

# The sun rises in the East

A comparative case study of India, Pakistan and China's  
increased nuclear stockpiles in the Second Nuclear Age



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# Abstract

The world has entered the Second Nuclear Age. New structures and dynamics are argued to be present within the context of nuclear weapons. The states India, Pakistan and China are three cases where the nuclear stockpiles are increasing and becoming more technological advanced. The hypothesis of this paper is that the increase of nuclear stockpiles in the cases is due to a dynamic characteristic of an arms race, the logic of deterrence and the action reaction model. This paper conducts a comparative case study through structured and focused comparison. The study uses Barry Buzan's theoretical framework of the action-reaction model in order to examine the states action in regard to the dynamics of an arms race. Indicators, stemming from the action-reaction model, is used to examine the three cases, beginning with the Indian nuclear testing in 1998 and ending in 2014. The results indicate that that India and Pakistan's actions adhere to the logic and dynamic of a nuclear arms race, while the case of China could not be significantly determined to be part of the arms race.

*Key words:* Nuclear weapons, arms race, India, Pakistan, China, deterrence, Second nuclear age, nuclear stockpiles, action-reaction model,

*Character amount:* 69 106

*Word amount:* 10 922

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# 1 Introduction

After the Cold War a breeze of relief swept over mankind as the over-arching nuclear threat seemed to have ended. The sense of an impending doom was a result from two super powers and their nuclear escalation, which caused fear of a nuclear winter. This was thankfully averted along with the hegemonic power struggle followed by the Soviet Union's descent from power, as well as a step back from that seemingly very uncertain future.

The immense destructive capabilities of nuclear weapons have already marked humanity and the importance of not letting it happen again is immense. Without sounding too alarming, there are indications that a new era of nuclear weapons and arms racing is currently present in international politics. In a report from Koblentz, named "Strategic Stability in the Second Nuclear Age", it becomes apparent that we already have made way into this new nuclear age. The foreword to Koblentz's report is written by Richard N. Haass, the president of the Council of Foreign Relations, who paints the picture of a new and more complex world of nuclear weapons. Haass claims that the structure of the new era differs greatly from the nuclear age of the cold war: a hegemonic and dual nature of two super powers, namely the U.S and Soviet Union (Koblentz, 2014: vi).

Koblentz's report presents data indicating an increase of arms expenditure and nuclear stockpiles from the states India, Pakistan and China. This is argued to be part of a "security trilemma" and a dynamic that is seen as a great challenge in the "second nuclear age". While these states seem to be gearing up, other states as the U.S and Russia are seemingly disarming their nuclear arsenal to some degree, or at least stagnating them (Koblentz 2014: 7-8). I argue, that the rising nuclear stockpiles in South Asia and China have to be examined, partly due to the importance of understanding nuclear threats and strategies in this "second nuclear age" and it's new political structures, and partly due to the history of conflict regarding the involved states, namely India, Pakistan and China.

## *Research question:*

How can the increase of nuclear weapons stockpiles in India, Pakistan and China be explained?

## *Hypothesis:*

The hypothesis of this paper is that the increase of nuclear stockpiles in the states of India, Pakistan and China is due to a dynamic characteristic of an arms race, the logic of deterrence and the action-reaction model.

The aim of this study is to examine and explain the increase of nuclear weapons stockpiles and arsenals. This will be done through a method of process tracing and a structured, focused comparison, in accordance to Alexander L. George and Andrew Bennett's book "Case Studies and Theory Development in the Social Sciences". The theory that will be applied is the action-reaction model, presented by Barry Buzan in his book "Strategic Studies – Military Technology and International Relations". This will also implement the notion of questioning the realist view of interstate politics and propose that it still bears strong evidence in the case of deterrence and arms race.

The dependent variable, which this study will try to explain, is the increase in nuclear stockpiles in the states of India, Pakistan and China. The independent variable is the level of arms race in the states. The independent variable derives from Barry Buzan's action-reaction model and his "idioms". These "idioms" will be used when constructing the main indicators for the independent variable.

With three separate cases this paper will investigate political actions, similar/dissimilar weapons system, deployment patterns and strategic doctrines in order to determine the relation between the states from the action-reaction model. In order to examine these aspects, this study will treat a 16-year period, stretching from the Indian and Pakistani nuclear tests in 1998 to the year of 2014. The focus of analysis will be the examination of the patterns of actions by the states as well as the states behaviour towards conceived threats against external forces.

## 1.1 Relevance

In light of this report from the Council of Foreign Relations, I find that the term "second nuclear age" seem to be a rather accepted term to define this new era of nuclear powers and structure. Given that this claim is still rather new I also find it very important to delve deeper and investigate further. The trend of India, Pakistan and China makes for interesting cases in which the behavioural patterns of these states could shed light on the structures regarding nuclear weapons within international system.

I find that this study is relevant to peace research since theoretical arguments of arms racing and deterrence have ability to contribute to policy-making and thereby affect the method of the dealing with threats. The realistic notions of for example deterrence, MAD (Mutual Assured Destruction) or security dilemma has a presence in the policy-makings in foreign politics. I argue that the importance of studying these phenomena and claims of a new nuclear

age is great. I also argue that it bears importance outside the peace and conflict research community: The use of nuclear weapons and its extreme destructive power effects everyone on this earth. In a simulated nuclear weapons exchange between India and Pakistan, with 100 nuclear detonations, the consequences would be dire to say the least. It would result in a “nuclear winter” which would block out the sun and have great affect on the atmosphere and climate (Berhavesh, 2015).

## 1.2 Material

The empirical findings and analysis of this paper will be based a combined use of Stockholm International Peace Research Institute’s (SIPRI) annual yearbook, scholarly articles and statements and actions from representatives of the three cases state power. This study uses the SIPRI yearbooks from 1998-2014. In some instances, the data have been taken from a summary that contains the essential data and statistics that year. The process of data gathering has mainly been going through each year with focus on the three states. This has allowed me to pinpoint and gather actions and event of value to this study. This has later been supported with academic articles and journals in order to delve deeper into the findings.

## 1.3 Timeline

The timeline for which this study is placed in, there has been several aspects to consider. I have chosen to start my point of interest as of the Indian and Pakistani nuclear testing in 1998 and end at 2014, where the current SIPRI-data stops. The Indian and Pakistani nuclear testing marks a significant change to the dynamics of relationship regarding the three states studied, given that it was established that all three states were now nuclear powers. The timeline ends in the year 2014. I will include background empirical findings to give a contextual and historical account for the relationship building up to this point, but have chosen to ultimately start at this point. This allows me to still observe events that are significant to my hypothesis and theory while still incorporating the contextual background to my analysis.

## 2 Theory

There has been a large body of research regarding arms race and deterrence. The subject of deterrence was a large point of interest during the Cold War and the U.S-Soviet rivalry. Researchers such as Kenneth Waltz, Robert Jervis and Schelling have largely contributed to this field. Following the end of the Cold War the focus on nuclear deterrence was reduced and conventional deterrence was also included to the general theories of deterrence (Huth, 1999: 26). There has been a large part of more recent research devoted to nuclear deterrence and terrorism. The research is changing by mainly moving away from the symmetrical situation of a deterrence relationship toward more asymmetrical one. These changes are presented by Robert Jervis as four waves of deterrence research. The latest wave is the fourth wave, in which the aforementioned shift in symmetry focus is present. This new wave of deterrence research reflects a new time and context. This meaning a shift in focus from the superpower-relations of the Cold War, towards subjects or tactics like terrorism or insurgency (Knopf, 2010: 1-3).

### 2.1 Barry Buzan and Strategic Studies

This study uses Barry Buzan's work from his book "Strategic Studies – Military Technology and International Relations" as a main theoretical framework. The focus of Strategic Studies is mainly on military strategy. Buzan uses Hedley Bull's wide definition of strategy that is "the art or science of shaping means so as to promote ends in any field of conflict" (Buzan, 1987: 2-3). Buzan explains the theory's assumptions through this definition. Buzan writes that the means in which to be shaped are military ones, the field of conflict is the international system and the ends are political objectives of significant actors in the international context. Since military power mainly derives from the state this will be the main significant actors within this framework (Buzan, 1987: 3). Due to lack of overarching control and government in the international system, Strategic Studies therefore rests on classic realist assumptions of anarchy. The states within this system all possess, to some degree, the capacity to use force against each other, while the interests of the states clash frequently and often intensely. This leads to the threat of violence or force, being a continuous feature with the anarchic structure (Buzan, 1987: 6).

## 2.2 The Second Nuclear Age

In the report issued by the Council of Foreign Relations, written by Gregory D. Koblentz, a new nuclear age is upon us following the Cold War. The report declares that after the Cold War the nuclear picture has become more complex. The author points toward Asia as he claim that power rivalry of Europe has shifted to Asia in which an emergence of nuclear weapons can be seen (Koblentz, 2014: 3).

This second nuclear age brings on new dynamics and geometry of deterrence according to Koblentz. The security dilemma of the Cold War between the U.S and the Soviet Union would be based on two states struggling for security (Koblentz, 2014: 20). Koblentz refers to Linton Brooks and Mira Rapp-Hoopers theory of “the Security Trilemma” in which nuclear states faces threats from more than one source. This theory applies the same logic of the security dilemma with the extension of adding a state to the mix. Any action of one state to increase its security against another will also have the effect of making a third state feel less secure. This aspect is one of the main arguments of Koblentz: There are new structures and dynamics in the international system regarding deterrence and nuclear weapons (Koblentz, 2014: 20). Koblentz points to Asia and claims that this dynamic is present and particularly strong. Koblentz also mentions the technological developments within the nuclear warfare, such as missile defence, anti-satellite weapons and “cyber weapons” (a malware agent intended for military intelligence objectives), which are also affecting the dynamics of deterrence. These developments enforce the dynamics of an action-reaction cycle and the sense of a zero-sum approach, which feeds the security trilemma (Koblentz, 2014: 21).

## 2.3 The Action-Reaction model

The action-reaction model stem from the classical view of an arms race, which is build around the metaphor of two states racing each other in terms of their armaments and military. The basic logic of this model is the notion that states bolsters and increases their military armaments because of external threats perceived from other states. The theory of the model is that arms races are mostly driven by external factors to the state. The underlying logic of the arms race rests on the concept that an act from the state to increase its military strength will be raising the level of threat perceived by other states This will result in the other state reacting upon this increased threat and also increase their military strength. Here lies the action-reaction model (Buzan, 1987: 76). Barry Buzan compares it to an international market, in which the currency is military strength. Buzan explains the states motives to increase the military strength as either seeking security against threats from other states or to increase the states own power to achieve political objectives against other states interests. The balance of

the arms race is determined by how much the states are willing to drive up the price of military strength and security. The counter pressure in this balance is based on the responses from the “opposing” states in the arms race, as well as the regional and domestic capabilities regarding resources (Buzan, 1987: 76).

The action-reaction model is, as mentioned above, founded in the classic realist notion of an international system with an anarchic structure. The actors, mainly states, within this system are constantly posing a potential threat against one another and have to act towards ensuring their own survival, welfare and independence. Buzan argues that this anarchy at the international level allows and produces military competition forms of political relations, within the concept of the action-reaction model (Buzan, 1987: 77).

These aforementioned set of conditions is what constitutes the so called “The security dilemma”, which is a widely used term when explaining the dynamics of an arms race. In short, it can be said that these conditions poses a dilemma in that when states are acting to increase their own security, they are in fact negating their own action while increasing the external threat. When the state increases their own security it will lead to other states feeling threatened, this will result in a countermeasure that negates the initial secure measure and in turn lead to a new action of security strengthening. This logic is closely connected to the action-reaction model (Buzan, 1987: 78).

### 2.3.1 Idioms of the Action-Reaction model

Barry Buzan identifies a set of actions, which he calls idioms, which marks the types of actions that states can take within the process of an arms race. These are the following:

- Dissimilar weapons systems
- Military expenditure
- General shifts in perception
- Deployment patterns
- Strategic doctrine
- Political actions

#### ***Military expenditure***

The idiom of military expenditure is aimed to measure the level of over-all military strength, which means conventional military capacities as well as nuclear expenditure. This is argued by Buzan to be most accurate when studying the expenditure as a percentage of the gross national product (GNP). Buzan argues that this idiom is useful when determining whether it is an arms race or simply a maintenance of the status quo. Studying of this idiom would require a great transparency within the states military budget and expenditure. (Buzan, 1987: 79-81).

### ***Deployment pattern***

The idiom of deployment pattern is issued to incorporate the aspect of other action and reaction options other than the increase of military expenditure and strength. It references to the act of changing the military deployment pattern in order to increase the outgoing threat towards opposing states or decreasing the outgoing threat / making them less vulnerable for military threats (Buzan, 1987: 82).

### ***Simmilar/Dissimilar weapons***

The idiom of dissimilar weapons system is defined in terms of weapons system and the countering effect of for example anti-submarine, anti-aircraft or anti-missile systems. It is also argued that the idiom could be seen in terms of the over-all arsenal of the states and how the states chose to act in regarding to the other states war fighting capabilities. This could serve a purpose in this study, due to the interesting aspect of looking at eventual counter-strategies between the states military system. In the case of nuclear weapons it would be a legitimate aspect due to the nature of nuclear weapons and the development of defence systems (Buzan 1987: 80).

### ***Strategic doctrine***

The idiom of strategic doctrine could be a relevant aspect when investigating the relations between the states in question. With strategic doctrine it is simply stated that changes in the states official code of response toward actions by an opponent. In the matter of an idiom by Buzan it is used as determining whether the state's military strategy is changed from war fighting to deterrence, which in the cases of this study doesn't apply (Buzan, 1987: 82).

### ***Political actions***

"Political actions" is a rather broad term and is defined by Buzan as an action that may trigger a military "reaction". Buzan gives the example of either when states increase their military strength in response to "an unleashing of revolutionary energy in a rival", or as a response to the "use of force by one's opponent in such a way as to suggest that the probability of conflict is rising" (Buzan, 1987: 81-83).

### ***General shifts in perception***

The idiom of general shifts in perception plays an important role in the action-reaction process according to Buzan. The states shift toward or away from hostile views of the opponent can indicate a significant shift towards an arms race (Buzan, 1987: 82).

## **2.4 Definitions**

It will be important to be aware some of the terminology surrounding nuclear weapons, more specifically the difference between tactical and strategic nuclear weapons. The terms emerged

during the 1950s and the cold war and was created to define the different strategic uses of nuclear weapons, but to this day the terms are somewhat diffuse and lack an authoritative definition. In this study, strategic nuclear weapon is defined as nuclear weapons deployed towards target within a strategic plan, such as military bases or cities. Tactical nuclear weapons however are defined as battlefield weapons and are primarily targeting military forces and/or installations. It is also considered that tactical nuclear weapons have a smaller yield and blast radius than a strategic nuclear weapon. (Khan, 2013: 404).

### 3 Method

My intention with this paper is that, through a method of structured and focused comparison, accomplish a qualitative case study with elements of process tracing. The method of structured and focused comparison derives from the term, coined by Alexander L. George and Andrew Bennet in their work "Case Studies and Theory Development in Social Sciences".

This method is "structured" in that it will use constructed general questions, reflecting the research question, to each case in order to guide and structure the collected data. This allows for studying the data and empirical findings from the different cases in a systematic and comparable manner, resulting in a more systematic comparison of the cases (George, 2005: 67). These general questions, will be in the form of the four indicators I have constructed from Barry Buzan's "idioms". These will guide me in the empirical findings and make the result more systematic and comparable. The method is "focused" in that the scope of analysis is only directed toward certain aspects of the examined cases. The method is intended to study historical experience in a way that would allow for information regarding foreign policy problems. The authors bring up the phenomenon of deterrence as a subject that would require this sort of method. The method will allow me to find explanations in each case of said phenomenon and put it in a more complex theory (George, 2005: 67). The importance of said focus will mean, for this study, that when choosing historical aspects and events, it will be of utmost importance that these historical episodes will be selectively focused in accordance to the theoretical framework chosen (George, 2005: 70).

The dependable variable of this study is the increase in nuclear stockpiles in India, Pakistan and China. The independent variable, which means to explain this increase, is the occurrence of a nuclear arms race. This simply mean the independent variable will determine whether or not the states are engaged in a arms race dynamic, in accordance with Barry Buzans theoretical framework of the action-reaction model, which would explain (?) the increase in nuclear stockpiles. The independent variable will be examined through four indicators that stem from Buzans "idioms". These indicators will determine whether the states action suggests that they are part of a nuclear arms race.

Alexander L. George anf Andrew Bennet present requirements that must be filled in order for the case study to be genuinely comparative. The first requirement is that of a clearly identified "universe", or rather the "class" of event. This means that it should be defined in what phenomenon my cases are instances of (George, 2005: 69). This mainly derives from the research objective, which in my case is a nuclear arms race and deterrence. The second

requirement is a well-defined research objective and fitting research strategy. This means that the selection of cases should be based on the aforementioned objective and because of reasons of availability or general interest. The third and last requirement from the authors is the importance of valid variables. The variables used should be of theoretical interest for the purpose of explaining the phenomenon (George, 2005: 69).

This study also claim the method of process tracing, in accordance to that of George and Bennet's model in their aforementioned mentioned work. This method is appropriate when the dependable variable is known, in this case the increase of nuclear stockpiles in India, Pakistan and China. The common application of this method is to commence with descriptions of the dependent variable, followed by arguing for its relevance and then finally posing the question "how?" (Esaiasson, 2012: 130). I find that this method will allow me to theorise on a category of cases as well as being able to explain individual cases. It bears advantageous aspects regarding theory development as well as theory testing and is a useful tool when generating or analysing empirical data on causal mechanisms (George, 2005: 223). A critical moment in this study is isolating the essential events leading to the outcome of the dependent variable. In Peter Esaiasson's book on methodology, he terms these events as "formative steps". These are moments that bear great importance in relation to the outcome and are therefore the main interest in the empirical findings. The approach to which these "formative steps" are identified consists of identifying the relevant actors and their actions. Following this step is the reconstructing of their choices and decision making (Esaiasson, 2012: 130) . The final step is translating these choices and decisions to general aspects or frameworks (ibid), which in this case is the action-reaction model by Barry Buzan.

Due to this study's lack of variance regarding the dependent variable, methods like Mill's method of agreement or method of difference will not be available for use. Process tracing allows for an alternative way to study causality when it's not possible with for example Mill's controlled comparison (George, 2005: 214). George and Bennet refers to Jack Goldstone's statement to why process tracing could be used to explain "macro historical" phenomena. Goldstone claims that "[t]o identify the process, one must perform the difficult cognitive feat of figuring out which aspects of the initial conditions observed, in conjunction with which simple principles of the many that may be at work, would have combined to generate the observed sequence of events" (George, 2005: 206). This study builds on this logic of initially defining the set of variables, in conjunction with the principles of the theoretical framework of Buzan. This can later be used for explaining the "observed sequence of events", namely the increase of nuclear stockpiles in the three cases (George, 2005: 206).

This study will be constructed in a way that corresponds to these principles of structured and focused comparison. This will in reality mean that each case will be studied individually with analysis deriving from the independent variable, namely the four indicators political action, strategic doctrine, similar/dissimilar weapons system and deployment pattern. Each case will be examined within the set time frame and with these indicators in mind. It is therefore

important to keep the study's objective in mind and adhere to a set of questions that will be the same for all cases (George, 2005:71). The indicators that I will use when examining my empirical findings are connected to the "idioms" presented by Barry Buzan and his Action-Reaction model. This simply means that when studying and analysing the empirical data there will be a set of actions or "idioms" that correlate with the action-reaction model and an arms race.

### 3.1 Operationalization

This paper intends to use Barry Buzan's "idioms" as indicators for the independent variable. The operationalization of these "idioms" to indicators will be presented here.

Regarding the idiom "military expenditure" it becomes clear that this will not be a viable or possible feature in this study. The matter of transparency regarding the states nuclear expenditure is extremely low and often hidden within the larger military expenditure of the state. This means that investigating this will not yield any viable result while it would be extremely time-consuming. I have therefor chosen not to include this in my study.

The idiom of "general shifts in perception" is also an idiom that will be very difficult to investigate. Due to the nature of this study, there is not room for an investigation of all three states and their "general perception" regarding other states. This aspect becomes somewhat overly broad and out-of-scope when studying three states with limited public statements regarding their perceptions of other states. I find that this aspect could be partly included in the idiom of political actions, as a way to still incorporate the aspect of perception in political actions and responses. This would be possible by taking into account if there are any changes in threat-perception in official statements.

#### ***Political actions***

Buzan defines this idiom or action as "an action that may trigger a military 'reaction'". Buzan gives the example of either when states increase their military strength in response to "an unleashing of revolutionary energy in a rival", or as a response to the "use of force by one's opponent in such a way as to suggest that the probability of conflict is rising" (Buzan, 1987: 81-83). This will take account any actions which could trigger a reaction from on of there states. This will also implicate actions that are taken by the state that could be viewed as an escalation in the rivalry or arms race. An action that clearly and significantly can be viewed as a an action to increase the own states security while at the same time leaving room for a reaction on the other state's part. It will be important to prove that the action did in fact trigger a reaction and not simply just claiming so. This will be a difficult task given that the

explicit motives of the states cannot be strictly determined, but with substantial and reliable sources it can be investigated.

### ***Strategic Doctrine***

The idiom of strategic doctrine will be a relevant aspect when examining these cases. The strategic doctrines in these cases will mainly consist of the states nuclear doctrine as well as their nuclear posture. Changes in this posture will indicate whether the state is increasing or decreasing the threat perceived from other states. This will be examined through policy documents, official statements and articles regarding the states nuclear policies. The issues of no-first-use and “minimum credible deterrence” will be a focus point. No-first-use is a policy regarding in what manner nuclear weapons will be used, more specifically that the state would not use nuclear weapons unless it was used on it.

### ***Deployment patterns***

The idiom of deployment patterns will be investigated by examining the states military actions regarding their military troops and weapons systems, more specifically how they are stationed, organized and used with regards to external threats. This will more specifically aimed towards the nuclear delivery systems and the development of ballistic missiles.

### ***Similar/Dissimilar Weapons systems***

The idiom of “dissimilar weapons systems” will be investigating by looking at the states military development and determining any possible “countering” of weapons systems. Regarding nuclear weapons system there are several weapons system that could be seen as “countering” weapons system. In this study systems like anti-satellite, anti-missile and ballistic missiles will be the main focus point.

When examining these actions it will come to a decision of whether the action is a part of the arms race dynamic or not. This will rely partly on my own analytic interpretation but always in conjunction with the action-reaction model and its claims.

## **3.2 Case selection**

The case selection for this study has not followed the classic approach of a case-selection design. It has been more of a strategic choice of cases, where all cases share similar value in their dependent variable. In all three cases of India, Pakistan and China there has been an increase in nuclear weapons stockpiles and arsenal. At the same time other nuclear weapon countries have decreased or stagnated in their arsenal. What this study is aiming to do is to investigate and explain the increase in these three specific cases and therefor will only focus on these cases.

## 4 Results and analysis

### 4.1 Introduction

The three states that I intend to study share a common history in conflict and border disputes. The relationship of the three states could be defined as a strategic triangular relationship, in which all three have nuclear weapons and the necessary technology to deliver them, along with an asymmetrical threat perception. Pakistan's nuclear strategy is toward India as a threat; India has a nuclear deterrence aimed at both Pakistan and China, while China's threat is mainly focused around the U.S. Both China and Pakistan have a history of conflict with India through the sharing of borders and longstanding animosities. It could be argued that this strategic triangle is unique in that the three states are nuclear powers (Bano, 2015: 123).

Estimating the nuclear stockpiles of these three states is a difficult task. The transparency of said states is all but high, and the statistics from the SIPRI yearbook is primarily based on estimations, as they are making what they call "cautious estimates" in which the total nuclear stockpiles are presented. Lack of transparency in the weapons programs results in estimations based on for example the total amount of weapon-graded plutonium or uranium that is produced (Sipri 2004: 641).

In the case of India, this has made it hard to estimate its inventory of nuclear weapons. When estimating the amount of weapon-graded plutonium, it does not mean an absolute view of the state's nuclear weapons production, due to the lack of data regarding whether India has effectively used all of its available fissile material to nuclear weapons (Sipri 2004: 641). The same goes for the state of Pakistan in regards of nuclear stockpile estimates. The amount of weapons-useable fissile material that Pakistan has produced is unclear, which leads to a key uncertainty regarding its nuclear stockpile (Sipri 2004: 644). These two states are not part of the NPT and it is expressed as particularly difficult to obtain information about their nuclear arsenal (Sipri 2005: 579). From the collected empirical findings in this study, the sources are corroborating that there is an expansion in the states' nuclear stockpile. The lack of transparency however, makes it hard to present or generate statistics.

### 4.1.1 Nuclear warheads in stockpile from 2000-2014

Year/State	2000	2001	2002	2003	2004	2005	2006	2007
India	-	~20-30	30-35	30-40	30-40	30-40	c. 50	c. 50
Pakistan	-	~15-20	24-48	30-50	30-50	30-50	c. 60	c. 60
China	128	410	402	402	402	c. 400	c.130 <sup>1</sup>	c. 145

Year/State	2008	2009	2010	2011	2012	2013	2014
India	60-70	60-70	60-80	80-100	80-100	90-110	90-110
Pakistan	60	60	70-90	90-110	90-110	100-120	100-120
China	176	186	240	240	~240	~250	250

*Data from SIPRI Yearbooks 2000-2014.*

## 4.2 India

### **Political actions**

India conducted its first nuclear test in 1974, known as “Smiling Buddha”, under the label of a “peaceful nuclear device” (SIPRI 1999: 371). However, India did not become an evident nuclear power until 1998 when the state conducted five underground nuclear explosions, three on the 11<sup>th</sup> of May followed by two more on the 13<sup>th</sup> of May (SIPRI 1999: 371) (Bluth, 2010: 393). Prime Minister Vajpayee spoke of the worsening international environment as the reason for the nuclear testing, when addressing the Indian parliament on 27th of May 1998. No specific state was stated as “threatening”. In addition, testing nuclear weapons was not considered significant, but rather a general urge for protecting itself against any external coercion or blackmail. There was however some indication that there was a perceived threat from the state of China, which the prime minister suggested in a letter to the then U.S president Bill Clinton (Bluth, 2010: 396).

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<sup>1</sup> The significant decrease from the 2005 estimate to the 2006 estimate is due to an annual report from the US Department of defense on Chinese military power. The information gathered necessitated a reduction in the estimate of the size of China’s nuclear forces for the years 2001-2005 (SIPRI 2006: 657).

In 1999 there were an escalation in the Indian-Pakistan conflict in the Kargil district in the contested Kashmir, roughly one year after the nuclear testing. It signifies an important shift and a watershed moment in the conflict between the states, as it took place after the nuclear testing of the two states and the apparent situation of conflict between two nuclear powers (Bano, 2015: 126)(Blarel, 2015: 230). Pakistani military forces carried out an incursion across the Indian border to the city of Kargil. These incursions are argued to be due a Pakistani aim to exploit large gaps in the Indian defence and surveillance. India responded, without any declaration of war, with a full-scale war and pursued and pushed back the Pakistani forces by June 1999 (Blarel, 2015: 230-231).

On the 18<sup>th</sup> of July 2005, the US and Indian governments issued a joint statement announcing a framework for nuclear cooperation between the two countries (Bano, 2015: 124). The statement issued a draft, called “123 agreement” which specified the terms for an Indian-US trade regarding nuclear and fissile material and technology. The draft was part of the larger initiative called the Civil Nuclear Cooperation Initiative, which would resume the nuclear commerce between the states, which was until this point under sanctions from the US after India’s first nuclear tests in 1974 (Sipri 2006: 18, Sipri 2007: 20). The negotiations included a plan in which India’s nuclear programme was to be separated into civil and military components. By accepting the sale of nuclear fuel for use in chosen Indian civil nuclear plants, the limited domestic uranium supplies available to India would be freed up for military use, namely nuclear weapons manufacture (Sipri 2006: 660, 2007: 20).

The nuclear testing from India in 1998 triggered a series of nuclear testing from Pakistan. This action was explained by then Indian Prime Minister Vajpayee as a result of the increasingly threatening environment. In a letter to the US President it was indicated that China was perceived as a threat to India. This action marks the start of this study’s timeline and analysis. It becomes seeming plain that the model of action-reaction is relevant when observing this action, due to the Pakistani nuclear testing following the Indian “Smiling Buddha” testing. The nuclear testing of India constitutes a “political action” which triggered a response from Pakistan. The response of entering the nuclear race with its own nuclear testing shows clear indication of being an action-reaction response.

The Kargil conflict was to show the states relation following the acquiring of nuclear weapons. The Pakistani incursions across Indian borders and the Indian retaliation showed an escalation in the conflict and an increase in animosity between the two states.

The involvement from the US regarding the US-Indian Civil Nuclear Cooperation Initiative, marks a significant event. The trade made it possible for India to free up its domestic uranium supplies for other use, specifically military use. This would be sufficient enough to argue that the perceived threat from India would increase regarding Pakistan and China. The cooperation with the US would indicate a shift in the power balance in the triangular relationship between the three states. Following the US-India deal, Pakistan and China made a nuclear deal

agreeing that the Chinese would provide two nuclear reactors at the city of Chashma. This deal is not a unique incident between China and Pakistan regarding nuclear technology. The capability and technology to produce nuclear warheads was reportedly provided by China leading up to the Pakistani nuclear tests.

### **Strategic doctrine**

In August 1999 the Indian National Security advisory Board issued the Draft Nuclear Doctrine (DND) which stated that “India shall pursue a doctrine of credible minimum deterrence” which was based on a no-first-use policy. There were no official statements that specified the size of the nuclear stockpile that was required for a “credible minimum deterrence” (SIPRI 1999: 237). The requirements for “credible minimum deterrence” can be defined as:

- Sufficient and operationally deployable forces
- A reliable intact command and control system
- Effective intelligence and early warning system
- Credibility, which means the will to employ nuclear forces and weapons
- Comprehensive training and planning for the operations in line with the strategy

(Bluth, 2010: 396)

In October 2000 the Indian Air Chief Marshall Anil Yashwant Tipnis issued a statement that “India is committed to a no-first-use policy for nuclear weapons”, but it was later subsequently by an Indian Foreign Ministry official added that a “no first strike” policy does not mean that India will not have a “first strike capability”, he added that India was “working toward having a first strike capability” and it was a political decision whether or not to invoke the no-first-strike policy (SIPRI 2001: 479).

In 2003, India added a further expansion to its nuclear defence doctrine. It was stated that there would not be any use of nuclear weapons against non-nuclear states as well as an expansion of the operational parameters for India’s nuclear defence doctrine. It was also stated that India would not only use nuclear weapons when its territory was attacked nor if its military forces was attacked “anywhere”. This allows for the use of nuclear weapons in cases where an Indian military force is acting outside its own territory and is attacked from an external military force (Bluth, 2010: 396). It also added that the use of nuclear weapons could be allowed in the case of external attacks with chemical and/or biological weapons (SIPRI 2003: 12).

The Indian strategic doctrine was initially based on a no-first-use policy with the pursuit of credible minimum deterrence. The Indian nuclear deterrence lied in the simple fact that the state had nuclear weapons and would only use them in case of a nuclear attack on India. In 2000 it was added that India would still strive towards having a first strike capability, adding that it was a political decision whether or not to invoke the no-first-use policy. This leaves it open for interpretation what this really means regarding a possible first strike capability from

India. It could be argued that it is an increase in their nuclear deterrence, meaning that India would work towards being able to “strike first”, which would deter any behaviour aimed towards India. In 2003 the Indian nuclear doctrine was again expanded, to include that India would not use nuclear weapons against non-nuclear states. It also was expanded to include that India would use nuclear weapons if Indian military forces was attacked, including Indian forces operating outside of Indian territory. It also stated that India would be able to use nuclear weapons in cases of attacks with biological or chemical weapons. This shift in strategic doctrine is significant in regards to India’s perceived threat from external forces. The inclusion of biological and chemical weapons, as well as also including Indian military forces, outside of Indian territory, indicated that India increased its nuclear posture.

### **Similar/Dissimilar weapons system**

In 2004, Indian ballistic missile Agni III had its maiden flight, which declared a range that made nuclear targets deep inside of China possible. The Agni missile consists of a family of ballistic nuclear missile, which ranges from medium to intercontinental distance. The Agni I and Agni II was also completed and entered production in 2004. The tests were thought of as a response to the series of Pakistani tests of ballistic missiles conducted at the end of June the same year (Sipri 2005: 597, Sipri 2006: 662-663).

In 2006, it was reported that India had been developing a two-tier anti air defence, designed for intercepting both low and high altitude missiles. The high-altitude interceptor missile, called Prithvi Air Defense (PAD) was tested on the 27<sup>th</sup> of November and destroyed a missile in flight. On the 6<sup>th</sup> of December 2007 there was also a successful test of the low altitude interceptor missile, called Advanced Air Defense (AAD) (Bluth, 2010: 395). The high-altitude interceptors are developed to stop and defend hostile missiles from outside the atmosphere and the low-altitude are able to defend inside (Bluth, 2010: 397).

In May 2010, India announced that it was to launch its own anti-satellite program (ASAT) (Rajagopalan, 2011: 368). It is argued to be a response to China’s testing and developing of an ASAT-program. The Chinese test occurred in January 2007 and consisted of the state shooting down its own weather satellite. This is argued to have triggered a re-evaluation of the Indian traditional policy regarding militarisation of space toward having its own ASAT-program (Rajagopalan, 2011: 354).

In 2012, the Indian test of its intermediate-range ballistic missile Agni-V made it evident that Indian nuclear capabilities, in terms of range, was now including China and its mayor cities (Koblentz, 2014: 29). The Agni-V was test-launched on the 19th of April 2012 and on its maiden flight flew 5000 km before impacting it the designated target zone in the Indian Ocean. This would mark the first time that India could strike at major Chinese cities and would thus strengthen India’s nuclear deterrence capabilities (Sipri 2013: 315).

The Indian testing of the Agni III-missile made it clear that India was now able to reach targets within China. This makes it clear that India possesses a nuclear deterrence against China. The tests were also reported to be in response to the Pakistani tests of their ballistic missiles. This again shows indication of a response toward external threat, more specifically Pakistan.

The development of India's anti-air defence is indicating that India is "countering" and responding to a Pakistani threat, given the Pakistani missile developments during this time. India's developing of capabilities to intercept both low and high altitude missiles is an act of ensuring the state's own safety while decreasing a Pakistani nuclear deterrence toward India.

The announcement regarding India's launching of its own anti-satellite program is also an indication of an Indian response to external threats. With reports indicating that the Indian stance regarding militarisation of space was re-evaluated in the light of the Chinese testing of anti-satellite programmes, it also shows India's determination to strengthen its deterrence posture.

### **Deployment patterns**

In 2004, an Indian military doctrine called the "Cold Start" doctrine surfaced. It recommended a reorganisation of India's military forces. The doctrine has been denied by the Indian government and its officials but is widely claimed by analysts to entail a reorganisation of India's offensive troops (Koblentz, 2014: 27, Bano, 2015: 126, Sankara, 2015: 119), stationed in the middle of the country, were to be organised into smaller armoured strike "integrated battle groups", which would be stationed closer to the international borders and with a higher alert for offensive operations (Sankaran, 2015: 119).

The "Cold Start" doctrine, has to be carefully examined. The Indian government and its officials has denied its existence, while it has been argued by analysts that it in fact exists. Assuming that there is some truth to the aspect of an Indian re-arranging of its military forces, it would suggest that the deployment patterns would have had significantly changed, toward a more aggressive and combat-ready military force with an increasing threat assessment toward Pakistan.

## **4.3 Pakistan**

### **Political actions**

Pakistan confirmed its status as a nuclear weapon state in May 1998, following six nuclear test explosions, a few days after the Indian nuclear tests (Sipri 2005: 238). Pakistan did however acquire the capability to produce atomic warheads in the 1980s (Bluth, 2010: 394). The capability to produce nuclear weapons is due to assistance from China. China reportedly

helped and provided Pakistan with necessary equipment, warhead designs and missile systems which made it possible to continue its advancement in developing nuclear capabilities (Blarel, 2015: 229).

One year following the nuclear tests Pakistani military engaged in open military confrontation against India. This is mentioned earlier as the Kargil crisis of 1999 and led to a period of instability and two other crises, the India-Pakistan standoff in 2001 and the Mumbai attack in 2008, which triggered fear of a nuclear escalation (Blarel, 2015: 230). It is argued that the Pakistani military was aware and used the nuclear dimension when launching their military operations across the Indian border leading up to the Kargil crisis (Blarel, 2015: 230).

Following the US-India civil nuclear deal in 2005, China and Pakistan agreed to sign a nuclear deal, which China where to provide two nuclear reactors at the city of Chashma. (Bano, 2015: 124).

The Pakistani nuclear tests, being conducted a few days after the Indian nuclear tests, suggests a political action with the intent of a response. The Indian nuclear tests is indicated to have triggered Pakistan to also test their nuclear weapons, as a show of force and keep a nuclear deterrence. The capability to acquire nuclear weapons was reported to have been earlier than 1998, but the nuclear testing starts shortly after the Indian testing. This indicates the tendencies of an arms race, seeing the Pakistani need to respond to India showing its nuclear force.

The Pakistani incursions leading up to the Kargil crisis indicate that Pakistan does consider the nuclear threat when planning these operations. The fact that Pakistan carried out these operations knowingly of India's acquired nuclear weapons, while at the same time the Pakistani acquisition of nuclear weapons made it more probable that these incursions would not allow Indian forces to escalate the conflict further. The fear of a Pakistani nuclear strike has to be considered within the Indian decision-making, given the lack of a formal Pakistani nuclear doctrine.

### **Strategic doctrine**

The Pakistani strategic doctrine, regarding its nuclear posture, has not been formally declared. It has only been through public statements, determine to be based on the principle of "credible minimum deterrence". This means that Pakistan seeks deterrence against attacks aimed toward its strategic assets by securing them and with the threat of nuclear retaliation. It has been indicated through Pakistani officials that their nuclear deterrence is designated toward preserving its territorial integrity against an attack from India, as well as preventing any military escalation and balancing the Indian superiority regarding conventional military forces (Bluth, 2010: 397). Pakistan has a no-first-use policy against the first-use against non-nuclear states, which leaves for the possibility of a nuclear first strike against a nuclear state such as India (Bluth, 2010: 397).

The head of Pakistani's Strategic Plans Division Khalid Kidwai made one of the public statements made regarding Pakistan's nuclear posture in 2001. Kidwai stated four "thresholds" which the Pakistani nuclear posture was defined by. These thresholds were the following:

- The spatial threshold
- The military threshold
- The economic threshold
- The political threshold

These thresholds simply indicate the point for which a nuclear attack would be triggered. The spatial threshold is defined by a significant penetration of Indian military forces unto Pakistani territory. The military threshold is defined by destruction of a large part of the Pakistani military - to the extent that the Pakistani armed forces would lose cohesion and a defeat would be imminent. The economic threshold is defined an economic strangulation, for example a naval blockade of a city port. The political threshold is defined as if India would create political unrest and/or destabilise the state to the point where Pakistani provinces would be encourage to break away (Bluth, 2010: 397).

In April 2004, Pakistan's United nation ambassador, Munir Akram, reassured that Pakistan had still a "strong support" for non-proliferation but would continue its development of nuclear weapons in order to maintain its "credible minimum deterrence" (Sipri 2005: 599). It adhered that its main focus of deterrence was its rival India and explained the necessity of said development with India's major programmes for nuclear weapons, missiles, anti-missiles as well as their conventional weapons development (Sipri 2005: 599).

Since no formal nuclear strategic doctrine has been issued from Pakistan, there is some difficulty to establish Pakistan's nuclear posture. But since Pakistani officials, mainly through statements, have declared it to be based on a principle of credible minimum deterrence it can be stated to at least adhering to a nuclear deterrence. It is also stated the nuclear deterrence is aimed towards attacks from India. Since Pakistan has no no-first-use policy, regarding other nuclear states, the nuclear posture toward India is very unstable and uncertain.

The public statement made in 2001, by Khalid Kidwai, shows an indication in a change in strategic doctrine towards an escalation within an arms race. The stated thresholds (spatial, military, economic and political), makes it clear that the Pakistani upped the ante of their nuclear deterrence, by also including economic and political aspects to their nuclear posture's threshold.

In the statement made in 2004, the reasons behind the Pakistani nuclear weapons development was stated as a necessity given India's major programmes regarding nuclear weapons, missile,

anti-missile and conventional forces development. This indicates that the Pakistani nuclear deterrence and its nuclear weapons development is linked to the external threat of India.

### **Deployment patterns**

In 2004, in response to India's alleged "Cold Start strategy", the Pakistani Chief of Army Staff General Pervez Kayani responded: "Proponents of conventional application of military forces, in a nuclear hangover, are chartering an adventurous and dangerous path, the consequences of which could be both unintended and uncontrollable." (Bano, 2015: 126). The doctrine mentioned earlier, suggested a reorganising of the Indian military to be capable of rapid but limited retaliatory incursions into Pakistani territory in response to, for example, a terrorist event in India involving Pakistani actors (Sankaran, 2015: 121) Considering this, Pakistan had begun developing tactical nuclear weapons as a direct response to the alleged "Cold start" doctrine. These tactical nuclear weapons, such as the "Hatf IX short-range ballistic missile" (SRBM), went under the label of "full spectrum deterrence" (Koblentz, 2014: 28).

In March 2004, Pakistan test fired its new ballistic missile, Shaheen II, which had a reported range of 2000 km. The distance of this missile meant that it was now possible for Pakistani nuclear missiles to reach targets in most of India (Sipri 2005: 599).

On 17<sup>th</sup> on June 2010 Pakistan's Chairman Joint Chief of Staff Committee, General Tariq Majid, addressed the "Cold Start" security threat toward Pakistan. He stated:

We have to be mindful of the blatant pursuit of military preponderance in our neighbourhood. Growing power imbalance due to continuing build up of massive military machine, including both hi-tech conventional and nuclear forces, adoption of dangerous cold start doctrine and proactive strategy, more assertive posturing especially after very exceptional civil nuclear deal and notions of two front wars are all destabilizing trends, carrying implications for Pakistan's security. Therefore, retention of essential nuclear capability to maintain credible minimum deterrence against any possible aggression is our compulsion and not a matter of choice.

Khan, 2013: 408

In April 2011, Pakistan announced the latest addition to its expanding nuclear arsenal: a short-range tactical ballistic missile, the Nasr, reportedly designed to deliver low- yield battlefield nuclear weapons (Sankaran, 2015: 118). These reports are backed up by the Sipri yearbook of 2013 and 2014. In the SIPRI report it is said that unlike India, Pakistan is developing nuclear capable short-range ballistic missiles, that seems to be intended for battlefield missions (Sipri 2013: 319). It is also reported that these developments of SRBMs and cruise missiles indicate a growing concern in the ability for Pakistan to counter India's superior conventional military strength. It is also suggested that a shift in nuclear posture and nuclear response is happening with regard to India's "Cold Start" strategy, in that the Pakistani strategic planning has evolved regarding its use of nuclear weapons tactically (Sipri 2013: 320). The Nasr SRBM (Hatf-9) has a quick response system which according to the Pakistani military "adds deterrence value" to the nuclear posture regarding "shorter ranges" to be able to "deter

evolving threats”. The launcher for the missile is a mobile multi-tube launcher, which can fire a four-missile salvo. This further indicates that the weapons are intended for use against large enemy troop formations, and more specifically an Indian invasion of Pakistani territory (Sipri 2014: 331)

Aligned with the analysis, the development of tactical nuclear weapons points towards that the conventionally military weaker Pakistan, is acquiring these weapons in order to deter a stronger conventional force from its rival India (Khan, 2013: 402). The Nasr ballistic missile suggests that Pakistan has advanced its nuclear capabilities and planning to include the use of these “battlefield nuclear weapons”. This means that the operative nuclear warheads will be set in a more launch-ready positioning (Sipri 2012: 15). This is of large strategic significance due to the shift from deterrence regarding strategic nuclear weapons to also include tactical nuclear weapons.

In 2012 Pakistan conducted nuclear tests of mosts of its operational, serving or developing, nuclear missile types. It was also reported that Pakistan is expanding its plutonium production at its nuclear complex in Kushab, Punjab (Sipri 2013: 317-318).

The Pakistani response to the alleged “Cold Start” doctrine is of great significant. The statement made by the Chief of Army Staff General Kayani, indicate a Pakistani response to the doctrine makes it less important whether or not this doctrine is actually used or applied by the Indian military. This becomes the case since just the rumour or hearsay about such a doctrine, could trigger a reaction and escalation regarding the nuclear deterrence strategy between the states. The statement made 2010 by general Tariq Majid, made it clear that this “Cold Doctrine”, as well as the US-India civil nuclear deal, effected Pakistani security which would result in a continued development of Pakistani nuclear capabilities.

The expansion of the Pakistani nuclear arsenal with short-range ballistic missiles shows a shift in the deployment patterns of the Pakistani nuclear posture. These missiles would allow Pakistan to use nuclear weapons tactically against enemy military troops and installations. This expansion is “adds deterrence value” according to the Pakistani military and would “deter evolving threats”. This indicates that the Pakistani response to the “Cold doctrine” adds to the escalation within this conflict and adheres to the action-reaction model.

These evident shifts in deployment patterns indicate a nuclear arms race between Pakistan and India.

### **Similar/Dissimilar weapons system**

The development of the Nasr, short-range ballistic missile, indicated that Pakistan was shifting in its nuclear posture toward India. This shift, from mainly operating with strategic nuclear weapons to tactical battlefield nuclear weapons, would suggest that Pakistan is

countering India's superiority regarding conventional military forces. This simply means that by developing means to battle a superior military conventional force the Pakistani have tried to "counter". This behaviour and shift and countering regarding weapons and warfare show indication of being actions within an arms race between Pakistan and India.

## 4.4 China

### **Political actions**

In 1964, China conducted its first nuclear weapons test, which marked it as the last non-proliferation-treaty state to do so. The decision-making regarding its nuclear operations is not viewed as a democratically accountable one, and is ultimately under the control of the Chinese Communist Party. The military has a very important role in the nuclear politics, however not what would be called a determinant one, but is rather under the grasp of the "collective leadership". There is no evidence to show that there has been any legislature or parliamentary discussion regarding China's nuclear weapons (Sipri 2006: 231-232).

Following the India-US nuclear deal, China signed a nuclear agreement with Pakistan which entailed that China were to provide two nuclear reactors to Pakistan in the city of Chashma Bano, 2015: 131). The US-India deal has been of significant importance for China and Pakistan. It is argued that the reason for this deal is to be perceived as a part of a U.S strategy toward a containment of China; and for Pakistan it could be perceived as a tilt in the power of balance toward India (Bano, 2015: 124).

In 2000 there were deep concerns in China regarding US plans on establishing American national missile defence system (NMD) in Asia. Chinese officials and analysts argued that such a system was primarily aimed to counter China's limited arsenal of ICBMs, rather than what was the stated objective: The nuclear threat from Iran and North Korea. It was also stated that none of the intended threatening states have the capability to reach American territory with nuclear missiles. A senior Chinese Foreign Ministry official stated a warning toward the US that if such a decision to deploy an NMD system, it would pose "an unacceptable threat to China's security and might force it to significantly expand its own strategic nuclear arsenal" (Sipri 2001: 442).

The US-India civil nuclear deal was followed by Chinese-Pakistani nuclear deal resulting in China providing two nuclear reactors to Pakistan. The acts of China to try and balance out American influences in Asia seem indicative of a perceived threat toward the US. The reports that China assisted the Pakistani nuclear weapons development suggest this as well. The action does however not indicate an action which China is part of a arms race with Pakistan or

India. The Chinese statements regarding American national missile defence systems in Asia also indicate a threat perceived by China toward the US. The response, in which a Chinese Foreign Ministry official stated that it would force a significant Chinese expansion of its own strategic nuclear arsenal, reinstates this threat perception. The Chinese actions studied here do not show evidence of an arms race toward India or Pakistan through political actions.

### **Strategic doctrine**

China's view on deterrence has not changed after the Cold War, when there was a significant improvement to its resource-base as well as a shift from potential strategic rival from Russia to the U.S (Bluth, 2010: 392). China has since 1964, adopted a no-first-use doctrine and stated that it is not to threaten or use nuclear weapons against non-nuclear weapon states. China claims that the essential goal with its nuclear weapons is to “deter other countries from using or threatening to use nuclear weapons against China” (Koblentz, 2014: 14).

This was also reiterated in the Chinese Government's biennial defence White Paper, which was released in March 2011. The White Paper also repeated the Chinese earlier positioning regarding its commitment to a no-first-use policy as well as its limiting of nuclear weapons with regard to the minimum level required for deterrence and national security (Sipri 2013: 305-307). The latest of China's biennial Defence White Papers, published in April 2013, did not mention the previously commitment to a no-first-use policy. It stated that:

The PLA Second Artillery Force (PLASAF) is a core force for China's strategic deterrence. It is mainly composed of nuclear and conventional missile forces and operational support units, primarily responsible for deterring other countries from using nuclear weapons against China, and carrying out nuclear counterattacks and precision strikes with conventional missiles. [...] The PLASAF capabilities of strategic deterrence, nuclear counterattack and conventional precision strike are being steadily elevated.

(Building and Development of China's Armed Forces, 2013: ch. 2)

The Chinese nuclear policy has not shifted significantly during the timeline of this study. China has adopted a no-first-use policy since 1964, and has stated that it would not threaten or use their nuclear weapons against non-nuclear states. The stated goal of China's nuclear weapons is to deter other states from threatening or using nuclear weapons toward China. China's stance regarding its nuclear strategic doctrine was reiterated with their White Papers of 2011 where they repeated their commitment to a no-first-use policy. The White Papers of 2013 did not mention the Chinese stance regarding their no-first-use policy. However, it did mention China's steadily development of its nuclear arsenal. The absence of their commitment to a no-first-use policy in the 2013 White Paper cannot singlehandedly mark as a significant shift in their strategic doctrine. The possibility that it was intentionally left out to send a message or indicate a change in their nuclear policy can only be speculated and therefor not constitute a valid significance in this study.

### **Similar/Dissimilar weapons system**

Koblentz states in his report that China has also been developing missile defence technologies the last three years. The report mentions four intercept tests, but is ultimately unable to determine their purpose. It is argued that they could be a part of understanding the capabilities and/or limitations of missile defence technology, as a cover for anti-satellite testing or as part of a missile defence system program. It is however stated that it is indication that China has “upped the ante” which will instigate an Indian response, which will in turn lead to a Pakistani reaction (Koblentz, 2014: 23).

In 2007 China used a missile to destroy a defunct Chinese weather satellite, which resulted in a considerable international backlash for China. The destruction of the satellite resulted in a large amount of space debris as well as a “show of force” regarding Chinas capacity to destroy satellite (Koblentz, 2014: 24).

The reasons of the Chinese development of missile defence, capable of intercepting nuclear missiles, are not easily determined. As reported it could be because increasing its knowledge of such defence systems and/or as a cover up for anti-satellite testing. What is certain is that China is developing their capabilities regarding defending itself against nuclear missiles. The advancement in this matter could be part of the modernization of the Chinese nuclear forces, but cannot be significantly attributed to the dynamics of an arms race with India or Pakistan. More probable is the threat from the US as a factor in these Chinese actions.

### **Deployment patterns**

China has, since its becoming a nuclear state, been the least transparent about its nuclear force among the five legally recognized nuclear weapon states (these being the U.S, France, Britain, Russia and China). It is reported that the lack of transparency is part of the Chinese long-standing deterrence policy (Sipri 2013: 284). The Chinese government has not provided any official information regarding the size or composition of its nuclear forces. It was estimated in the SIPRI yearbook of 2013 that China maintains a stockpile of about 250 nuclear warheads, which indicated a steady increase and expansion of its nuclear arsenal. What is known is that China is currently conducting a modernisation and moderate expansion of its nuclear arsenal as a part of a long-term plan linked to the improvements of other countries in advanced offensive and defensive weapons systems that threatens the Chinese nuclear forces (Sipri 2013: 305). This modernisation of its nuclear forces aims to strengthen its nuclear retaliatory capabilities as well as developing a stronger defence for its nuclear weapons. This modernisation entails a larger focus on qualitative development, rather than a quantitative development of its nuclear arsenal (Sipri 2013: 305-307).

## 5 Conclusion

### *Research question:*

How can the increase of nuclear weapons stockpiles in India, Pakistan and China be explained?

### *Hypothesis:*

The hypothesis of this paper is that the increase of nuclear stockpiles in the states of India, Pakistan and China is due to a dynamic characteristic of an arms race, the logic of deterrence and the action-reaction model.

The hypothesis of a triangular relationship is can only be determined to be partly accurate. Regarding India and Pakistan, there are clear indications that these two states are involved in a nuclear arms race for increased security and deterrence-value. The action-reaction model and the indicators designed from Barru Buzans “idioms” identifies the actions of these two states as part of an arms race dynamic. In the case of China the determination of the states intention and nuclear posture as been more difficult. The threat perceived by China does not (yet) significantly include India, according to my analysis. India’s shift regarding anti-satellite technology, as well as their delivery systems development, show indication that China is perceived as a nuclear threat to India.

The triangular relationship, painted as a security trilemma by Gregory D. Koblentz, can only partly be seen in this study. The actions from India in which they are increasing their nuclear deterrence will affect the Pakistani security and merit a response. It can however not significantly prove that it merits responses in China and their nuclear posture. Chinese actions however indicate to affect India and their nuclear deterrence, which leaves us with somewhat of a one-way channel of increased threat.

What is left certain is that in all three cases there are serious developments and research towards more advanced and expanded nuclear stockpiles. In the cases of India and Pakistan this can be explained with the action-reaction model and the nuclear arms race that this study indicates. The escalation between these two states, stemming from each states attempt to increase its own security while decreasing the other state’s, is seen in every indicator. The political actions from both states showed a reaction from the other state. The strategic doctrines of both states was continuously added upon and changed to increase the states nuclear deterrence. Regarding weapons system and deployment patterns this study shows that these two states are adapting and reacting to other states nuclear posture, in a manner coherent with the arms race dynamic. In the case of Chine this dynamic was not as self-evident. China

also show indication of heavily modernizing and expanding its nuclear forces, while not at the same aggressive and reactive way. The threat perceived toward China, stems from mainly the US and not India or Pakistan. The increase in China's nuclear stockpile could be explained with a Chinese will to modernize its nuclear force, but doing so it still is coherent with a action-reaction model in which its modernization is caused by external threats.

## 6 References

- Bano, S 2015, *China and Pakistan in the post-India-U.S. nuclear deal scenario*, Korean Journal Of Defense Analysis, 27, 1, p. 123-137
- Behraves, Maysam, 2015 *Weapons of mass destruction -proliferation and terrorism in an age of geopolitical turmoil*. Gästseminarie 3/5 2015. Lund: Statsvetenskapliga institutionen, Lunds Universitet
- Blarel, N, & Ebert, H 2015, 'Explaining the evolution of contestation in South Asia', *International Politics*, 52, 2, p. 223-238,
- Bluth, C 2010, 'India and Pakistan: a case of asymmetric nuclear deterrence', *Korean Journal Of Defense Analysis*, 22, 3, pp. 387-406, Political Science Complete
- Buzan, Barry, 1987 *Strategic Studies – Military Technology and International Relations* London: The Macmillian Press LTD
- Esaiasson, Peter, 2012. *Metodpraktikan: konsten att studera samhälle, individ och marknad*. 4., [rev.] uppl. Stockholm: Norstedts juridik
- Huth, Paul, 1999. *Deterrence and International Conflict*. *Annu. Rev. Polit. Sci.* 1999. 2:25–48
- Information Office of the State Council, 2013 ”Building and Development of China's Armed Forces” in *The Diversified Employment of China's Armed Forces*, Beijing [[http://eng.mod.gov.cn/Database/WhitePapers/2013-04/16/content\\_4442757.htm](http://eng.mod.gov.cn/Database/WhitePapers/2013-04/16/content_4442757.htm)] [Accessed: 2014-05-17]
- Khan, Z 2013, 'The Arrival of Tactical Nuclear Weapons in South Asia: Deterrent Stability or Instability?', *Comparative Strategy*, 32, 5, pp. 402-417, Political Science Complete
- Koblentz, Gregory D., 2014. *Strategic Stability in the Second Nuclear Age*. Council Special Report No. 71

Knopf, J 2010, 'The fourth wave in deterrence research', *Contemporary Security Policy*, 31, 1, p. 1-33

Rajagopalan, RP 2011, 'India's Changing Policy on Space Militarization: The Impact of China's ASAT Test', *India Review*, 10, 4, pp. 354-378, Political Science Complete

Sankaran, J 2015, 'Pakistan's battlefield nuclear policy: A risky solution to an exaggerated threat', *International Security*, 39, 3, p. 118-151

SIPRI yearbook 1999: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2000: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2001: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2002: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2003: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2004: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2005: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2006: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2007: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2008: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2009: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2010: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2011: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2012: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2013: armaments, disarmament and international security, Oxford University Press, Oxford

SIPRI yearbook 2014: armaments, disarmament and international security, Oxford University Press, Oxford