is a top priority target the moment conventional military action is undertaken against the DPRK, Kim Jong-un is left with both little time to consider his course of action and few incentives to hold back on nuclear use.

The capacity to hinder a South Korean conventional campaign while holding American homeland hostage maximize the Kim regime's deterrent force and chances of survival, by inducing high costs on both arch enemies. This is evident from looking at how its missile program started out:

> Rather than following a linear path, North Korea's missile development trajectory appears to be fragmenting as it tackles new technologies before perfecting older ones; Pyongyang is developing ballistic *and* cruise missiles: solid *and* liquid fuel technologies; working on […] ICBMs *before* it successfully tests and deploys intermediate-range systems; *and* attempting to make road-mobile ICBMs *before* perfecting a static design. Essentially, Pyongyang is trying to do everything at once and with minimal testing. (Hanham, 2012)

In order to deter South Korea and the U.S., Kim needs nuclear-capable missiles of all ranges (Berkowitz, Karlis and Meko, 2017), from short to intercontinental range. Ideally, they would

have options on land and at sea, to maintain a second-strike capability. However, these are not easy feats for a country with severe financial restrictions. 'While previously content to threaten South Korea and most of Japan with hundreds of short- and medium-range ballistic missiles' (Hanham, 2012), North Korea was already in 2012 testing longer-range systems with an estimated range of 4.000-8.000 kilometres. When Kim Jong Un declared his nuclear deterrent complete in 2017 it was due to finally having developed and tested a deployable ICBM (Panda, 2020, p. 85). A nuclear-capable ICBM which could strike continental U.S. was a necessary component in his nuclear deterrence strategy and a fulfilment of the 'life's work' of the North Korean state (Panda, 2020, p. 69). Much remains uncertain about North Korean capabilities and likely future developments (Van Diepen, 2019), including about the reliability of their re-entry vehicles, accuracy of especially their ICBMs and payloads of the warheads.

The Operations Plan 5027 (OPLAN-5027) is the US-ROK joint plan of action for responding to a North Korean assault in the DMZ (Axe, 2020). In 2015, a new US-ROK joint operational plan replaced the 5027; the OPLAN-5015 (Peck, 2017). Although the exact contents are classified, some of its key elements have reached the public after North Korean hackers successfully stole a significant amount of classified military documents from South Korea (Fifield, 2017). Amid these they found operational plans of a decapitation strike on Kim in the event of conventional conflict. In essence, OPLAN-5015 includes a swift: '…preventive strike on the North's core military facilities and weapons as well as its top leaders' in response to localized provocations (Global Security, 2021), essentially planning for a leadership decapitation and regime change in the North. Speaking of regime decapitation plans, South Korea has confirmed it has an independent option with special forces on hold trained for taking out Kim Jong Un should they feel threatened by North Korean nuclear use (Hancocks, 2016; Farrell, 2017).

The OPLAN-5027 would, over a period of 90 days, deploy hundreds of thousands of troops, half the US Navy and a thousand aircrafts to the Korean peninsula (Axe, 2020). To disrupt U.S. force mobilization on the Korean peninsula is one way for Kim to thwart his opponents early on. In order to have a chance at survival, Kim needs to 'go first and go big' (Panda, 2020, p. 83). Lessons from U.S. force mobilization in Iraq has influenced North Korean nuclear doctrine (Panda, 2020, p. 82), and not in a way that minimizes the risk of inadvertent escalation. The exact circumstances under which the U.S. or South Korea would aim to decapitate North Korea's nuclear option and the Kim regime during a conventional conflict is not public

information, but it is likely quite quickly if a conventional clash escalates to a threshold deemed unacceptable to the U.S. and ROK. In December 2019, former U.S. National Security Adviser HR McMaster warned he 'did not think' the US could tolerate a nuclear North Korea (Relman, 2017). A public statement like this indicates that the thought of preventive military action against North Korea is entertained by senior and high-level US policymakers. Certainly, that possibility has crossed Kim Jong-un's mind, and he could easily interpret statements like these as proof he should expect it. Kim can reasonably suspect conventional operations could be for this purpose, which induces him to strike fast and early himself.

During joint military drills, the U.S. and South Korea has simulated attacks on the North's nuclear plants and focused on swift regime decapitation (Fifield, 2016). Parts of one of those operational plans, the OPLAN-5015, leaked to the media in 2017 (Peck, 2017); it detailed how American and South Korean forces could take out North Korean leadership as quickly as possible through a pre-emptive strike, including assassination by special forces, precision-strikes on key leadership hide-outs, command posts and nuclear facilities. Panda (2020, p. 83) finds that: '…decades of inherited fear about resumed hostilities on the Peninsula, and the United States' known inclination towards regime change' would generate 'use-it-or-lose-it' pressure quickly and place Kim Jong Un in a position where he will rationally favour nuclear use. In their joint exercise Ulchi Freedom Guardian in 2017, Washington and Seoul reportedly rehearsed the OPLAN-5015 (Yamada and Minegishi, 2017), including such pre-emptive strikes on North Korean nuclear and missile facilities. Though mostly computer-simulated exercises, these have in the past – in line with the OPLAN-5027 – mostly consisted of responding to a North Korean attack – an indication that the options for dealing with Pyongyang has become increasingly offensively oriented.

'If […] a target state starts to experience multiple simultaneous or rapidly successive conventional attacks that seem to have nuclear implications, the interpretation may become more ominous', Talmadge writes when considering (Talmadge, 2017, p. 62). The likelihood that American and South Korean conventional operations would be 'multiple and simultaneous' or 'rapidly successive' is very high. Keravouri (2011) describes the U.S. tactical mode in war as: '…an adaptive U.S. military using an aggressive style of force as to overwhelm and destroy enough of the enemy's forces to acquire a decisive and quick victory with minimal casualties'. Considering the public elements of OPLAN-5027 and -5015, an offensive campaign aimed at blinding Kim Jong Un quickly should be expected. Additionally, after the

shelling of Yeonpyeong island, there were indications South Korea wanted to retaliate harder and that it may have boosted future will to retaliate with harder measures (Harlan, 2013). Then President Lee Myung-bak regarded the attack as an invasion of RoK territory requiring 'enormous retaliation' (CNN Wire Staff, 2010). Exactly what targets the US and South Korea would strike first in a conventional clash is not public information but given the premium on counterforce and known elements of their operational plans it seems probable that a conventional first strike would threaten nuclear infrastructure the North considers critical.

From the above, we can gather that U.S.-South Korean doctrine is indeed offensively oriented. Additionally, Kim Jong Un is not guessing or founding his mistrust of American and South Korean intentions on speculations alone (Panda, 2020, p. 82). He is surely aware of how rapidly the U.S.-RoK would aim to achieve the objective of regime decapitation for preventive purposes or if they suspected him of escalating to nuclear use during a crisis. This in turn creates pressure for him to halt and stop ongoing conventional operations before they ever get that far – in other words, early on.

An interest in TNWs is a strong indication of an asymmetric escalation posture and is assumed to lower the threshold of use (Panda, 2021, p. 17), as they incentivize pre-delegation and first-strike, thereby heightening risk of inadvertent escalation. In January 2021 Kim Jong Un expressed interest in TNWs and improved precision-strike capability (KCNA Watch, 2021a). Allegedly, the DPRK has now succeeded with the former (York, 2021). What is still not clear is whether, when and where he intends for low-yield nuclear weapons to be used (Panda, 2021, pp. 15–16). TNWs would be of value if Kim could use them to disrupt American logistical support (Panda, 2020, pp. 82–83); the U.S. would have to provide ground forces on the Korean peninsula in a regime change campaign. TNWs could provide a military advantage by striking the opponent's conventional forces which threatens nuclear assets (Talmadge, 2017, 58), accomplishing a delay in the ongoing campaign faster than with conventional weapons. The new alleged North Korean tactical nuclear capability is likely further increasing crisis instability by lowering the North Korean nuclear threshold of use (York, 2021).

The damage-limiting capacity of U.S. and South Korea could also influence Kim's assessment of when and in what numbers he must launch nuclear weapons during a conventional conflict, as they potentially degrade his ability to inflict 'unacceptable' damage to his opponents. Although missile defences are not at all fool-proof, North Korea must consider both joint U.S.-

South Korean and independent efforts to develop effective measures to 'hit and kill' his missiles if he ever launches one. The South Korean K3 system and efforts to develop the so-called Iron Dome is one such measure. So is the deployment of the U.S. Terminal High Altitude Area Defense (THAAD) missile defence system, which could hinder at least some North Korean IRBMs and MRBMs from hitting their intended targets (Bennett, 2017).

As late as February 2021, the U.S. second-highest ranking military officer stated publicly that the U.S. considers North Korea a more severe missile threat than any of their other adversaries (Kim, 2021), and that Washington's missile defence program is directly aimed at countering North Korea. This is further related to how threatening conventional operations may seem to the North Korean leadership. Incentives for nuclear escalation is related to the minimum of warheads Kim *needs* to survive for him to inflict unacceptable damage (Talmadge, 2017, p. 62); if conventional operations can be expected to take out some nuclear warheads and the target state has few, this constitute increased use-or-lose pressure the higher that minimum happens to be. This in turn relies on Kim's assessment of what unacceptable damage would constitute for the U.S. or South Korea.

5.4 Second-Strike, Retaliation and Survivability

The lack of a secure retaliatory capability drastically heightens North Korea's incentive to cross the nuclear threshold at an early stage, and be the first to do so. As of now, the second-strike capability of North Korea remains uncertain at best (Episkopos, 2020). Part of the answer to this is the question of ballistic missile-capable submarines (SSBNs). Submarine-launched ballistic missiles (SLBMs) which can avoid enemy detection, in other words the opponents anti-submarine warfare (ASW) efforts, goes a long way in securing a retaliatory capability even after sustaining blows from conventional operations or a nuclear first-strike (Talmadge, 2017, p. 61). North Korea actually maintains the largest conventional submarine force in the world (Panda, 2020, p. 162), but these are obsolete compared to modern American ASW. North Korea has made efforts at developing an undersea deterrence capability with two SLBM-tests in 2016 (Panda, 2020, p. 168-169), but at this time of writing the country has one single operational nuclear-capable SSB and another one under development (Choe, 2021e). These are no match for the ASW of the U.S. and South Korea.

Wu (in Talmadge, 2017, pp. 55–56) convincingly argues that even China, with a declaratory policy of No First Use, could make the decision to escalate to the nuclear level after a U.S. conventional strike on its arsenal, due to the intermingling of conventional and nuclear-capable missiles. A conventional American strike could unintentionally degrade nuclear capabilities by striking dual-purpose capabilities. As confidence in retaliation lowers, use-it-or-lose-it pressures rise. This is hardly less likely to be true of North Korea; on the contrary, any joint U.S.-ROK strike on DPRK would likely threaten Kim's nuclear option.

North Korea's compact geography and lack of maritime strategic options is one reason. An alternative way of trying to secure a second-strike capability to submarines are mobile and hardened ICBMs and land-based missile launchers (Talmadge, 2017, p. 58), which North Korea has done with their underground facilities. The downside of such an approach is that it imposes limitations on American and South Korean reliably pinpointing exact locations of nuclear and conventional missiles and corresponding infrastructure. This in turn makes it hard for North Korea's opponents to consciously avoid hitting nuclear-relevant assets. During a conventional campaign there is a possibility one would strike them inadvertently, and provoke a North Korean nuclear response.

Another fact that surely has not passed North Korea's attention is that its adversaries are both taking steps and developing capabilities tailored to deteriorate its retaliatory capabilities. North Korea has a long-standing tradition of concealment, camouflage and deception in order to maximise the survivability of its forces (Bermudez jr., Cha and Collins, 2018), particularly through hardening measures and an emphasis on mobility.

A recent statement from the South Korean Agency of Defence Development informed the world of its successful development of a ballistic missile specifically *designed to take out concrete structures and tunnels* (Lendon *et al.*, 2021). Satellite imagery and extensive research has concluded that North Korea has approximately 15-20 missile operating bases (Bermudez jr., Cha and Collins, 2018), most of them underground. From here, mobile missile launchers or so-called transporter erector launchers (TELs) would be dispatched to pre-decided launch sites (Hanham, 2012). Extensive underground facilities buried within or below mountains house everything from shelters for troops and the DPRK leadership, to infrastructure and materiel related to both conventional and nuclear forces (Mizokami, 2021). The new SLBMs were described by Seoul as a countermeasure towards a North Korean attack (Smith, 2021), meaning

one can safely assume this is thought of as a weapon to target North Korean leadership and force structure. South Korea has also developed independent plans for taking out Kim and other members of the DPRK top command with special forces on stand-by (Hancocks, 2016).

The knowledge South Korea is developing tailored capabilities to penetrate their underground structures is suited to feed North Korean doubts around its nuclear forces' survivability, and to raise further suspicion a conventional campaign would mean the quick annihilation of its nuclear option – and with it the Kim family regime. The underground facilities are on the other hand hard to identify by satellite imagery, and so the extent of the underground facilities is largely unknown (Mizokami, 2021). A pre-emptive U.S.-ROK strike to take out North Korean missiles and warheads would likely be complicated by the fact that they are presumably buried deep in mountainous terrain (Axe, 2020). This complicates American and South Korean target plans, as limited information on what is located where presents the risk of unintentionally compromising nuclear-relevant capabilities with conventional force. A conventional military clash between them where the U.S. and South Korea conduct conventional operations intending to only contain the DPRK or signal resolve thus runs the risk of quickly escalating due to Kim's use-or-lose pressures.

5.5 Key Findings

The findings here indicate that U.S-RoK doctrine and posture, both joint and independently, place a premium on offensive advantage and counterforce capabilities. Both sides take active independent and joint measures intended to counter and neutralize North Korean weapons developments. Both have joint and independent operational plans for preventive and pre-emptive leadership decapitation and regime change. North Korea pledges to a first-strike nuclear policy and asymmetric escalation posture, which is the most aggressive option from the menu of available nuclear postures. The concrete circumstances which would trigger such first-use centre on perceptions of an imminent strike against the regime, meaning that decision is likely vulnerable to misperceptions during crisis. Kim continues to expand his nuclear arsenal, and is in the process of developing – if this objective is not already achieved – TNWs which would lower their arguably *already* low threshold of use.

A theoretical expectation is that: ‘If the opponent is known to have a counterforce doctrine and credible counterforce capabilities, this knowledge is likely to foment a more suspicious interpretation of the opponent’s conventional military operations’ (Posen in Talmadge, 2017, p. 62). What stand out as particularly worrying for escalation pressure here is the potentially toxic combination of doctrines placing a premium on counterforce on one side, and a doctrine incentivizing a nuclear strike very early on in a conflict on the other. Added the credibility issues with North Korean retaliatory capability, this constitutes clear sources of escalation pressure stemming from the offensive inclination.

Chapter 6

Analysis: The Fog of War and Limits on Situational Understanding

The focus of this chapter is on the mechanism of the 'fog of war', which relates to the difficulties of acquiring, interpreting, and acting on relevant, accurate and timely information in a situation of ongoing hostilities. Missing or ambiguous information may present itself as highly threatening in crisis and create additional sources of insecurity (Talmadge, 2017, pp. 63–64). Posen (1991, p. 20) underlines how this can exacerbate existing insecurity stemming from the indistinguishability of offensive and defensive acts, as well as potentially escalatory situations stemming from offensive operations. The ability to avoid misperceiving both the opponent's motivations and intentions as well as the ongoing military operations themselves hinges on access to information and the ability to interpret it correctly.

This chapter is then concerned with aspects of North Korean and U.S.-RoK C4ISR capabilities which may influence the risk of inadvertent nuclear escalation. The discussion centres on interaction dynamics with implications for inadvertent escalation likely to present themselves during a conventional confrontation between the U.S./RoK and North Korea. Key features of three earlier crises between them illustrate that tensions can rise quickly; threat perceptions can heighten and the emphasis on offensive operations will in all likelihood intensify on all sides. It is not an exhaustive analysis, but rather highlights some key reasons the fog of war will create escalation pressure for North Korea. First, the fog of war could potentially lead to a pre-emptive launch due to misperceptions. Second, if Kim Jong Un senses that he is losing control during a crisis, he has incentives to become an 'early crisis delegator'. Third, the situational understanding is likely to deteriorate quickly for the DPRK in a crisis. Lastly, strategic communication with the opponent once hostilities break out is likely to be challenging.

It should be clarified in the beginning of this discussion that very little is known for certain when it comes to North Korean decisions and choices of C2. This analysis is therefore premised on the few aspects on which at least some information exists, or logical deduction from what

would be general difficulties with C2 for all nuclear weapons states (Feaver, 1992, pp. 162-163,168,174,178); the always/never dilemma, and how civil-military relations and the need of an arsenal being ready urgently influence the choice of assertive or delegative command systems. The always/never dilemma refers to the trade-off leaders are faced with to secure that their weapons are ready to function at their command, but never launched without their authorization. A state places negative controls to inhibit the latter from happening and positive controls to assure the former (Narang and Panda, 2017); favouring negative controls makes it more likely the weapons will 'fail-safe' – erring on the side of caution – while favouring positive controls may tilt in favour of a 'fail-deadly', heightening risk of inadvertent or accidental launch.

6.1 North Korean C2: Assertive Control

All publicly available evidence indicate that nuclear C2 remains under the strict control of Kim Jong Un and a small group of selected individuals in North Korea's top command (Parachini *et al.*, 2020). In other words, Kim has likely decided that assertive control over his nuclear option is his best insurance against an accidental or inadvertent launch as a result of human error or misperceptions. The DPRK has publicly made it very clear that Kim Jong Un is the *only* one with launch authority of nuclear weapons:

> The nuclear weapons of the DPRK can be used only by a final order of the Supreme Commander of the Korean People's Army to repel invasion or attack from a hostile nuclear weapons state and make retaliatory strikes. (KCNA Watch, 2013b)

In order to have this final authority and secure that his nuclear option is available in the event of a crisis or during ongoing conventional operations, Kim must be linked to his nuclear weapons at all times no matter where he is. In 2017, U.S. intelligence found that Kim might have developed a mobile nuclear C2 device in the form of a TETRA radio transmitter (Panda, 2020, pp. 229–230), which would be unaffected by efforts to disrupt telecommunications during a conventional U.S. or South Korean campaign. If Kim was *certain* of access to his nuclear weapons even during limited conventional hostilities, it should somewhat stagger his incentives to cross the nuclear threshold early on.

Should a conventional clash break out, all parties may experience heightened fears of an attack by the other. However, North Korean fears of a successful surprise attack will be much more intense for a number of reasons. First of all, the military balance discussed in chapter one leaves little room for believing that an all-out war between them would end with North Korean victory. Kim is aware that a full-scale military confrontation with the U.S. and South Korea would eventually lead to his death and the likely collapse of the DPRK. By all accounts, and assuming his strategy is one of regime survival, he is not suicidal and want to avoid that prospect at all costs. All the while, he is also aware of his opponents' counterforce capabilities and plans for a swift regime decapitation should he cross a certain unknown threshold. The civil-military relations of North Korea suggest they will favour assertive control, while the time-urgency of its arsenal according to their pledged first-strike doctrine favours pre-delegation of launch authority (Feaver, 1992, p. 181); indications are that fears of an unauthorized launch has dominated North Korean 'acute time-urgent vulnerability' for now.

If the DPRK's nuclear option is to be usable under multiple crisis scenarios, some of which it may have sparked itself through miscalculated provocations, he theoretically needs sophisticated *and* survivable nuclear C2 (Parachini *et al.*, 2020, p. 78). If, on the other hand, his nuclear weapons are only intended for a full-scale launch in a scenario of an imminent U.S.-South Koran attack he expects will cripple him, demands on C2 are more basic (Parachini *et al.*, 2020, p. 78). In the latter case, they would be used pre-emptively either before conventional conflict breaks out or during a campaign when expecting an imminent knockout-blow. Missing and ambiguous information in either context, particularly that of ongoing hostilities, would in all likelihood present itself as immensely threatening.

An aspect of North Korean C2 which is unknown but could constitute a source of heightened escalation risk is the question of who inherits the launch authority in a situation in which he is incapacitated. Who he has chosen as his number two in the case something should happen to him is still debated. As previously mentioned, there are no indications Kim has pre-delegated nuclear launch authority to anyone but some very few selected individuals (Panda, 2020, p. 232) – yet. This goes against Narang's (2014, pp. 36–37) general expectation that states adopting an asymmetric escalation posture will *not* maintain highly assertive control over the military. He considers they would only consider this in the most threatening kind of security environment (Narang, 2014, pp. 41–42). Pre-delegation of authority would augment the North Korean posture of asymmetric escalation and make a first-strike response more credible.

Leaving the option of launch with multiple people naturally lowers vulnerability of having a single person – who may be incapacitated because of anything from health issues to an enemy military strike – in charge of decisions. The trade-off is obvious; one creates the risk of a launch by accident or misperception.

For now, North Korea has presumably preserved strict civilian control over the military (Panda, 2020, p. 227). Kim Jong Un is convinced his nuclear weapons are safest in his hands only, most likely because an accident or misperception would have catastrophic consequences. The trade-off is that this leaves him vulnerable to interference with his C2/3, and this may change in the future. Threats to access to information and nuclear C3 has risen with cyberspace as a domain of warfare. Cyber threats have become part and parcel of many states' military arsenal, compounding escalation risks from increasing time constraints and limiting options[2]. American cyber capabilities are not shared with the public. However, they have actively been employed towards North Korea (Panda, 2020, pp. 240–243); a known incident was U.S. CYBERCOM interference with networks used by North Korean Reconnaissance General Bureau in 2017. Reportedly, the U.S. has pursued offensive cyberoptions intended to disable North Korean missiles and launchers before they could be used or arrive at their intended destination. If those 'left-of-launch' efforts have been or will be successful, they constitute a counterforce capability which could cripple Kim's 'treasured sword' before he ever tried to use it.

6.2 Incentives for 'Early Crisis Delegation'

Feaver (1992, p. 181) theorizes that a crisis might lead a state to alter its C2 during crisis or war, when time-urgency kicks in as a more dominant consideration than fear of unauthorized launch. Although by all accounts that is not the case at this time of writing, per this logic, Kim might be induced to pre-delegate nuclear authority to strengthen deterrence in the future. States facing a severe threat environment should theoretically be more likely to favour 'fail-deadly' procedures (Narang and Panda, 2017). As established in the first chapter, this is clearly the case for North Korea, making it somewhat surprising that he has not delegated authority. The fact that Kim is willing to compromise on secure first-strike capability rather than risk an unauthorized launch could indicate that emerging nuclear weapons states with decidedly

[2] https://mwi.usma.edu/escalation-to-nuclear-war-in-the-digital-age-risk-of-inadvertent-escalation-in-the-emerging-information-ecosystem/

civilian authority over military affairs – no matter how irresponsible they may be perceived by their adversaries – are more prudent than the most pessimistic assessments would have us think (Long, 2017). However, it could also be an indication Kim Jong Un is insecure about his military commanders' ability to make a correct assessment – which begs concerns about the risk of inadvertent escalation in a scenario where he did in fact decide to delegate.

North Korea is arguably a prime candidate for 'dynamic C2 procedures' switching in times of peace and war (Narang and Panda, 2017). He has incentives to become an 'early crisis delegator' if he suspects an imminent or ongoing regime change campaign (Narang in Panda, 2020, p. 91), or if conventional hostilities break out. The development of left-of-launch capabilities serves as an example and would create intense pressure for Kim to pre-delegate before he can be separated from his 'treasured sword' (Narang and Panda, 2017). Even if the realism of such options are not yet known to be fully developed, the North Korean leader has already understood that the U.S. might be willing to sabotage his and his commanders' C3 – and with it their situational understanding – in a crisis (Panda, 2020, p. 242). This kind of information warfare could have serious implications for the risks of inadvertent escalation (Cimbala, 1999, pp. 670–671); rather than making it easier for the target state to assess the environment and features of ongoing military actions, it deprives the actor of the ability to assess important aspects of ongoing hostilities which could trigger unintended side effects. Blinding the enemy in a context of nuclear deterrence, especially one who is uncertain of his retaliatory capability and has every reason to suspect a regime change campaign, could lead to a nuclear launch for warning purposes or military advantage.

If Kim chose to delegate authority to boost his deterrent by making it less vulnerable to American cyber operations, this would further increase the risk of inadvertent escalation drastically. For example, due to the limitations on their early warning systems, it would be very difficult for him or a North Korean commander with pre-delegated launch authorization to distinguish quickly between a civilian aircraft with a malfunctioning transponder and an American strategic bomber such as a B-52 (Lewis in Panda, 2020, p. 232). Few of North Korea's negative controls and safety measures with regards to its nuclear weapons are known. What is known is that nuclear warheads are stored in a single facility and they are not mated with missiles in peacetime (Panda, 2020, pp. 244–245), which suggests the North Korean leader is – for the time being – willing to accept vulnerability rather than risking an accidental or miscalculated launch. This aligns with Long's (2017) suspicion that North Korea could in

fact be leaning towards ‘failing safe’ for fears of losing political control in favour of certainty in their first-strike capability.

The North Korean submarine program is for now under development and not yet operational (Panda, 2020, pp. 236–237). The nuclear C2 challenges of a future sea-based, North Korean deterrent are massive. C2 choices would be a compromise between credibility and high risk of an unauthorized launch or vulnerability and ensuring external validation of a nuclear launch (Panda, 2020, pp. 237–240); in the event of conventional hostilities or a suspected imminent attack, Kim would face strong ‘use it or lose it’ pressures and must delegate in order to ensure survivability (Narang and Panda, 2017); North Korean submarine personnel could find themselves in charge of locked and loaded nuclear weapons, deprived of communication with their political authority, under intense uncertainty and the associated psychological pressure that comes with it. What stands between a North Korean ‘fail safe’ or ‘fail deadly’ scenario would depend on what risk reduction measures have been taken on board, as well as such things like human personality and its inclinations, bureaucratic incentives and ideological fealty (Panda, 2020, p. 233).

6.3 Deterioration of Situational Understanding

Aware of Kim’s incentives to strike first and strike early, a major American and South Korean objective in a conventional war would be to deprive him of the nuclear option before he could launch them at all (Panda, 2020, p. 243). In a conventional conflict scenario, North Korea probably should expect intense electronic warfare intended to disrupt its communications (Narang and Panda, 2017), which in turn could put North Korean officers tasked with nuclear preparations in a situation of ‘informal’ launch authority – would they refrain from launching if communications with the leadership was severed *after* orders to assemble and prepare for launch, but absent a final formal go-ahead? Narang and Panda (2017) argue one should assume North Korean wartime C2 is in fact designed to ‘fail-deadly’.

Despite missile defences and advanced ISR capabilities, the U.S. and South Korea has no guarantee a campaign could take out all North Korean nuclear warheads before he could launch any or all of them (Panda, 2020, pp. 292–293), or that none would get through their defences. These features would impact wartime dynamics between them and perceptions of each other.

In a conventional conflict, all parties would find themselves in a highly uncertain situation. Both sides would gain military advantage over the other by hitting where it hurts the most early on, and worse, both sides know the other side knows this. They also know that the consequences of a misstep would be disastrous, which in an ideal world should induce restraint in both. Lack of accurate and timely information during conventional operations would nevertheless exacerbate uncertainty and the risk of misperceiving the other's acts and intentions.

The DPRK's lack of opacity could pose situational headaches for American and South Korean intelligence too and so exacerbate already existing insecurity. Despite advanced ISR capabilities, there is no guarantee of receiving timely and reliable information, or interpreting it correctly, in war. Knowing that North Korean first-use incentives will be intense, lack of information could either induce restraint – like the U.S. favoured in 2010 – or generate calls for a pre-emptive response due to heightened threat perceptions. In fact, American restraint did not manifest during the infamous exchange of threats between former American President Donald J. Trump and Kim Jong Un in 2017 (for a comprehensive account of this public spectacle see Richards, 2018). Amongst the more notable features of their public quarrel were threats of 'fire and fury' and 'nuclear disaster', the nickname 'Rocket Man' and 'old lunatic', as well as boasts about the size of their respective 'nuclear buttons'. Rather than restraint, this 'War of Words' resulted in the U.S. considering a limited strike on North Korea.

The sinking of *Cheonan* in 2010 constituted a clear case of deterrence failure. It also led some to argue it was evidence of limited North Korean fear at the prospect of U.S. or South Korean military retaliation (Delpech, 2012, pp. 105–106). At the very least, Pyongyang must have considered the risks of *not* taking military action as less pressing than the risk of firing. The Yeonpyeong shelling and *Cheonan* sinking illustrate a North Korean willingness to take offensive action under conditions of uncertainty and high threat perception in *peacetime*. An implication of this logic is that the threshold for going on the offense when information is limited could be lower for the DPRK and that its:

> …adversaries must seriously consider that the country's command and control procedures could be designed to *fail deadly*: to guarantee a complete and overwhelming nuclear release after a major deterrence failure. In the North

> Korean case, the condition for a major deterrence failure would be the untimely death of the supreme leader at the hands of hostile forces. (Panda, 2020, p. 235)

North Korean ISR capabilities are thought to be limited (Allard, Duchâtel and Godement, 2017, p. 3). One reason for this is that it supposedly relies partly on foreign media reporting and a network of human spies in South Korea (Panda, 2020, pp. 89–90); these have severe caveats, which has led to misinterpretations and misperceptions for instance because of media misreporting. There is a high probability that the dynamics of a conventional military campaign would increase the chances of both media and human sources providing faulty intelligence, which – if taken as fact by North Korean leadership – would paint a situational picture far from reality. Another obvious caveat of sources like this is the dependence on communications; if spies cannot communicate or enter the country, or one is deprived of internet access, neither of these sources will be available.

Talmadge (2017, p. 60-61) considers it much less likely a target state in possession of hardened, redundant, nuclear-dedicated C4ISR will experience escalation pressure during a conventional campaign against it. In other words, if the target state can be confident it can effectively detect an incoming attack as well as reliably target its own nuclear weapons, escalation pressure will be lowered. The two scenarios mentioned above which Parachini et al. (2020, pp. 82–88) considers most likely scenarios of nuclear use by Kim Jong Un naturally hinge on the North Korean leader's assessment of American and South Korean intentions. Essential and real-time information on ongoing or imminent conventional operations are in turn dependent ISR (Panda, 2020, p. 89). Unfortunately, North Korean early warning systems have been described as 'archaic' (Panda, 2020, p. 232). Combined with ISR constraints and limited confidence in the survivability of his second-strike forces, the difficulties of acquiring reliable and timely information in a setting of ongoing warfare constitute sources of acute escalation pressure. Should Kim worry his opponents' conventional operations are signs of impending efforts at regime change, unreliable ISR is a source of further insecurity which could drive his assessments in favour of worst-case assumptions.

Theoretically, the fog of war increases the likelihood of *unauthorized* or *unrestrained* military action during conventional operations (Posen, 1991, p. 22). Kim Jong Un is at the end of the day only human and cannot possibly personally control every piece of outgoing or incoming information or every detail of his or U.S.-RoK military action in a setting of an ongoing

conventional campaign – even if he had access to perfect information. He would have to delegate authority, if not nuclear, to his military command. If autocratic leaders have a predisposition to solve disputes with violence (Weeks, 2012, pp. 334–335) – in other words that Kim personally could have a preference for the offense – that could be exacerbated from the fog of war as well. Presumably, the pressure on speedy decision-making in an ongoing military conflict rises compared with decision-making in peacetime. North Korean conventional operations would be especially threatening for South Korea, and South Korean retaliation with or without American support could in turn be perceived as highly threatening to the North. One would imagine these kinds of interaction dynamics could spiral very quickly on the Peninsula.

6.4 Lack of Established Communication Channels

Escalation pressure stemming from the fog of war will almost certainly be intense, as North Korea's situational understanding is likely to degrade significantly during a U.S.-South Korean conventional campaign. Clear and direct channels of communication between the adversary camps is one measure which could alleviate that problem, provided the parties trust each other enough to believe what they were being told. Strategic communication between them have been mostly sporadic though, and at times negligent.

Attempts at establishing a permanent, direct line of communication between the North and South continue to be fitful (BBC News, 2021; Koh, 2021a; Shin, 2021; Yonhap News Agency, 2021), and has even literally blown up when North Korea 'demolished' the North-South Kaesong liaison office (BBC News, 2020a, 2020b). Supposedly this was a reaction to anti-regime leaflets being distributed in the DMZ in 2020 by South Korean activists (BBC News, 2020a), but it is a clear indication of how poor communications have been even in peacetime. It also serves as a reminder of how acutely fears of instability is felt in the DPRK, and one could also argue that it is an indication of a low threshold for disproportionate reactions on the part of North Korean leadership. The fear of a crisis or ongoing hostilities escalating could induce North Korea to open up new channels of communication, or it could lead to the regime drawing even further away to induce uncertainty and fear of escalation in its opponents. Summarized, the already poor communication between them indicates a potential for escalation pressure stemming from the fog of war.

As Talmadge (2017, p. 64) succinctly puts it: ‘Ambiguous and inaccurate reports are endemic to war, as is pessimistic decision-making in response to limited information’. The question of how the fog of war might impact negatively on perceptions of motivations and intent behind ongoing military actions, and on the adversaries’ inclination towards offensive action, is ultimately one of whether and to what extent the states will afford each other the benefit of the doubt under conditions of uncertainty. Whether they either of them are likely to do so in a situation of severely hampered communication, or perhaps no communication at all, Schelling (1966, p. 235) pointed out how first-strike incentives and worst-case consequences of inaction would influence the decision to escalate:

> …the likelihood of war is determined by how great a reward attaches to jumping the gun, how strong the incentive to hedge against war itself by starting it, how great the penalty on giving peace the benefit of the doubt in a crisis.

One can assume that the level of restraint North Korean leadership would exhibit during ongoing hostilities – and faced with severe uncertainty due to missing or ambiguous information – would hinge on whether action or inaction would yield the worst overall result.

Panda (Panda, 2020, p. 85) outlines Kim Jong Un’s probabilistic logic neatly. Should he be convinced ongoing hostilities signal invasion or imminent regime decapitation, which he has reason to suspect will be successful if he does nothing, his best bet would be to launch a warning strike with a TNW. If he literally ‘goes ballistic’ and launches all of his nuclear warheads in the hope some might get through U.S. and South Korean defences, he has certainly signed his own death sentence. He is left with relying on a limited strike, preferably one that would hinder further U.S.-RoK military advancement, and the slim chance the U.S. and South Korea would balk at the prospect of him nuking Seoul or New York. Only in the last scenario are his chances of survival greater than zero.

The U.S. and South Korea could view Kim as paranoid and security-seeking, which may lead to caution and restraint. After all, provoking a nuclear response from Kim would have extreme consequences they presumably wish to avoid. Kim’s actions could nevertheless lead to increased worry his ‘provocative’ behaviour is an expression of undeterrable aggression and hostile intent, and that he must be stopped at all costs. Policy-advisors and American decision-

makers alike express opinions of Kim as irrational with regular intervals (Delpech, 2012, pp. 57–59, 90; Welch, 2018; Panda, 2020, pp. 291–292), but rarely seem to discuss the implications that follows from such a premise. Whether these opinions would have decisive impact on their threat perceptions in a crisis, or influence planning of conventional operations remains an open question.

6.5 Key Findings

Situational understanding would doubtlessly degrade quite quickly for the DPRK if the U.S. and South Korea launched a series of conventional operations in line with official doctrines, past military campaigns, and electronic warfare and cyber capabilities. The North Korean leadership could see a U.S. and South Korean campaign as defensively motivated and call for diplomacy and negotiations – assuming communications to do so were still intact. The lack of available and reliable information would undoubtedly constitute a source of intense discomfort for the DPRK, and Kim cannot afford to be separated from his 'treasured sword'. This could very well tilt him towards worst-case assumptions about U.S. and South Korean intentions. In that case, existing fears of regime change and hostility could intensify 'use or lose' pressures and lead to Kim Jong Un launching a nuclear strike to hamper or forestall conventional operations he believes is a signal of imminent leadership decapitation. In Talmadge's (2017, p. 58) words, to protect his valued nuclear forces assuming it 'would not invite all-out retaliation' or signal 'by way of a mushroom cloud' that his red line has been trampled.

As this discussion remains mostly theoretical and based on logical deduction and analogies, rather than empirical observations, no conclusions are formed regarding expectations of North Korean tilt towards 'fail-safe' or 'fail-deadly' C2 procedures. The only conclusions I will make here is that North Korea faces some very demanding and potentially escalatory decisions regarding its nuclear C2. The second conclusion is that all of these considerations should be taken into account when assessing the risk of North Korean inadvertent nuclear escalation.

Chapter 7

Concluding Analysis: Key Findings and Implications for Other Emerging Nuclear Weapons States

Much of the thinking on deterrence stems from the Cold War and concern superpower interactions. Regional powers may experience this differently as they operate on a different level (for a comprehensive discussion see Narang, 2015). The focus on rational and calculating actors in deterrence theory often skate over the fact that deterrence is rooted in the strongest of emotions (Delpech, 2012, p. 22), namely *terror*.

The main conclusion here is that that terror is in fact acutely felt in North Korea, due to an asymmetrical military balance with its adversaries. U.S. and South Korean military doctrines and operational plans place a premium on counterforce and threaten key North Korean nuclear infrastructure. Past American military campaigns against regimes that share similarities with the North Korean leadership strongly influence the latter's threat perceptions and has led to the state adopting an asymmetric escalation posture despite the known risks it poses for inadvertent escalation. Together these cause crisis instability in the form of first-strike incentives for both parties, and 'use it or lose it' pressures for Kim Jong Un.

Additionally, scholarship on regime type and leader type suggest there may be a case for including these variables when studying deterrence relationships of emerging nuclear weapons states. 'Deterrence is based on perceptions and calculations by fallible human beings' (Panda, 2020, p. 72), and human cognitive limitations in line with Jervis' (1976) expectations seem to make these parties tilt towards worst-case assumptions about one another and create a potential for misperceptions of intentions and motives both ways.

7.1 Summary of Key Findings and Tentative Conclusions

In the theory chapter, three mechanisms were presented which could increase the chances of inadvertent escalation. These were the security dilemma, offensive inclination of the military and the fog of war. Findings in the three previous chapters indicate that each of them is present in some form for North Korea and the U.S.-South Korea alliance. The first two stand out as acute, and the third is likely to pose significant risks of inadvertent escalation although they are difficult to assess empirically. A highly asymmetric military balance between these nuclear-armed adversaries seems likely to increase levels of uncertainty and tilting especially the 'underdog' state towards worst-case assumptions and high threat perceptions. When this is combined with one side's choice of an aggressive nuclear doctrine and an offensive counterforce doctrine with the other, the general picture that emerges is – quite literally – an explosive one.

Key assumptions underlying the logic of all arguments presented here is that neither North Korea, nor the U.S. or South Korea, wants a nuclear war to break out. All parties are also well aware that the military balance between the DPRK and the U.S.-RoK alliance is highly asymmetric, to the disadvantage of the former. Another underlying assumption is that if the U.S. or South Korea took unilateral action towards Kim, the other would soon be implicated. War is an outcome Kim Jong Un will avoid up to the point he is convinced the loss of his life and family legacy is inevitable and would rather go down 'in a blaze of glory' than openly acknowledging defeat and lose his grip on power (Welch, 2018). If the following statement by the regime is any indication, he is not likely to back down if the U.S. and South Korea crosses this threshold: 'We will never barter the dignity of our supreme leadership for anything, but defend it at the cost of our lives' (KCNA Watch, 2020a).

7.1.1 The Security Dilemma

In the assessment of the security dilemma, the findings indicate that these adversaries display a great level of animosity towards each other. Further, it seems reasonable to assume that this is caused by uncertainty of both military capabilities and poor understanding between them. Inadequate strategic communication through established channels makes it particularly challenging for both parties to correctly interpret and assess the motivations and intentions

behind the other's actions – in peacetime. Logically, this problem could be greatly exacerbated in a context of military hostilities having broken out.

The difficulty of correctly interpreting the actions of the adversary could stem partly from insecurity regarding leader preferences and personality, as: 'Perceptions mingle with emotions and even inter-personal relationships between leaders' (Panda, 2020, p. 73). American media display an inability to decide on whether Kim Jong Un is a trigger-happy madman whose intentions and motivations are mysterious, or a strategic mastermind who calculates his every move towards long-term objectives. Some findings indicate that a milder version of such frustrations has been evident among some high-level U.S. military officers and policy-makers over the course of Kim's years in power too. The truth is more likely that Kim is neither an irrational madman nor a perfectly rational mastermind – just plain human.

A leader who has grown up in a highly ideological regime like North Korea's, destined to ascend the throne of his family dynasty, is unlikely to remain unfettered from its value-system and collective beliefs. For North Korea's part, their past history and the 'ideological tint' through which it interprets the actions of its main adversaries is likely to influence threat perceptions of the U.S. and South Korea. This is not an exclusive problem for North Korea though, and ideological beliefs are not singularly problematic when it concerns an ideology which seems peculiar and strange to Western observers. The U.S. has cultivated internal and external images of itself which is likely to influence how they perceive adversaries too, and it is in the clash of these that problematic interaction and perceptions of the adversaries might arise. In other words, it is not necessarily *one* side's convictions that make a relationship estranged, it is the width of the ideological divide between two adversaries which is hard to bridge the farther away from each other they are.

Leader personality and regime type may influence how adversaries perceive each other and subsequently the severity of escalation pressure. It could cause and continue to feed poor mutual understanding of intentions and motives, which in turn impact on the parties' threat perceptions. Although there are difficulties in distinguishing and likely overlaps between regime type and leader personalities, they should be studied in more detail with regards to emerging nuclear weapons states. Launching a nuclear weapon is a decision limited to few individuals, and so their beliefs, deep-seated values, predispositions and biases can and do matter. As relevant, reliable and valid empirical observations for individual-level analysis of

leaders are hard to come by, the tentative conclusion here is that it constitutes a potential source of insecurity and inadvertent escalation pressure.

As for the influence of geography, North and South Korea constitute a compact theatre of war which imposes constraints and imperatives on their deterrence options. Kim Jong Un has for now refrained from strengthening deterrence through adoption of the riskiest alternatives, like dispersing his nuclear forces across the country and pre-delegating launch authority. Whether he chooses to deploy his nuclear options in ways that seriously heightens risk of inadvertent or accidental launch in the future will depend on his sense of insecurity and faith in his ability to launch a retaliatory strike. Technology which blurs the line between defensive and offensive measures, in the form of missile defences like THAAD and perceived U.S. cyber capabilities, will contribute to these decisions.

7.1.2 The Offensive Inclination of the Military

Both sides here display a preference for offensive action, whether it stems from military organisations or political leadership. Both sides face incentives to strike first *and* early in the event of imminent or ongoing conventional operations. What stand out as particularly worrying here is a toxic combination of counterforce doctrines and asymmetric escalation postures. Strategic instability on the Korean peninsula presents itself as profound. The common denominator of U.S. and RoK independent doctrines and joint planning is continued counterforce developments to offset and neutralize North Korean nuclear capabilities. As previously mentioned, this is likely to heighten risks of inadvertent escalation.

Kim Jong Un's perception of the U.S. and South Korea as hostile and 'out to get him' stems mainly from the continued emphasis on leadership decapitation. Fears of regime change could only increase in severity in the context of ongoing conflict. Kim faces intense first-strike incentives in crisis due to this. In a situation of ongoing conventional hostilities this would likely be exacerbated. Additionally, he would presumably feel an acute 'use or lose' dilemma quickly, as U.S.-RoK conventional counterforce pose a threat to his nuclear arsenals and their operations could inadvertently interfere with his nuclear forces. If this leads Kim to become an early crisis delegator, it would generate further and severe escalation risks.

7.1.3 The Fog of War

From the discussion of how the fog of war could cause escalation pressure on the Korean peninsula, the main take-away is that North Korean C4ISR pose significant challenges with implications for escalation pressure for Kim Jong Un in a situation where a conventional conflict breaks out. If his situational understanding deteriorates fast, his fears of a successful U.S.-South Korean surprise attack will in all likelihood rise. Rudimentary early warning systems contribute to this. The uncertainty could lead Kim to relinquish the so far tight civilian control over his nuclear forces by adopting riskier C2 procedures – although it may also be that the DPRK is not willing to run the risk of an inadvertent launch, and is in fact leaning towards 'failing safe'.

Limited knowledge about the exact choices of North Korean C4 has limited this discussion to a mostly theoretical endeavour. Still, it also amounts to a missing piece of the intelligence puzzle for the U.S. and South Korea, and entails the risk they could inadvertently interfere with Kim's ability to lift 'treasured sword' and actually use it when needed. Future developments in North Korean submarine forces will impact greatly on the risk of inadvertent escalation. Misperceptions or a breakdown of direct communication where launch authority rests on North Korean personnel with access to pre-mated nuclear-armed SLBMs is a cause for grave concern. So are the potential implications of offensive cyberwarfare towards the DPRK. However, for the time being, the potential for an unauthorized launch by North Korea seems low.

7.2 The General Picture

Kim Jong Un is aware that he is seen as a menace by its contiguous neighbour and the world's foremost military power. Coupled with the knowledge that existing U.S.-RoK operational plans are tailored to deal a swift and decisive blow to his regime by decapitating the leadership and sever him from his nuclear forces, he is left with little other choice than to be certain he strikes first in a conflict. Drawing on Posen's model, Talmadge (2017, p. 58) points out that the issue at hand is: '…whether the target state feared the erosion of its nuclear capabilities past some threshold considered vital to its security'. Kim could launch a nuclear first-strike for the purpose of military advantage, for instance to stop U.S. force mobilization or hinder

ongoing operations. Alternatively, he can signal resolve in the harshest way possible if he believes the U.S. and South Korea would back down and not retaliate.

Nuclear first-use hinges on Kim Jong Un's threat perception in a given situation. One can safely assume no leader would decide to cross that threshold lightly – after all, it would be an unprecedented event with unknown ramifications. Nevertheless, if he is truly convinced a fateful attack is imminent, escalating to the nuclear threshold would be his last, unfortunate but quite rational, resort. If ever there was a red line to cross, using a nuclear weapon for the first time since 1945 will be it. Whatever the target, neither the U.S. or South Korea, nor the international community at large, are likely to respond with condemnation and sanctions and leave it at that. First and foremost because it will be the ultimate confirmation Kim is too dangerous to be left alone. Secondly, because a lack of response will show all other regimes worrying about their survival that an atomic bomb is their sanctuary, potentially creating a proliferation cascade.

Based on this analysis of key elements in the relationship between North Korea and its two allied enemies, the risk of inadvertent escalation occurring in a conventional conflict scenario presents itself as much more than a remote possibility. The DPRK finds itself in an exceptionally hostile security environment considering it faces two adversaries who either single-handedly or in a joint effort could decide to use force effectively against it under certain circumstances. The possibility of an American-South Korean conventional campaign compromising Kim's nuclear forces to a point where he wonders if he could use them at all are present. Peacetime perceptions between these adversaries are already ones of hostile and unpredictable aggressors. It would go contrary to logic if these somehow improved if military hostilities broke out. This security environment is likely what has driven it to adopt an asymmetric escalation posture despite the known risks it presents for escalation. North Korean fears of regime change are likely real and have real influence on the risk of inadvertent escalation: '…as the saying goes, just because you are paranoid, does not mean someone is not out to get you. North Korean fears of pre-emption are not entirely misplaced' (Schneider in Smith, 2006, p. 86).

The scope of this paper has not been to cover *all* possible paths to deterrence failure between the parties. Although this is not an exhaustive analysis of all factors which could influence escalation on the Korean peninsula, it does not mean that the findings here do not carry

importance for theory and policy. In all, this application of Posen's (1991) framework has identified very clear dangers of inadvertent escalation in the dyad of North Korea and U.S.-South Korea. Finally, this shows that emerging nuclear weapons states may indeed be more prone to inadvertent escalation that other nuclear dyads.

7.3 Implications for Emerging Nuclear Weapons States

Findings here may have implications for other emerging nuclear weapons states. It presents itself as likely that other emerging nuclear weapons states and their adversaries will produce similar patterns of hostility observed here, based on their historical interaction, ongoing rivalries and military disputes, unbridgeable ideological divides stemming from leadership or regime factors, as well as domestic pressures. In all likelihood they will face the same kinds of uncertainty related to their retaliatory forces and second-strike capabilities, due to geography, technology and resource constraints. The conclusion emerging here is that escalation pressures outlined by Posen (1991) and in Talmadge's (2017) later work on the subject is in fact likely to be much more acute for states facing a hostile security environment in which they are pitted against multiple and/or stronger opponents with advanced counterforce, cyber and ISR capabilities and offensive styles of conducting military operations.

Arguably these implications make themselves particularly relevant for Iran. If the security dilemma is indeed exacerbated by asymmetry in military balance, this would likely apply to all future nuclear powers. They can expect a blanket sanctions regime to severely restrict its economic resources, and place corresponding constraints on weapons developments and modernization. North Korea has proven that it is possible to achieve, but it comes at a high price. Iran has already been subjected to UNSC sanctions related to its nuclear activity (Security Council Report, 2021b), and both unilateral and multilateral pressure to stop its nuclear weapons program through the Joint Comprehensive Plan of Action (JCPOA) (Davenport, 2021).

North Korea's compact geography influence its first-strike incentives and create trade-offs with regards to 'failing deadly' or 'failing safe'. This is likely to apply to Iran too, who faces its main adversaries in the U.S., Iran and Saudi-Arabia (Delpech, 2007, pp. 33–38, 65–70, 79–82) – who also happen to be allies, resembling somewhat the U.S.-South Korean alliance here. Iran

finds itself geographically close to two of its main adversaries. Israel is a nuclear state already and Saudi-Arabia is unlikely to rest easy and refrain from developing its own nuclear arsenal in response (Lippman, 2012, pp. 118–119). Such a nuclear triad would pose exceptional challenges for deterrence, crisis stability and escalation risk in an already volatile region.

Iran is, together with North Korea, placed among American top five security threats due to their cruise and ballistic missile developments (Pellerin, 2017), and in both 2010 and 2018 NPRs it is explicitly mentioned as a state *having not complied with their NPT obligations* (U.S. Department of Defense, 2010, p. 3) – one of the criteria of American potential use of nuclear weapons against an adversary – and a grave security concern (U.S. Department of Defense, 2018, p. 13). Indirect calls for stopping Iran from nuclear acquisition at all costs have increased with worries that the state is: '…falling into the hands of an increasingly *unpredictable* military clique' (Delpech, 2012, p. 59 [emphasis added]), echoing the sentiments surrounding the rationality and risk-willingness of North Korea's leadership. The less assertive civilian control over Iran's military could cause increased escalation pressure stemming from the offensive inclination.

Findings here indicate that adversary perceptions and the distinguishability of offensive and defensive acts are influenced by a range of factors, including but not limited to regime type and leadership characteristics. These seem to influence adversary perceptions in the relationship between the U.S.-South Korea and North Korea and is very likely to do so for Iran too. This statement echoes the logic outlined above regarding how adversary intentions are perceived as hostile due to issues of trust, poor communication, and ideological divide:

> If Iran were a peaceful, secure, and satisfied country – one that did not support terrorism, subvert American allies, try to overturn the regional status quo, and inflict harm on the United States in a multiplicity of ways – its nuclear program would likely not concern us at all. We don't fret about what the French will do with their nuclear arsenal, or the British, or the Indians, or even the Russians for that matter. We worry about Iran acquiring that capability because Teheran means us harm, and acts on that intention. (Pollack, 2013, p. 64)

Should Iran choose to acquire the bomb, it will face a similarly hostile security environment to North Korea, if not more so. Opinions expressed on the DPRK bear resemblance to explanations of and worries related to an Iranian strategy of 'opaqueness and deceit' aiming to

combine nuclear developments with negotiations (Levite, 2021), potentially driven by ‘a combination of paranoia and grandiose self-regard’. Findings on personalist dictatorship preferences could apply to Iran too, and the regime has certainly taken notes on the fates of Afghanistan, Iraq and Libya too. Iran has likely taken notes on North Korea as well, and may have decided that keeping its nuclear program a hedging option may accomplish more than actually crossing the threshold (Levite, 2021).

The above characteristics are examples of similarities between emerging nuclear weapons states which they do not share with their more established counterparts. These indications that emerging nuclear weapons states may differ from earlier nuclear powers, and could spark different kinds of dynamics when involved in an adversary constellation, should be taken seriously.

Chapter 8

Conclusive Remarks

The objective of this thesis was to assess escalation potential for emerging nuclear weapons states, and their bearing on deterrence and crisis stability, by asking why escalatory pressure and subsequent risks of inadvertent escalation could be more intense for such states. This thesis has built on insight from deterrence theories in general and focused on deterrence challenges outlined in the second chapter. By utilizing Posen's (1991) framework, which highlights three sources of escalation pressure, I have found that escalation pressure for emerging nuclear weapons states may indeed be more acute than for their more established counterparts for a number of reasons summarized in more detail in the final chapter of analysis.

Insecurity have led to established perceptions of adversaries as fundamentally hostile on both sides in the case of North Korea and the U.S.-South Korea alliance. This uncertainty stems partly from a military balance strongly in favour of the latter and their technological superiority, as well as geographical constraints of the Korean peninsula. Arguably, it also has roots in what seem to be an ideological divide these actors are unable to bridge. The lack of established and reliable channels of communication exacerbates this uncertainty.

Clear indications of an offensive inclination are also present for North Korea, the U.S. and South Korea. For the DPRK's part, its leadership remains pledged to a nuclear doctrine of first-use. This choice of an aggressive nuclear posture leads to a range of escalation risks in itself. Additionally, Kim Jong Un will in all likelihood experience acute 'use-or-lose' dilemmas enhancing his first-strike incentives early on in crisis, imminent and ongoing conventional clash with the U.S. and South Korea. That stems not only from an uncertain retaliatory capability, but also from the premium his adversaries place on offensive advantage evident in advanced counterforce capabilities, plans of pre-emption and past American military campaigns.

Although theoretical possibilities due to lack of data surrounding the parties C4ISR capabilities, one conclusion is that North Korea's situational understanding in the event of a

conventional conflict will degrade fast. The fog of war, namely the challenges associated with gathering and interpreting timely and correct information during hostilities, may intensify first-use incentives for the DPRK's leadership and heighten chances of an unauthorized launch of nuclear weapons. In the future, it could push Kim Jong Un towards early crisis delegation and risky C2 choices, to secure a second-strike capability or ensure a 'fail deadly' scenario.

Combined, the aforementioned mechanisms present a grim prospect for inadvertent escalation on the Korean peninsula. The utilization of theory in this thesis has been to apply Posen's (1991) theoretical expectations on inadvertent escalation, developed from Cold War superpower dynamics, to a contemporary case of an emerging nuclear weapons state in order to observe how they operate for new nuclear powers. By doing so, I sought to identify how emerging nuclear weapons states could pose different challenges to deterrence and crisis stability.

States vary in their perceptions of the utility of nuclear weapons. What stand out as the primary motivation of acquisition and use for this case is the quest for regime security. Nevertheless, after acquisition, an emerging nuclear weapons states may try to utilize their nuclear capabilities in relations with other states for purposes of bargaining or blackmail in line with theoretical propositions from chapter two. One could argue that the more a state relies on the power of their nuclear option in relations with other states, the more often they are 'used' in a broad sense. Logically, this may increase the likelihood of misperceptions and inadvertence where nuclear weapons are involved, in turn heightening the risk of actual use.

Emerging nuclear powers have, as earlier stated, some likely constraints on their choice of nuclear doctrine and posture. A state involved in interstate rivalries, who faces an exceptionally hostile security environment and much stronger conventional opponent(s), are more likely to opt for the most aggressive choice and threaten first-use in absence of a credible alternative. They will in all likelihood face acute first-strike incentives and 'use-or-lose' dilemmas in crises or conventional clashes, and face challenges in deciding on C2 procedures. Uncertainty in second-strike capability and the credibility problem could push them towards becoming an early crisis delegator, which increase the chance of inadvertent escalation through unauthorized launch.

Finally, emerging nuclear states and adversaries who differ much with regards to deep-seated beliefs and values may experience an additional challenge in bridging ideological divisions. The rationalist assumption is wholly necessary for analytical purposes, and leaders likely aim to be rational within their own cognitive and ideological boundaries. Nevertheless, problems may exacerbate with adversaries whose bounds on rationality are very much divergent. Unlikely to cause inadvertent escalation in themselves, leadership dynamics and regime characteristics could exacerbate uncertainty and threat perceptions.

All these challenges to established notions and assumptions of deterrence are highly relevant in adversary constellations involving emerging nuclear weapons states, as they influence insecurity and adversary perceptions. A conclusion from this study is that when emerging nuclear weapons states are part of a nuclear dyad, risks of inadvertent escalation do in fact increase. As this thesis has mainly covered factors which increase the potential of inadvertent escalation, further research could focus on factors which may in fact decrease it. This would contribute to a more nuanced understanding of these actors.

In that same line, further avenues of research should focus on the role of leadership and regime type suggested here, specifically with respect to their civil-military domestic organization's influence on nuclear-relevant matters, in more detail. Proliferation continues despite international efforts to the contrary, and recent states acquiring or aspiring for the nuclear option are perceived as unpredictable, unstable, unaccountable and occasionally irrational. Research shedding light on these atypical and so-called 'rogue' nuclear states on their own terms rather than established Western logics could contribute to lowering the potential for misperceptions, escalation and even further proliferation. The general framework of deterrence is constantly changing in line with new geopolitical constellations, technological change, and emerging nuclear states. Research should reflect these developments and the impacts these may have on deterrence in practice.

In all likelihood these challenges will remain persistent despite efforts to alleviate them. Nevertheless, a suggestion for future policy on nuclear weapons states naturally involve improving strategic dialogue between emerging nuclear powers and their adversaries. How to accomplish this, given the problems outlined above, are not straightforward. Nevertheless, the more channels of communication one can create, the more likely one can alleviate the security dilemma dynamics and potentially the fog of war. All three mechanisms could also become

less pressing for emerging nuclear weapons states with consistent attitudes towards lowering tensions. Coupling efforts at dialogue with continued offensive developments in weaponry, cyberwarfare and counterforce has yet to succeed. In this lies an implicit assumption of acknowledging such actors as de facto nuclear powers, which Western policymakers aiming for 'complete denuclearization' may be hard pressed to accept. However – if the findings here are any indication – denuclearization now presents itself as out of touch with realities. Efforts of transparency regarding capabilities and mutual arms control agreements are alternative options, but again may be regarded as too costly.

Offensive cyberoperations have particular implications for the fog of war mechanism. Although 'left-of-launch' approaches to deny a future nuclear launch by North Korea or another emerging nuclear power is doubtlessly tempting, they directly influence incentives for risky pre-delegation moves. As this would be the definition of counterproductive for those seeking to lower risks of inadvertent escalation, an implication for policy would be to refrain from active cyber interference (Panda, 2020, pp. 242–243). Considering the 'cat's out of the bag' already, this may have limited effect, but continuing offensive cyber moves are unlikely to do any good for strategic stability. A more controversial suggestion made by some is to assist emerging nuclear states in developing C2 procedures which favour assertive civilian control (Feaver, 1992, pp. 185–186), even if this would constitute a breach of the NPT.

Finally, decision-makers and policymakers alike should make honest attempts to understand the rationale for emerging nuclear state behaviour, rather than leisurely declaring destabilizing behaviour to be 'business as usual'. Rather than complacently settling for an assumption that North Korea, Pakistan or future states similar to them are inherently provocative, those in power to affect risks of inadvertent escalation should ideally do everything in their might to mediate them. It will likely hurt to do so, and initiatives for that purpose may be regarded as compromises on one's own security. Nevertheless, emerging nuclear states do not create or intensify escalation pressure all by themselves – as they say, it 'takes two to tango'.

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