Nuclear diffusion: A rethinking of why nation-states "go nuclear"

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Nuclear Diffusion
A Rethinking of Why Nation-States "Go Nuclear"

by

Chris Kofinis

A thesis submitted in partial fulfillment of the requirements for the degree of

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in
Political Science

Department of Political Science
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ABSTRACT

*Nuclear Diffusion: A Rethinking of Horizontal Nuclear Weapons Proliferation* examines the spread of nuclear weapons throughout the nuclear age. What is pondered are the specific reasons why a state would pursue a nuclear weapons deterrent. For example, are there identifiable reasons or conditions that explain horizontal nuclear weapons proliferation? While numerous arguments have been made for why countries proliferate, this piece posits a simple assumption.

A non-nuclear state is inclined to proliferate because of the dramatic nature of the nuclear threat. The imperiled non-nuclear state prefers to proliferate as only the nuclear deterrent ensures relative security in an anarchic nuclear-armed world. Whereas peace may prevail in the absence of nuclear weapons, relative security demands the imperilled state to question whether it needs nuclear weapons. Should a state desire to remove vulnerability, it is the unfortunate reality of the nuclear age that nuclear peace must begin and end with the nuclear weapon.
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In addition, special thanks to Professor Tuttle and Professor Tamadonfar. I thank them for their help and their guidance in what has been a journey that I will never forget.

Cheers!!
Introduction

As a contemporary analysis of international security affairs this work addresses the effects of the atomic bomb on the relations between non-nuclear weapon states. Academics and strategists, for instance, have long debated how the bomb altered the nature of international relations. At the very least, the atomic bomb did alter the intrinsic costs associated with interstate conflict. Still, a more definitive answer as to how the atomic bomb directly affected the behavior of states remains elusive. Hence, this work endeavors to provide a fundamental answer to this important question - how has the atomic bomb change the affairs between states?

The nuclear innocence disappeared with "the flashes of...[the first] three atomic devices in the summer of 1945, at Alamagordo, and over Hiroshima and Nagasaki." With these three explosions, the atomic bomb became an irremovable aspect of international affairs. It was not until later, however, that the atomic bomb's national security connotations would surface. These connotations emerged once adversaries became armed with this new and powerful weapon.

The strategic role of the atomic bomb changed in 1949. The Soviet

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detonation of an atomic device marked the loss of the American atomic monopoly, signaled the arrival of atomic-armed opponents, and created the possibility for atomic war. Fortunately, a nuclear war, long feared by many as inevitable, has yet to occur. Still, the risk of nuclear war persists even to this day.

The end of the Cold War between the two primary nuclear protagonists - the Soviet Union and the United States - considerably waned the threat a global nuclear war. Yet, the chance of a post-Cold War nuclear exchange lingers on. In fact, because the atomic weapon remains available as a tool of force, the possibility of a nuclear clash remains undaunted by the demise of the Cold War. However, the threat of nuclear attack is supposedly mitigated by the existence of nuclear deterrence. Specifically, a nuclear weapons-based deterrent is supposed to, in theory, deter an attack by an atomic-armed opponent. Ironically, it is this very deterrent quality that contributes to the political effects that nuclear weapons have, and have had, on the behavior of non-nuclear weapon states.

The nuclear weapon state (NWS) derives a theoretical deterrent from its possession of a sovereign nuclear weapons capability. In contrast, the non-nuclear weapons state (NNWS) must accept the resounding strategic implications that come with nuclear asymmetry. The operating reality that the NNWS-state must confront is that it lacks the essential nuclear means to deter a nuclear threat. The nature of this nuclear threat, as could be confronted by a NNWS-state, includes the possibility of nuclear coercion, threat of nuclear attack, even an actual nuclear strike. Thus, for the NNWS-state, nuclear weapons exist as the starkest reminder
of what price it may have to bear from its relative weakness in an essential capability.

The absence of a sovereign nuclear deterrent implies that not even an implausible nuclear threat is deterred. A threatened NNWS-state can only deter possible nuclear aggression by acquiring an analogous and sovereign nuclear weapons capability. As a result, if the NNWS-state seeks to escape the strategic implications of nuclear vulnerability, it must "go nuclear." In other words, the NNWS-state which is threatened by nuclear arms must pursue the only capability which can alleviate its relative insecurities.

Essentially, the question that must be asked is what form of behavior should be expected from an imperiled NNWS-state? If a NNWS-states perceives an unmitigated exogenous nuclear threat is it not logical that the state proliferates not only to mitigate the threat, but because the logic of nuclear deterrence demands subsequent proliferation? Again, a NNWS-state that wishes to deter must possess the essential nuclear means with which to deter. Therefore, a pattern to how NNWS-states proliferate should be discernable given the universal logic of nuclear deterrence. Put differently, the desire to deter the nuclear threat should lead proliferation to follow a similar process and pattern of development in which an initial nuclear-armed state creates the impetus that spurs subsequent proliferation.

The reason a pattern to proliferation is to be expected is that the imperiled NNWS-state seeks to maintain a relative level of security with a threatening NWS-state. Desire for relative security in a nuclear armed milieu implies that the NNWS-
state should be encouraged to pursue an analogous and sovereign nuclear weapons-based deterrent. In essence, what is argued is that the emergence of nuclear threat serves to promote subsequent acts of horizontal nuclear weapons proliferation.

The intent of this piece is to show that acts of horizontal proliferation are the consequence of prior acts of nuclear fruition. The key assumption is that the historical development of horizontal nuclear weapons proliferation has followed a distinct pattern that involved past nuclear-armed states creating the strategic impetus for additional proliferation. This described pattern of development is labelled the process of nuclear diffusion.

In order to explain the dynamic of diffusion, a theory is first constructed. Diffusion theory will help establish the underlying logic behind the conclusions that one can summarily draw concerning the expected behavior of NNWS-states. In addition, a region of NNWS-states is examined with respect to its susceptibility to nuclear diffusion. The piece ends with certain policy options being proposed to prevent nuclear diffusion. The overall structure of the work is as follows.

The first chapter highlights the international context of insecurity and systemic complexity within which all states operate. The conceptual understanding of the four following components helps establish and clarify the effects a chaotic

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2 The distinction between diffusion and proliferation is not a semantic one. Diffusion is different from proliferation in that it represents a pattern to proliferation. The act of proliferation itself represents the instance a NNWS-state goes nuclear.
operating milieu has on the behavior of states. These components include: (1) the anarchy of international relations; (2) the limits of a systemic structure; (3) the emergence of the security dilemma; and, (4) the geopolitical environment as it interacts with the security dilemma.

The second chapter validates a critical assumption to nuclear diffusion theory by identifying the atomic bomb's strategic and political uniqueness. The chapter examines: (1) why nuclear weapons are strategically atypical; and, (2) the political effects that follow from the nuclear weapon.

Chapter three offers a fundamental rethinking of why NNWS-states proliferate by presenting the theory of nuclear diffusion.

Chapter four tests diffusion theory through a historical examination of the first phase of proliferation. The importance of examining the first phase is to question the validity of diffusion theory.

The fifth chapter explores nuclear diffusion in the second phase of horizontal proliferation. The distinction of the second phase is made by examining: (1) the opaque character of second-phase proliferation; (2) the current role played by civilian-related nuclear capabilities; (3) a listing of the essential means necessary for a nuclear weapons capability; and, (4) the present post-Cold War strategic context.

The sixth chapter examines the prospects of nuclear diffusion within Northeast Asia by focusing on: (1) the regional repercussions of the post-Cold War period; (2) a recognition of the past role played by nuclear weapons; and, (3) an in-
depth state by state examination of civilian-related nuclear power capabilities.

Chapter seven spotlights the degree of external threat present within the Northeast Asian theater by assessing: (1) the region's military expenditures, capabilities, and potential; and, (2) the particular security context faced by each Northeast Asian state.

The eighth chapter offers a set of policy recommendations developed from the logic of diffusion theory. The array of policies chosen are designed to construct the most fruitful strategy with which to arrest the tide of intra-regional nuclear diffusion. The three policy options proposed are: (1) support for multilateral and unilateral measures of denial; (2) the unequivocal and continued endorsement of security guarantees; and, (3) a radical strategy for diffusion-prevention.

Chapter nine ends this work with a conclusion that summarizes the papers key findings with some additional remarks by the author.

Before beginning, it must first be stated that the intent of this thesis is to broaden the understanding of a strategic issue with incredible importance for interstate affairs. The issue of horizontal nuclear weapons proliferation demands concern for the simple reason that the specter of nuclear war and nuclear threat continue to plague the post-Cold War era. In addition, there are reasonable fears that as the number of NWS-states increase so does the probability and proclivity for
nuclear war. In any case, a sound theory that explains why NNWS-states "go nuclear" assists the development of strategies that should prove helpful in stemming the tide of future proliferation.

3 The pro- and anti-proliferation sides both differ on the consequences of further proliferation. The intent of this thesis, however, is not to delve into whether proliferation is more or less stable. For a pro-proliferation argument see: Kenneth Waltz, "The Spread of Nuclear Weapons: More May be Better," Adelphi Papers, No. 171. London: International Institute for Strategic Studies.
Chapter 1: A Theoretical Framework

In War and Politics, the author, strategic thinker Bernard Brodie, asks a simple penetrating question, "De quoi s'agit il - What is it all about?" Since this analysis posits a new theory to explain the act of horizontal nuclear weapons proliferation, Brodie's question offers the most appropriate of starting points.

- "De quoi s'agit il? -

Horizontal nuclear weapons proliferation is all about the need of states to possess the essential means for national security. The impetus behind the act of proliferation is a reflection of a NNWS-state's desire for relative national security. More to the point, the act of horizontal nuclear weapons proliferation is a NNWS-state's reaction to the disturbing "existential" threat posed by another nuclear-armed state. In other words, relative security demands that the threatened are able to deter, and nuclear deterrence demands that the threatened NNWS-state proliferate.

Brodie, op. cit., p. 91.
Proliferation is a reflection of the systemic limits imposed on relative security. These limits are imposed on all states. No state can remove oneself from the implications of these limits as the nature of the international system is one in which threats permeate. As a result, the context in which states operate is conducive to the instigation of proliferation. Moreover, an act of horizontal proliferation may be the most logical reaction a NNWS-state takes given that it operates within an environment that is endemic with risk and framed by the systemic consequences of anarchy.

The notion of systemic anarchy is fundamental to the explanation of why horizontal proliferation is best understood through the paradigm of nuclear diffusion. Because anarchy is held as the underlying constant condition within a state's environment, its consequences for relative security have important implications for why nuclear diffusion is an international phenomena.

Understanding the relationship between anarchy and insecurity, and thus between anarchy and nuclear diffusion, is accomplished by uniting elements of various international theories. This theoretical approach includes all three designated levels of analysis - the system, the state, and man. While a hybrid approach may seem unnecessary, such a theoretical approach will help conceptualize the intricate relationship between insecurity, anarchy, and nuclear diffusion.²

² In order to hedge dispute with this approach, a synthetic presentation of international relations is by no means novel. For example, scholars Snyder and Diesing have submitted that the
A Theoretical Context for Diffusion.

Much of the international relations literature focuses directly on the question of systemic security and order. Where an enormous distinction exists is between the notions of order and security present at the domestic and international levels. Since there is no corollary to the domestic government at the international level, much thought has been given to the effect that the lack of a sovereign power has on the behavior of individual states. Undeniably evident is that the lack of a clear order has framed the context within which all states interact.

This context, so important to the understanding of nuclear diffusion, can be examined through four elements. To aid the explanation, these four elements are divided into two interrelated areas. The first area establishes the elements important for an appreciation of the system. The second area draws upon reductionist elements as they intrude upon a state's operating milieu. Collectively, these elements aid the forthcoming analysis by establishing the context within which the behavior of proliferation originates. The explanation of the context begins with the effects anarchy has on international security.

Anarchy

The notion of anarchy describes the condition that exists in the absence of structure or order. It is the condition that develops as no group or state has the sovereign power to compel conformity or coerce adherence among and between all states. As such, each state operates within an international system in which no recognized sovereign body exists above the power of the individual state. As a result, lack of order, and the potential for violent disorder, prevail as characteristics of the interstate system. As scholar Kenneth Waltz suggests, anarchy's implications for international security are both profound and poignant:

...international anarchy means the absence of a common inter-state government. Yet ...states do not believe that the lack of a common government means that no agency can reliably enforce promises. Instead, ...states recognize that, in anarchy, there is no overarching authority to prevent others from using violence or the threat of violence to destroy or enslave them.\(^3\)

While the condition of anarchy is ever-present, its most poignant consequences, such as war, are by no means a constant occurrence. Semblances of order, for example, can develop and persist for decades within the greater international system in spite of the underlying reality of anarchy. Nevertheless, there is no order that removes the effects that anarchy persists to have even when

war is not constant. Specifically, no actor can escape the connotations of anarchy as there exists no sovereign entity which ensures the security of the state. The security that the state does experience is at the expense of its power and the means at its disposal. Put differently, in the absence of a true world government, each state contends within an international system in which disorder and conflict remain possible because there is nothing to make these events impossible.

The reality of anarchy is that each international state must by itself seek the means for national security since the "prerequisite to achieving any state goal" lie with its intrinsic ability to provide national security. The stark reality imposed by anarchy is that every sovereign state confront threats that are "total, rising all the way to the actual use of force ...and threat of ...war." Even in peace, no state entirely escapes the connotations of anarchy as peace may always end.

What anarchy implies is that threats to security exist because there exists nothing to prevent the exploitation of the state accept the force of the state. Consequently, the condition of anarchy creates and fosters a systemic-wide operating environment framed by the constant risks posed by interstate disorder.

For a differing view on anarchy, one which asserts that the international system is hierarchically ordered, and not anarchic: See: A. F. K. Organski and Jacek Kugler, The War Ledger. Chicago: University of Chicago Press. 1980. The effect of such a hierarchically-ordered system on the prospects for nuclear diffusion is limited since no one international structure can forever remove the nuclear threat a non-nuclear state may confront.


Hoffman, op. cit., p. 135.
insecurity, and conflict.

The consequence of anarchy for state behavior is that "self-help" emerges as the presiding dictum for international affairs; since no state "enjoys even an imperfect guarantee of their security unless they set out to provide for it themselves." In other words, the onus for security befalls entirely upon the power available to the state. This need for power contributes to what is an almost unending "struggle for power." This struggle for power contributes to the eventual emergence of structure within the system that has certain theoretical implications for international security.

The Structure of the System

A systemic theory seeks to explain "how the organization of the (international) realm acts as a constraining and disposing force on the interacting units within it." The "system is ...composed of two related parts: ...structure, and ...interacting units." The structure is itself defined by the positions held by each state unit as based on their level of relative power. A transformation in the order of structure occurs in reaction to the "changes in the distribution of capabilities across

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7 Ibid., p. 201.
9 Waltz, op. cit., p. 72.
10 Ibid. p. 72.
the system.\textsuperscript{11} Overall, the international system may reflect numerous structural constitutions as power, derived from economic, political, and military capabilities, concentrates among the system's primary actors. For example, the following types of systemic structures are noted:\textsuperscript{12}

(a) Hierarchial - The concentration of power in one unit.

(B) Diffuse - Power and influence are distributed widely among the interacting units.

(C) Diffuse-Bloc - Blocs of states in opposition to one another.

(D) Polar - Dominant bloc leaders lead over lesser units.

(E) Multi-polar - More flexibility between the blocs, and greater latitude of choice among the interacting units.

While each of the above-mentioned structures profess different consequences for systemic behavior and international security,\textsuperscript{13} no structural constitution can remove each and every state from the connotations of anarchy. A particular structure may arguably temper certain systemic instabilities, but no order

\textsuperscript{12} Ibid. p. 97.


The debate between power transitionists who contend that a more preponderant international structure is stable, and balance of power theorists, who consider a balance among states as more preferable to stability and peace, continues. In terms of international structure, power transitionists hold that a hierarchical system in which power is concentrated is the most preferable system, whereas balance of power advocates stress the value of a diffuse system in which power is equally balanced across a number of states, or alliances.
removes the perils that eventually arise within any structure. Anarchy still leads each sovereign state to prepare as if today's peace may end tomorrow. National security, in other words, is not safeguard by the presence of bi-polarity, multi-polarity, or unipolarity, but remains forever relative to the external threats operating within a state's environment.

Because of the persisting connotations of anarchy, each imperiled state must be "ready either to counter force with force or pay the cost of weakness."14 Since no order provides for the individual security of every state, successfully mitigating a threat require the imperiled to gain in power. The pursuit for power, however, contributes to an added dilemma that the imperiled can not avoid.

**The Security Dilemma**

*Si vis pacem, para bellum*

- If you want peace, prepare for war -

Reductionist theories are concerned with the causes of international phenomena that originate at the individual and/or national level. The reductionist orientation concludes that a state's declared policy is set down by "governments through individual policy-makers."16 Priority, however, must be given to issues that

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15 Brodie, op. cit., p. 1

16 Holsti, op. cit. p. 131.
deal with relative security since national security must first be ensured prior to the pursuit of any other goals the state may have. As a result, it is not surprising that national security becomes a preeminent concern even during obvious periods of peace.

When a decision-maker perceives a threat to security, an appropriate reaction must be determined. A weak state, for example, may "not be interested ... in a balance...which is in their favor...but a general margin...[could be] the objective."17 As scholar Nicholas Spykman adds, maybe "there is no real security in being just as strong as a potential enemy, there is security only in being a little stronger."18 The quandary is that steps that bolster the strength of one state alter the basis by which other states calculate their relative security. This particular quandary is referred to as the "security dilemma."19

The security dilemma results when "an increase in one state's security decreases the security of others."20 According to the logic of the dilemma, states in seeking their own security "get too much and too little - too much because they


18 Ibid.


gain the ability to carry out aggression; too little because others, being menaced, will increase their arms and so reduce the first state's security." Further intensifying the cycle of action-reaction is that the imperiled will often establish the credibility of an external threat as being "co-extensive with...[certain essential] capabilities." Certain types of threatening capabilities, in other words, skew perceptions and fuel a dangerous spiral of insecurity between competing states.

The security dilemma develops because an operating environment is often shared by the threatening and the threatened. Because perceptions of external environment are what often justify the imperiled state's reaction, a "statesmen's perceptual thresholds...[could] be adjusted accordingly and...[may] be quick to perceive ambiguous evils as indicating that others are aggressive." These perceptions are further exacerbated by the realization that "today's friend may be tomorrow's enemy." Consequently, persistent concerns over national security fuel the possibility for misperception, and reactions to misperceptions lead decision-makers to "plan capabilities for future use ... [on mere] assumptions about future contingencies."

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22 Ibid. p. 65.


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The actual perception of the threat represents, however, only one component of the security dilemma. Once a state's decision-makers react, they must also determine what form of power must be pursued to remove the threat. Determining the required capabilities for national security eventually lead state decision-maker's to compare essential capabilities with those that threaten. This comparison, between the threatened and the threatening, contributes to a "tendency toward sameness of the competitors." Put differently, because security is contingent upon the capabilities held by the strong, the weak must "imitate their rivals successful characteristics."

...it is to be expected that in crucial respects ...powers will look and act very much alike. It is also to be expected that sameness-effect imperatives will impel eligible states to become great powers and to acquire all the capabilities attendant to that status.

The notion of a "sameness effect" (this thesis coins it emulation) is the by-product of the security dilemma and an anarchic international environment. Emulation in inclined to occur since the weak realize that furthering national security

26 Waltz, (1979) op. cit. p. 127.


28 Ibid. p. 15.

depends on the "right" capabilities. To use an analogy for clarification, a state threatened by another's potent naval capabilities does not build a stronger army but will develop - if possible - an even more potent navy. Emulation, therefore, is the logical response since relative security requires that power be derived from the right type of capabilities. The source for emulation, however, is influenced by the actors that operate within the threatened's geopolitical milieu.

**The Geopolitical Environment**

The area in which a state contends, operates, and interacts, in greatest frequency, roughly defines its geopolitical environment. The size and extent of this operating realm will differ for each state. For some strong states this operating realm may prove quite large, while states of more limited capabilities may interact within a smaller milieu. Nevertheless, the geopolitical milieu affects a policy-maker's perceptions by producing a so-called "neighbor effect."

The neighbor effect represents the influence spatial proximity has upon a state's national security calculations.\(^3\) A neighbor effect occurs because "conditions in neighboring states do have an effect on contiguous areas."\(^3\) The neighbor effect also reveals how a policy-maker's behavior is impacted by "geographic proximity.

\(^3\) Silverson and Starr, *op. cit.*, p. 28.

\(^3\) Ibid, p. 28.
offensive capability, and perceived intentions." Still, the term "neighbor effect" is only used as an allegory to the geopolitical "context... that shapes the dynamics and opportunities" present within any international system or structure.

In order to avoid outright determinism, another term, "ease of interaction," replaces this notion of neighbor effect. In comparison, ease of interaction incorporates both spatial proximity and a state's available capabilities in order to estimate the actual spatial proximity between actors. Those states that are determined to share an ease of interaction are addressed as "salient others."

A salient other is an example of the state that is most likely to affect and influence the calculations relevant to national security. Of course, the influence of a salient other is by no means absolute. The relationship between an operating milieu, a salient other, and relative security calculations, is thought of in possibilistic or probabilistic terms; that is, the actions of a salient other do not determine the resulting behavior of another state. Therefore, a salient other is to be viewed only

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33 Silverson and Starr, op. cit. p. 27-31.
34 Ibid. p. 20-30.
35 Ibid.
as a conditioning factor upon eventual behavior.\textsuperscript{37}

\textbf{A Concluding Overview of Chapter One}

The first chapter sought to demonstrate the prevalence and effects of international insecurity upon interstate behavior. A further aim was to emphasize the constancy of anarchy and to show its implications for national security, and proliferant-type behaviour. The image drawn by the analysis was that a NNWS-state interacts within an operating system filled with possible risks brought on by the implications that follow from international anarchy. In other words, the operating reality of the systemic environment creates the conditions by which the imperiled become imperilled. Consequently, the NNWS-state, when threatened by a nuclear-armed "salient other," must decide between becoming a nuclear weapons-state for the sake of relative security or accepting the resounding implications of nuclear vulnerability.

Since the connotations of anarchy prevail within the international system, diffusion theory assumes that an imperiled NNWS-state prefers nuclear strength to nuclear weakness. In doing so, however, the former NNWS-state creates a fundamental security dilemma in which proliferation begets nuclear threat, and

nuclear threat simply begets proliferation. In other words, states acquire nuclear weapons because relative security in the nuclear age demands deterrence, and deterrence requires the possession of nuclear weapons.
Chapter 2: Rethinking Proliferation

An act of horizontal nuclear weapons proliferation is a reaction by a NNWS-state to an operating milieu underscored by the implications of nuclear-armed anarchy. Because of anarchy, and the security implications that follow, a discernable pattern to proliferation emerged within the nuclear age. The theory of nuclear diffusion theory seeks to explain this pattern of development as a dynamic unique to the process of horizontal proliferation. The entire logic of the theory of nuclear diffusion rests on the fundamental assumption that the destructive nature of the atomic bomb incites NNWS-states to emulate the capabilities of a threatening NWS-state.

The Absolute Weapon: The Nuclear Bomb

The power of the atomic bomb stems form its unique and incredible capacity to destroy.¹ As a weapon of war it is the antithesis to more traditional military

weapons because of its destructive capacity. As such, since the dawning of the nuclear age, the only military utility of the bomb has been to deter war; that is, except for the first and only instance of atomic use by the U.S. in 1945. As Thomas C. Schelling did observe, the costs associated with "nuclear weapons make war less military and are responsible for the lowered status of military victory." Nevertheless, while it may lack in military utility, the strategic utility of the bomb resides in its existence as the only the weapon that deters the exploitation of the nuclear weapons option.

Ironically, the atomic bomb represents the quintessential deterrent and the greatest threat faced by any state. This duality is the result of an unparalleled destructive nature that is comprised of a capacity to inflict enormous damage upon one's opponent at inconceivable levels in an unimaginably short duration of time. Again, the atomic bomb threatens and deters because it is the most powerful capability that any state could confront or have at its disposal. Quite simple, it threatens so dramatically as there is an incredible distinction between conventional and nuclear war:

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It is imaginable that we might destroy 200,000,000 Russians in a war of the present, though not 80,000,000 Japanese in the war of the past. It is not only imaginable, it is imagined. It is imagined because it could be done "in a moment, in the twinkling of an eye."³

The birth of the nuclear weapon marks what must be considered as the epochal change in the costs associated with interstate war.⁴ The atomic bomb is the only weapon that combines an indefensible quality with an inordinate and unparalleled degree of destructive force.⁵ As such, the bomb is dissimilar from other weapons "not only in the scale of destruction ... but in... [the] speed"⁶ in which the destruction shall come. Its effect on international affairs was that the "magnitude and speed of the change in human destructive capacity" changed the nature of statecraft by introducing an existential threat.⁷ Put differently, the bomb is the only weapon that endangers the very existence of a given state.

³ Ibid. p. 124.
⁴ Ibid., p. 126.
⁵ Although SDI and other variations of an ABM system have been explored, and the patriot missile system offers some promise of a very limited land-based defensive system, there was, and there is, no defensive system which can remove the vulnerability that states to continue to endure. See Barry R. Schneider and Colin S. Gray, "Defending versus avenging: a critical assessment of SDI and MAD policies," in Space Weapons and International Security, ed. Bhupendra Jasani. Stockholm: Oxford University Press, 1987, p. 113-25.
Overall, various intrinsic qualities capture how much of a threat the atomic bomb truly represents. Specifically, (a) the only existential form of destructive power; (b) a dramatic speed in which the destruction follows the nuclear exchange; (c) absolutely indefensible; and, (d) both immediate and long-term environmental effects. These four qualities helped create the perception that the bomb was unlike any other weapon. The strategic distinction of this weapon is easily established once the calamitous effects of a twenty-kiloton atomic weapon are compared with other weapons of mass destruction: (See: Table 1.):

The Effects of a 20-Kiloton Weapon

- 600 feet wide and 40 feet deep crater;
- Destruction of all types of buildings within a 2.0 mile radius;
- Fire-storm destroys everything within the 0.7 mile radius;

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* In order to avoid any confusion over the use of this term, I am referring to the ability of nuclear weapons to destroy the existence of the state. Clearly, no weapon has ever had the ability to remove a state from the international system. The nuclear weapon is the only example of a weapon with such an existential quality.


<table>
<thead>
<tr>
<th>Type Of Warhead</th>
<th>Dead Without Civil Defense</th>
<th>Injured Without Civil Defense</th>
<th>Dead With Civil Defense</th>
<th>Injured With Civil Defense</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convention high explosive</td>
<td>5</td>
<td>13</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Chemical (300 Kilograms of Sarin)</td>
<td>200-3000</td>
<td>200-3000</td>
<td>20-300</td>
<td>20-300</td>
</tr>
<tr>
<td>Nuclear (20 Kilotons)</td>
<td>40,000</td>
<td>40,000</td>
<td>20,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

Note: Targeted Against a Sparsely Populated Area.11

11 Bernard L. Cohen, *Nuclear Science and Society*. Anchor Books: New York. 1972., p. 178-85. The level of casualties quoted in Table 1. would increase dramatically if the same 20 kiloton weapon was dropped over a densely populated city, such as New York City, Cairo, or Tehran - producing upwards of 100 to 1,000 times more casualties than the same chemical weapon. If the number of casualties is still unimpressive, the yield of the atomic weapon is very small. The calamitous effects from a larger weapon, in terms of kilotons or megatons, would increase exponentially with the size of the weapon.
The destructive effects of the atomic bomb, and the lack of any international constraint against its use, steers the NNWS-state to confront the resounding strategic implications that follow from absolute nuclear asymmetry. What the stark absence of a nuclear weapons implies for the imperilled NNWS-state is that it lacks the only "weapon ...[that can] keep the nuclear peace." Thus, the NNWS-state confronts an inescapable dilemma of security.

Nuclear peace is predicated on the deterrent capability of the nuclear weapon. Nuclear weapons and the nuclear deterrent are the only means an imperiled state can acquire the "desired foundation from which to ensure ...security" in the nuclear age. Therefore, acts of proliferation diffuse among threatened states for the simple reason that no NNWS-state can deter without first removing itself from the position of nuclear weakness.

\footnote{Ibid. p. 307.}


\footnote{The point is that nuclear deterrence requires a sovereign nuclear weapons capability. A state can not even attempt to play the high cost deterrence game without first possessing a nuclear weapon or a nuclear weapons-based security guarantee. As for the question of what constitutes a stable deterrent, it is beyond the scope of this thesis. In any case, future reference to an analogous nuclear weapons capability shall simply refer to a non-nuclear state that is seeking a sovereign nuclear weapons capability.}

\footnote{Holsti, op. cit., p. 312.}
Chapter Three: Diffusion Theory

Why a NNWS-state would "go nuclear" has long been an issue of scholarly discussion. Still, a universally accepted explanation for proliferation has remained elusive. Past studies, for example, suggested that, fear, deterrence, economics, and status, were all critical factors in explaining an act of horizontal nuclear weapons proliferation.

Among the proffered arguments, the role of status seems the most unconvincing. If nuclear weapons were the determinant of major power status one should have expected every capable NNWS-state to have preferred proliferation over non-proliferation. Yet, as Kenneth Waltz correctly observed, "nuclear weapons alone do not make states into great powers." Additionally, economic-based explanations fail to explain why third world states, like China, and suspected programs in Pakistan, North Korea, Algeria, Iraq and Iran, utilized scarce resources

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to obtain nuclear weapon while also expanding their conventional military capabilities. Essentially, it seems tenuous to argue that a nation-state would undertake an expensive and capital-intensive endeavor for the sake of saving money in conventional military expenditures. Instead, the most likely explanation for proliferation is arguably the most obvious.

The act of horizontal proliferation is a reaction to the insecurity experienced by a NNWS-state when threatened by a NWS-state. The reaction to proliferate follows as a threatened NNWS-state seeks to maintain and ensure its own perception of relative national security. Since only nuclear weapons can keep the nuclear peace, proliferation is the preferred action that will eschew relative weakness.

The security-impetus behind proliferation has been identified by previous scholars. Kenneth Waltz, for example, suggested that acts of proliferation are a desire by the NNWS-states for: (a) a counterweight; (b) to remove concern over the credibility of a security guarantee; (c) to provide a security umbrella in the absence of one; and, (d) to counter a conventional imbalance. In another piece, Waltz suggested two core reasons for proliferation: (a) either because of the failings in extended deterrence; or, (b) when one’s adversary obtains a nuclear capability.

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20 Kenneth N. Waltz, "What will the spread of nuclear weapons do to the world," in International Political Effects of the Spread of Nuclear Weapons, ed. John Cairo King. Washington:
In accordance with Waltz's suppositions, nuclear diffusion theory asserts that the pursuit for relative national security can account for horizontal nuclear weapons proliferation.

**The Theory of Nuclear Diffusion**

Nuclear diffusion theory contends that the act of horizontal nuclear weapons proliferation is the product of exogenous factors directly related to the nuclear weapons threat. These factors, if and when they emerge, effectively alter the strategic context within which a NNWS-state operates. Because the atomic weapon is the quintessential existential threat, the threatened NNWS-state reacts with fear over a capability that it lacks. The nature of the action and reaction between a threatened NNWS-state and a threatening NWS-state produces an identifiable dynamic to proliferation that nuclear diffusion theory seeks to explain.

The dynamic intrinsic to horizontal proliferation is understood by focusing on the terms of diffusion, infection, and emulation. These terms mirror a similar usage by Randolph Silverson and Harvey Starr in which they studied the spread of war. In *Diffusion of War*, Silverson and Starr explained how wars tended to...

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spread horizontally in a particular manner. What the two authors suggest with respect to war patterns, however, also applies to an understanding of why NNWS-states proliferate:

...the occurrence of some event, war, for example, provides a set of stimuli for emulation, or the occurrence of new war participation by states not originally at war.22

The critical assumption of diffusion theory is that the nuclear threat inclines a susceptible NNWS-state to proliferate. A reaction of insecurity follows as a NNWS-state can not ignore the unparalleled destructive implications associated with nuclear weapons. As a result, the inclination to proliferate diffuses away from another NWS-state and infects those NNWS-states which are susceptible to the nuclear threat.

The logic to diffusion theory is quite simple. The introduction of a nuclear threat by a nuclear armed-salient other is the critical "nuclear contagion" which can infect the susceptible and capable NNWS-state.23 Outright infection depends on the degree of susceptibility that a NNWS-state experiences at any given time. The degree of susceptibility to the nuclear contagion is determined by: (a) the source of the potential threat; (b) the perception of the nuclear threat; (c) the extent of regional

22 Silverson and Starr, op. cit., p. 6.

23 The use of term contagion may seem odd, but I feel it firmly grasps the manner in which initial proliferation can infect, like a disease, the susceptible NNWS-state.
or global instability; and, (d) whether other alternatives exist.

The chance for nuclear diffusion will vary according to the NNWS-state. Not all NNWS-states react with immediate and existential concern over a nuclear armed salient other. For instance, Canada did not view a nuclear-armed United States as a direct threat to its own national security. Whether Canada would have reacted with fear depended on whether relations between the two parties were filled with enmity at the time that the United States went nuclear. What nuclear diffusion assumes is that susceptibility remain relative to a NNWS-state's perception of its operating context:

Nations are only apprehensive about nuclear neighbors under particular conditions. It follows that almost every case of proliferation will vary with the specific security problems faced by the nation seeking nuclear weapons.24

More specifically, according to nuclear diffusion, a NNWS-state's operating milieu should be thought of as being permissive and supportive of acts of proliferation. Sufficient instability or insecurity, for example, only serves to heighten the degree of susceptibility to the nuclear contagion. Nevertheless, the milieu can still not determine whether a NNWS-state will diffuse.25 The likelihood of subsequent nuclear diffusion hinges on whether the state with the nuclear

24 Strong, op. cit. p. 7.
25 Ibid. p. 132.
capabilities is perceived as a direct threat:

In an age of nuclear striking power, national security can never be more relative; and to the extent that it can be assured at all, it must find its sanctions in the intentions of rival powers as well as in their capabilities.\(^{26}\)

To reiterate, what is most important to the dynamic of diffusion is how susceptible the NNWS-state is to the nuclear contagion.\(^{27}\) The three options that may serve to mitigate a state's susceptibility are: (a) remaining vulnerable to the nuclear threat; (b) free-ride off the nuclear deterrent; and, (c) obtaining a nuclear guarantee from another nuclear power - what is known as security through extended deterrence. Should all three options prove inadequate for the NNWS-state, the final recourse must be to: (d) submit to infection by the nuclear contagion.

The acceptance of vulnerability could be considered as a viable strategic option for some NNWS-states. For example, a state may accept vulnerability as it may lack the necessary level of technological and/or economic resources to acquire a nuclear weapons capability. A NNWS-state that is incapable of obtaining the means to rectify its insecurity is forced to accept the profound connotations of absolute nuclear vulnerability. As could be expressed in an order of likelihood, that


\(^{27}\) While this may somewhat question diffusion theory, it merely takes into account that states will not simply fall like dominoes after the initial act of proliferation.
is from least likely to most likely, the following categorization grasps when a NNWS-state may accept vulnerability:

**Diffusion and Degrees of Vulnerability**

**Least Likely To Accept Vulnerability**

(a) Threatened and Technologically Capable;  
(b) Threatened, and Possibly Technologically Capable;

**Most Likely To Accept Vulnerability**

(a) Not Threatened, but Technologically Capable;  
(b) Threatened, but Technologically Incapable;  
(c) Not Threatened, and Technologically Incapable.

While not an attractive option, the acceptance of vulnerability could add to a NNWS-state's perception of relative security. Specifically, by disregarding its desire to proliferate, it avoids inciting or inviting threat from among other NNWS-states. For example - and this is used purely as an analogy - if Mexico was capable of producing a nuclear weapon, its decision-makers may calculate that only a marginal gain would be achieved by exploiting the nuclear weapons option; especially if Mexico lacked an explicit nuclear threat. A declared Mexican nuclear weapons capability would undoubtedly inflame American security concerns and incite unneeded tensions among the two neighbors. A capable NNWS-state must, however, be expected to eschew vulnerability if the existence of the state is in direct jeopardy. In this strategic circumstance, the capable NNWS-state can choose to:
(b) free-ride; (c) accept an extended deterrent; or, (d) acquire an independent nuclear option.

The nuclear free-rider represents a NNWS-state that obtains the benefits of nuclear deterrence through geographic proximity to a nuclear-armed power. In this case, a susceptible NNWS-state disregards the inclination to proliferate by accepting a de facto deterrent from a neighboring NWS-state. The nuclear free-rider, however, accepts this deterrence without declared commitment by the NWS-state to its national security.

The viability of the free-rider option is that capable nations could calculate that an independent nuclear arsenal is unnecessary considering its spatial proximity to what are already friendly nuclear-armed powers. In other words, an independent nuclear weapons capability has less strategic value for the NNWS-state if its primary nuclear threat is sufficiently deterred by a neighboring NWS-state. Still, the strategic value of the free-rider position declines as the explicitness of the nuclear threat increases against the NNWS-state. In this strategic circumstance, the NNWS-state must prefer a nuclear deterrent to the free-rider position. The NNWS-state that desires a deterrent must accept either type II (extended deterrent), or a type I nuclear deterrence (independent nuclear deterrent).

In extended deterrence the NWS-state expands the scope of the area deterred to include an ally which is a NNWS-state. The problem is that the notion of extended deterrence departs fundamentally from the traditional logic of deterrence as "in order to deter it is necessary to have the means of implementing..."
that threat. Under extended deterrence, it is a distant NWS-state that possesses the nuclear means with which to deter nuclear aggression. As such, the threatened NNWS-state must rely on another to mitigate the nuclear threat.

The value of type II deterrence is often deemed suspect since it depends entirely upon the credibility and the willingness of the nuclear guarantor. If the extended deterrent is viewed as strategically inadequate, the only recourse open to the NNWS-state is that it acquire a sovereign nuclear weapons capability (or type I deterrence). If a NNWS-state does decide to go nuclear, and if this decision is in reaction to a direct threat posed by a NWS-state, then, the intrinsic nature to horizontal proliferation is one of nuclear diffusion.

**The Logic of Diffusion Theory**

The desire of a NNWS-state to maintain relative security within an anarchic nuclear-armed milieu underlines the phenomena of nuclear diffusion. Since existential security is threatened by a nuclear armed-salient other, the NNWS-state is susceptible to infection by the nuclear contagion. If the susceptible NNWS-state succumbs to infection, the end consequence is that it emulates the only essential capability that can ensure relative security - the nuclear means. The logic of the nuclear diffusion dynamic involves the following process:

> Ibid.
Figure 1: The Logic of the Diffusion Dynamic

Initial External Stimulus
(The Perceived Nuclear Threat)

+ Vulnerable Security Context
(The Presence of Susceptibility Combined with the Lack of Mitigation)

= Susceptibility to the Nuclear Contagion.

Susceptibility to the Nuclear Contagion

+ Emulation-Reaction
(The Act of Proliferating)

= DIFFUSION
A Subsequent Act of Horizontal Nuclear Weapons
Proliferation

The premise that underlies the nuclear diffusion dynamic is the assumption that NNWS-states are especially sensitive to the nuclear weapons threat. As a result, the imperiled NNWS-state chooses to proliferate since nuclear weapons and only nuclear weapons ensure the nuclear peace with a nuclear-armed adversary. The following structured explanation presents how the dynamic of nuclear diffusion would operate between a NWS-state and a NNWS-state:
The Dynamic of Diffusion

The operating environment is perceived as filled with security threats;

State A introduces a nuclear weapons capability into the operating environment of State B;

State B is vulnerable and perceives a threat from state A's capabilities;

Depending on the given degree of susceptibility, infection by the nuclear contagion becomes possible.

State B has the option of reactions that could mitigate the possibility of diffusion, however;

If State B lacks in valid options, one course of action is to emulate State A's nuclear weapons capabilities;

If State B does emulate, diffusion has occurred.

The following chapter now tests the validity of the theory by comparing the first phase of horizontal proliferation with the previous assumptions made by nuclear diffusion. 29

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29 Please Note: The reference to a first-phase of proliferation is regards to the phase of proliferation that includes only the first five proliferants. The reason these five are distinguished is that all five comprise the overt nuclear club that began with the United States in 1945, and ended with China in 1964.
Chapter Four: A Test of Diffusion Theory

The Nuclear Non-Proliferation Treaty (NPT) of 1970 offers the following definition for what constitutes a NWS-state:

For the purposes of this treaty, a nuclear-weapons state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device ...

Based on the strict NPT definition, only five proliferants, all from the first phase of horizontal proliferation, are recognized. The five NWS-states include: the United States; France; Great Britain; China; and the former Soviet Union. The first phase of proliferation is distinguished from subsequent phases by the presence of overt declarations. In declaring their nuclear capabilities, these five states made it clear to others that they did possess the means to keep the nuclear peace.

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2 The Ukraine, Kazakhstan, and Belarus are excluded in that these states are not proliferants. Rather, they are de facto nuclear weapons states because of the collapse of the former Soviet Union. In addition, Belarus has since repudiated its nuclear weapons capabilities, and Kazakhstan and the Ukraine are in the process of doing so. India is questionably left out of the club in that its 1974 "peaceful nuclear explosion" did not lead to an end of its opaque status. South Africa is also absent for the simple reason that did not declare its status during this first phase.
question which must be answered is why did these five states pursue nuclear weapons.

First Phase Analysis

The impetus for the American nuclear weapons program came during the Second World War. Under the obviously stark anarchic conditions of global war, sensitivity towards an adversary's capabilities were understandably high. In other words, the Second World War made the American operating environment susceptible to infection by a nuclear contagion. The perception of a Germany believed to be rushing to develop an atomic device represents the first nuclear contagion that would subsequently instigate the American atomic weapons program.³

....Fascist Germany had devoted little attention and almost no resources to a atomic bomb. Yet, on the basis of its contribution to the solution of the fission problems, the knowledge of its advanced weaponry, and the quality of Germany's technical and industrial base, the assumption that a high-level atomic weapon effort was under way was plausible.⁴


The reasons why the United States began its atomic weapons program are historically well-established. Scholar Ashok Kapur, for instance, concluded that "the United States made the bomb before the Germans did and the initial decision was geared to perceptions about the implications of German atomic arms." Thus, the dynamic of nuclear diffusion seems to explain the first act of proliferation.

The first instance of proliferation was an example of nuclear diffusion since the American program sought to emulate a suspected German atomic weapons program. Diffusion followed since the United States also lacked any other acceptable recourse. Specifically, is it reasonable to argue that the U.S. could have accepted vulnerability? Aside from such a contention, there was no viable alternative to emulation. Neither free-loading or extended deterrence were options to be considered. Instead, the United States emulated the essential means which it perceived as necessary for relative security.

In becoming the first acknowledged nuclear weapons state, the United States alters the basis by which other NNWS-states would calculate their national security. In fact, American nuclear emulation has consistently influenced the behavior of numerous NNWS-states; not excluding the former Soviet Union.

The primary impetus for the Soviet atomic weapons program was a perceived gap in nuclear capabilities held by its primary salient others. In all, three stimuli

\[\text{\footnotesize \textsuperscript{5}} \text{Kapur, op. cit. p. 54.}\]
\[\text{\footnotesize \textsuperscript{6}} \text{Ibid.}\]
could explain subsequent Soviet emulation. According to historical record, a "pilot nuclear weapon research program had been started in 1942 ... in light of intelligence about the British, U.S. and German work in the field." Nevertheless, it was the speed with which the United States developed and utilized the atomic bomb against Japan which hastened Soviet reactions and eventual emulation.®

"...some Russian pessimists ...dismally remarked that Russia's desperately hard victory over Germany was now as good as wasted."®

Further insight into Soviet perceptions is offered by Joseph Stalin himself who expressed the greatest alarm over this new and exploitable American capability:

"A single demand of you, comrades. Provide us with atomic weapons in the shortest possible time ... The balance has been destroyed. Provide the Bomb - it will remove great danger from us."®

Evidently, the Soviet Union proliferated so as to remove an undeniable gap in relative security brought on by a new and most powerful capability possessed by its primary salient other; which was the United States. Given the emerging nature of the Cold War, Soviet susceptibility to the nuclear contagion was of significant

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degree to permit infection. Specifically, the United states was perceived as representing a direct nuclear threat, and "the gravity and urgency of this perceived threat" shaped strategic concerns and successfully influenced Soviet emulation." The Soviet Union would openly actualize its nuclear weapons capability in a dramatic test in 1949.

The United Kingdom, the third member of the nuclear club, began its atomic weapons program in 1947. Britain's initial atomic preoccupation began during WWII but was quickly overtaken by American research since domestic resources were directed towards the war effort. The British were able to obtain some technical atomic experience from the U.S. with the 1943 Quebec atomic collaboration agreement.

At the end of WWII, Britain's desires for increased atomic weapons assistance and cooperation quickly evaporated with the 1946 passage of the American McMahon act which prohibited all "cooperation with any foreign powers on nuclear weapon" matters. This recalcitrance by the U.S. created a deep fissure between the two allies, and added significantly to British susceptibility; especially in light of the Soviet atomic and conventional threat to Europe.

The effect that both the explicit threat from the Soviet Union and the lack of

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13 Ibid. p. 27.
confidence in the American security guarantee had on British susceptibility can not be ignored. For example, Sir John Anderson, one of Churchill's chief aides in nuclear weapons matters, cited the "obsession with the growing might of the Soviet Union and the dangers this held for Britain's post-war position, especially given the uncertainties of postwar U.S. behavior."14 Proliferation specialist Peter Clausen also cites American recalcitrance as a clear "betrayal of U.S. commitments and a blow to British post-war designs."15 In comparison, authors Stuart Croft and Phil Williams suggest that the 1947 British decision to proliferate is explained by drawing on the four underlying beliefs driving British security policy:

A concern over the anarchic system;... a hostile Soviet Union; the desire for influence with the United States; and a belief in the stabilizing effect of nuclear deterrence...16

Nuclear diffusion occurred in the case of Britain since the assessment of the Soviet atomic threat, coupled with the implications of a reluctant American ally, fostered the degree of susceptibility that was required for successful infection by the nuclear contagion.17 The lack of mitigating options ensured infection as it was clear

14 Schwartz, op. cit., p. 28.
15 Clausen, op. cit., p. 19.
16 Ibid.
17 Ibid. p. 18.

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that Britain would not have accepted vulnerability, freeloading, and chose not to accept the American guarantee. The research and development into an atomic device culminates with Britain's first atomic test in October of 1952.

France followed Britain as the fourth member of the overt nuclear weapons club. After the Second World War, through 1945 to 1954, France's atomic program was initially focused on developing civilian, rather than military, applications. The re-direction of the French atomic program began in the fifth republic. For France, both security concerns and a desire to reassert "national independence and maximum world status," appear to explain the redirection in the atomic program.

In the 1954 and 1956 period, internal debates were marked by divisions between those which believed in the utility of a French nuclear weapons capability, and those that considered an independent deterrent as weakening the security relationship with NATO, complicated France's pursuit of an independent nuclear

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18 We must keep in mind the period in which Britain pursues the nuclear option. This is just after a costly war in which Britain suffered significantly. After the end of World War II there emerges a new European threat, the Soviet Union. The Soviet's were perceived as hostile and expansionist, and when they became nuclear armed it seems implausible to even suggest that Britain could have accepted vulnerability as an option; especially in light of American unwillingness in the nuclear matters.


weapons option. The proponents in the military and political arena stressed that an American extended deterrent was of little value given the strategic reality confronted by the United States. As General Pierre Gallois, a vociferous supporter of the force de frappe, would explain, it was the reality of a Soviet retaliatory nuclear strike that made the value of the American extended deterrent so suspect:

"Threatened with enormous damages ...America might hesitate. And once the likelihood of American intervention was in doubt, the U.S.S.R. would recover a share of its freedom of action..."23

The external stimulus for French emulation was a mix of security concerns which were all underscored by the fear that "the superpowers would be willing to limit a nuclear war within the European theater."24 Other noted references to French national security would cite the possibility of a resurgent Germany. Specifically, French Chief of Staff Charles Ailleret wrote that in the 1950's he supported the nuclear weapons capability as "a guarantee against the repetition of German intrusions of 1914 and 1940."25 Notwithstanding, the most credible stimuli that can explain French emulation in 1960 was a desire to obtain a sovereign nuclear


25 Ibid. p. 172.
weapons capability in light of the Soviet atomic threat and a weak American extended deterrent. Quite simply, the desire to improve relative security drove this instance of horizontal proliferation as "a France armed with nuclear weapons would be able to free itself from its fears and once again take its destiny into her hands." Following France, China is the last member to enter the nuclear weapons club.

According to historical records, Chinese proliferation resulted in response to the lack of confidence over Soviet security guarantees. The inclination to proliferate is furthered by China's desire to obtain the essential means that would ensure future national security in relation to all threats posed by its salient others. Historically, China's past experience with invasions and occupations by forces from the West and Asia had already aggravated susceptibility even prior to the formal introduction of the nuclear contagion. The susceptibility to the nuclear contagion would follow during the early years of the Cold War.

In 1950, a Sino-Soviet Treaty of Friendship, Alliance, and Mutual Assistance, was supposed to have united Chinese security with the Soviet Union. The lack of

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25 Ibid.


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Soviet action during the Korean War and the first Taiwan crisis only served to accentuate Chinese fears and insecurities. The annulment of an additional agreement that was to have provided a sovereign atomic device solidified China's perception that the Soviet Union was unreliable as an ally. Most damaging, however, was Soviet equivocation during the Korean War and the Quemoy/Matsu Taiwan islands crisis of 1954-55. In both cases, the Soviet Union ignored that the United States made implicit threats of atomic attack against China. In China's decision to embark on an independent atomic weapons program is finally taken in a 1955 politburo meeting.

In the case of the last member of the nuclear club, China's successful infection by the nuclear contagion was probable since all mitigating alternatives were strategically inadequate. The option of vulnerability, for instance, was unsuitable for China since Mao stressed the need to consolidate national defense in order to ensure that no imperialist power would invade China again. The option of freeloading and extended deterrence were disregarded since China viewed the

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33 Pollack, op. cit., p. 44.
Soviets as a reluctant ally. Consequently, the only recourse open for China was to emulate the essential capability possessed by China's nuclear-armed salient others. The Lop Nor atomic test openly declares China's atomic capability in 1964.

Not surprisingly, China's decision to emulate is similar to the decisions taken by both France and Great Britain. In each case examined, the NNWS-state sought to detach itself from an unreliable nuclear guarantor and to deter an external nuclear threat. In response, each of these three states obtained what was considered an essential capability for maintaining relative security. Thus, entrance into the overt nuclear club follows a similar pattern for all five proliferants as each former NNWS-state becomes a NWS-state only in reaction to the nuclear threat posed by a nuclear armed-salient other.

**Post-Test Analysis**

The theory of nuclear diffusion attempted to explain the schematic pattern to first phase horizontal proliferation. What diffusion theory shows is that subsequent acts of horizontal proliferation occurred among susceptible and capable salient others. Furthermore, by examining the historical evidence, the critical contentions

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made by nuclear diffusion theory seem consistent with the empirical evidence.\textsuperscript{35}

In each instance of first phase proliferation a threatening nuclear-armed salient other was perceived within a NNWS-state's milieu. This exogenous nuclear threat, which was coupled with a lack of options that could have mitigated the nuclear threat, fostered greater susceptibility and inclined five NNWS-states to subsequently diffuse. In fact, not in any of the five cases examined did a NNWS-state proliferate in the absence of a real or perceived nuclear threat. Still, stronger generalizations may have to be tempered since not every potential first phase NWS-state chose to proliferate.

The pattern to first phase diffusion did not consist of direct nuclear diffusion from NNWS-state A to NNWS-state B and then to NNWS-state C. The pattern as it actually developed was limited to a number of capable and willing salient others. There was direct diffusion, for example, between the initial perception of a German atomic weapons program and the subsequent American and Russian programs. In addition, the American and Russian programs were integral in encouraging the British, French, and Chinese, decisions to proliferate. The question that remains unanswered is why would only five capable states proliferate during the entire first phase?

A definitive answer to why some NNWS-states did not "go nuclear" is

\textsuperscript{35} It befalls upon me to first qualify my conclusions. Clearly, further historical or formal evidence would strengthen the explanatory value of diffusion theory. Unfortunately, that is an exercise that can only follow after this current piece.
lacking. The most obvious additional first phase proliferants would have included Canada, Sweden, West Germany, and Japan.\textsuperscript{36} Sweden and Canada did debate whether they should go nuclear. In both cases, each state decided that an indigenous nuclear option would offer only a slight gain for relative security.\textsuperscript{37} For West Germany and Japan, the American security guarantee, and a recent history of aggression, seem to explain why neither state could have openly pursued the nuclear weapons option.\textsuperscript{38} Therefore, the five NNWS-states that did diffuse seem to have been the most likely, or susceptible, of all the candidates.\textsuperscript{39}

In conclusion, based on the analysis of the previous test, it appears that the theory of nuclear diffusion theory offers a useful paradigm from which to understand the phenomena of horizontal proliferation. More importantly, the theory emphasized how nuclear threat and susceptibility act symbiotically to promote subsequent proliferation within the first phase. The relevance of the nuclear diffusion paradigm for second phase horizontal proliferation, however, has yet to be explored. In order to utilize the diffusion model for second phase analysis, the critical distinctions between the first and second phase of proliferation must now be established.

\textsuperscript{36} Japan's nuclear position will be explained in the second part of thesis, which includes an analysis of Japan's supposed basis for its nuclear inhibitions.


\textsuperscript{38} Schwartz, \textit{op. cit.} p.41-45.

\textsuperscript{39} Clearly, this conclusion is a tautological one. Unfortunately, I am unclear as to how to escape such a natured conclusion.
Chapter Five: The Second Phase of Proliferation

It is the absence of atomic weapons tests, and other forms of overt declaration, that clearly distinguishes the first from the second phase of horizontal nuclear weapons proliferation. The existence of a nonproliferation regime explains the prolonged absence in overt acts of horizontal proliferation between 1964 and 1995. What the nonproliferation regime established was an international norm of nonproliferation based on a set of rules and procedures which sought to stymie overt proliferation. Given that no state has yet to declare its nuclear capabilities, the regime was successful in modifying, constraining, and structuring, the more overt behavior of NNWS-states.

The components of the NPT regime include various arms control and arms limitation agreements:

The Nonproliferation Regime
1957 - Creation of International Atomic Energy Association
1962 - The Limited Test Ban Treaty
1970 - Nuclear Nonproliferation Treaty
1978 - Nuclear Suppliers Group

* The lone exception being South Africa which declared and then rescinded its nuclear weapons capability.
The centerpiece of the regime is the 1970 Nonproliferation Treaty (NPT). What the NPT treaty established was a disparity in the number of overt or declared nuclear weapon states. The desire to keep the nuclear club to five NWS-states led the United States, and others, to encourage the ratification of the 1970 NPT treaty by all known NNWS-states. In exchange for NPT ratification, signatories that were NNWS-states were promised: (a) "assistance in the development of peaceful uses of nuclear energy" (Article IV); and, (b) "a requirement of the nuclear weapons states to take steps toward disarmament" (Article VI).^2 Absent from the tenets of the treaty, however, was any reference to the relationship between national security and horizontal proliferation.

The relationship between a NNWS-state's non-nuclear status and national security was first referenced in a 1968 U.N. security resolution. The 1968 resolution conjoined NPT ratification with a UN Security Council resolution to come to the "assistance of any non-nuclear weapons parties that were victims of aggression with nuclear weapons."^3 Yet, the resolution lacked any formal commitment by a nuclear-armed state to deter acts of nuclear aggression. As such, the 1968 UN resolution failed to redress the critical relationship between nuclear threat and subsequent acts of proliferation.

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The NPT's primary goal has been to facilitate technical denial by forcing all non-nuclear signatories to accept inspections of all civilian-related nuclear facilities. The intent of inspections, conducted through the International Atomic Energy Association (IAEA), was to inhibit diversion and/or acquisition of weapons-grade fissile material and all other elements that comprise a nuclear device. But by seeking only technical denial, Article IV of the NPT treaty granted each signatory the right to develop and/or acquire peaceful uses of nuclear energy. As a result, the NPT effectively licensed the global dissemination of civilian nuclear technology which has thereby provided certain NNWS-states with the so-called latent nuclear weapons option:

The proliferation of means has gone beyond early expectations, especially because of the dissemination of nuclear power plants from which fissionable materials can under some circumstances be easily filched.\(^4\)

The notion of a latent nuclear weapons option centers on the distinction between civilian and military uses of nuclear power. The distinction is complicated since "the civilian nuclear fuel cycle can be used to generate special nuclear materials usable in explosives."\(^5\) The latent option, and thus the opaque

\(^4\) Brodie, op. cit. p. 384.

nuclear weapon status, is best described by the following four components:

(See: Table 2.).

Table 2. Determinants of Opaque/Latent Status

1. An Absence of Tests as an Overt Indicator of Proliferation.
2. Denial of Possession.
3. Lack of a Doctrine Concerning Use.

A confirmed latent status is achieved once a NNWS-state obtains the indigenous capability to manufacture a nuclear weapon. A NNWS-state is only considered nuclear weapons capable if it has the necessary level of technical sophistication for the nuclear weapons-making option. The latent weapons option, however, is well within the grasp of some NNWS-states because civilian nuclear capabilities can be utilized for weapons purposes.

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6 The elements which have helped define opaque status are extrapolated from observations made by these authors: See: Avner Cohen and Benjamin Franklin, "Opaque Nuclear Proliferation," In Opaque Nuclear Proliferation New York: Frank Cass and Company, 1991, p. 20.
Civilian Nuclear Power or Military Capability

There are two diametric purposes derived from a civilian nuclear power program. The two purposes are military and civilian. These purposes can not be circumscribed as a civilian power program will provide an added military capability. Moreover, no civilian nuclear program can be structured that removes all possible military applications. Essentially, the structure of the civilian-related nuclear power or research program may only complicate and prolong the path towards the nuclear weapons option. As a result, at a certain level in the civilian program, the NNWS-state will be able to exploit a latent weapons option from its "civilian" capabilities.

The exact relationship between a civilian nuclear power program and the acquisition of a nuclear weapons option is quite simple. The NNWS-state gains a more readily exploitable nuclear weapons option as it achieves a specific level in civilian nuclear capabilities. The actual path towards the latent nuclear weapons option is described as a phasal one. Specifically, each successive step in a civilian program provides a NNWS-state with improved weapons-making potential.\(^7\) Beyond a certain level, for example, a civilian program permits the NNWS-state to "acquire the fundamental capability to produce

nuclear weapons... by... unintended consequence." Dual-use, therefore, allows a declared NNWS-state to gain the essential means to go nuclear without having to jeopardize non-nuclear status.

**Dual-Use and the Nuclear Capability**

The strategic implications of dual-use suggests that "if a state considered it of utmost importance to assure its neighbor that no nuclear weapons program was at hand ... there might be no other way to achieve this but avoid all investment in nuclear power production." The concern over civilian nuclear capabilities is a valid one, and recognizing the relationship helps avoid the incorrect tendency of past proliferation analysis "to suppose that atoms for peace and atoms for war are two distinct realms." More importantly, analysis of second phase nuclear diffusion requires a realization "that by developing atomic

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10 Past proliferation analysis has had the tendency to attribute greater capabilities to countries perceived as interested in nuclear weapons without evaluating the likelihood of this recourse. If current second phase analysis is to be more effective it must limit the sample of would-be diffusers to those states which are indeed the most capable, rather than those which are simply most willing.

energy for peaceful use ... the nuclear option" can be reached. At what level this nuclear option is reached depends on whether the NNWS-state has obtained the necessary components integral to the construction of an atomic device.

The Components

The primary technical obstacle that confronts a would-be proliferant, "despite the difficulties in nuclear weapons design and fabrication," is the acquisition of "fissile materials in suitable amounts and of suitable quality." This aspect of the weapons program is "the single most costly and difficult step in the process," and is "the central problem facing a nation seeking the bomb." Final development of the atomic device would still require, however, "a super critical mass" comprised of these additional components:

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12 Ibid. p. 33.
14 Bailey, op. cit., p. 12.
16 Barnarby, op. cit., p. 4.
The Atomic Bomb's Components

(a) Highly Enriched Uranium Ur 235 or Plutonium Pu 239 with less than 10% Pu 240.  

(b) A sphere of mass.

(c) A high density in mass in order to reduce the number of escaping neutrons.

(d) Purity of the fissile material: Ur 235 to 90% Pu 239 with less than 10% Pu 240.

(e) A surrounding tamper material.

Among the atomic bomb's ingredients, it is again the availability of the fissile material, either U 235 or Pu 239, which is the essential component and primary determinant of latent status. For example, a "uranium-fuelled power reactor operating to produce electricity" provides a NNWS-state with the fissile material that facilitates the latent nuclear weapons option. Yet, the ease with which the NNWS-state acquires the necessary weapons-grade fissile material depends on the type of reactor that the NNWS-state has at its disposal.

Of the types of civilian reactors, the Light-Water reactor (LWR) is the

\[17\] One should note that unprocessed Pu-240 could also be utilized but is more unstable. Use of such a substance would require very fast implosion techniques to prevent pre-detonation. "Further improvement in the explosive yield from a nuclear bomb could be obtained by surrounding the lithium hydride with uranium. The neutrons emitted in the d-t reaction come with high energy and high energy neutrons that can cause fission reactions in U238 as easily as in U235." See: Bernard L. Cohen, Nuclear Science and Society. Anchor Books: New York. 1974. p. 171.

\[18\] Van Cleave, op. cit., p. 36.
most difficult from which to obtain weapons-grade plutonium. In contrast, the Natural Uranium-fuelled Graphite reactor (GCR) and Heavy-Water Moderated reactor (HWR) are considered optimal plutonium producers. For example, in only a year a natural uranium-fueled reactor with each gram of U 235 consumed produces .85 grams of weapons-grade plutonium. As a result, a "30 MWth Gas Cooled Reactor, operating at 80% (efficiency)," would produce 7.5 kg of weapons-grade plutonium in less than a year of civilian operation which is sufficient for a 15 kiloton nuclear device. Adding to the potency of the natural uranium reactor is that extraction of weapons-grade plutonium from a GCR or HWR reactor can "be accomplished by chemical methods which means a simpler and less demanding process" for the would-be proliferant. Overall, such a program allows a NNWS-state to achieve a weapons option in under two years if and when the required sophistication is achieved:

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19 The reason light-water reactors are not as conducive for promoting plutonium is that the fuel is left in the reactor so long that 25 percent of the Pu239 is converted by reactions to Pu 240 making it suitable for only unreliable and inefficient weapons. See: Bernard L. Cohen, Nuclear Science and Society. Anchor Books: New York. 1974. p. 196.

20 Heavy water reactors using natural uranium allow for space and fuel rod changes that can be made without shutting down the reactor. As such, it is practical to change and chemically reprocess the fuel to remove the plutonium more frequently and thereby keep the Pu 240 content below 10 percent. See: Bernard L. Cohen. Nuclear Science and Society. Anchor Books: New York. 1974. p. 196.

21 Ibid. p. 41.

22 Meyer, op. cit., p. 37.

23 Van Cleave, op. cit., p. 46.
...nine to twelve months reactor operation, 30-90 days cooling, 2-3 months of separation and plutonium metal production, and perhaps another 30 days for fabrication of the first weapon if a weapons laboratory were already in operation and the necessary design research had been conducted.\textsuperscript{24}

In contrast, use of the LWR-type power reactor complicates the phasal path towards the weapons option. The fissile material that could be extracted from the LWR-type reactor requires 3% uranium enrichment for civilian use, and 90% percent enrichment for weapons-grade U\textsubscript{235}. The isotopic separation of the U\textsubscript{235} from the more plentiful U\textsubscript{238} demand special enrichment techniques. The four methods of uranium enrichment include: (a) gaseous diffusion; (b) centrifugation; (c) electromagnetic; and, (d) laser isotope. A would-be proliferant is likely to avoid laser separation as it entails a costly level of technical capability. In contrast, centrifugation proves the most likely method adopted by small nations that lack the technology or the capital necessary for a more complex method of separation.\textsuperscript{25}

The need for enrichment, and the difficulty that a NNWS-state may have in purchasing or developing an enrichment capability, suggests that the lead time is effectively increased if a LWR-type reactor is the centerpiece of a civilian power program. Notwithstanding, a determined NNWS-state, "even without a

\textsuperscript{24} Ibid. p. 48.

\textsuperscript{25} Ibid. p. 50.
basic nuclear-related infrastructure... may only require, on average, roughly six years from program start to produce its first bomb.26 For the more advanced civilian powers, however, the lead time can be shortened to anywhere from two years to two months:

It would be simple matter for nations like Japan, Germany, Switzerland, and Canada to build a number of weapons in a matter of months, with no advanced preparation.27

Again, the civilian path towards a latent nuclear weapons option should be understood as a phasal activity. Essentially, each rung achieved within the civilian program represents a more potent step along the ladder of latent weapons potential: (See: Figure 2.):

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27 *Deutch, op. cit.*, p. 125.
Figure 2. A Phasal Ladder Toward the Nuclear Weapons Capability

Rung 1: The basic scientific, technical, and industrial know-how.

Rung 2: The acquisition of research reactors.

Rung 3: The acquisition of a power reactor. A greater significance is emplaced on GCR-type and HWR-type reactors as they are the most conducive to a weapons capability.

Rung 4: The acquisition of the means necessary for extraction of fissile material. The special attention is paid to chemical separation capabilities, followed by enrichment capabilities.

Rung 5: The weapon design.

Rung 6: The acquisition of delivery systems. The emphasis is upon a domestic ballistic missile programs, and other forms of missiles and air-breathing means of delivery.
Based on the implications of the phasal ladder, a NNWS-state garner the latent weapons option at Rung 4.; the total nuclear fuel cycle. Rung 4., for example, removes all the dependence any NNWS-state would have on a foreign supplier for either heavy water, natural uranium, or enriched uranium. As such, NPT regime obstacles designed to impede proliferation are effectively overcome as the NNWS-state now has the ability to exploit civilian capabilities for a nuclear weapons option.

An added implication of the phasal ladder is that a NNWS-state could obtain a latent option by purposely structuring a civilian program along Rungs 2. and 4. Specifically, a GCR or HWR-type research reactor combined with a method of reprocessing or enrichment allows a small research-oriented nuclear program to offer a latent nuclear weapons option. The final step in the possible exploitation of a latent option is the capability to deliver the atomic device (Rung 6.).

While preventing access to Rung 6. may have at one time been possible, no current NNWS-state is in anyway restricted from the means of delivery. For instance, as of 1995, most would-be second phase proliferants have developed, or are researching into, an indigenous ballistic missile delivery capability: (See: Table 3.)
Table 3. Ballistic Missile Possession and Ranges

<table>
<thead>
<tr>
<th>Countries with advanced missile or SLV programs:</th>
<th>Indigenous Production</th>
<th>Under Development Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range (km)</td>
<td>Range (km)</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>10,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Israel</td>
<td>1,450</td>
<td>2,400</td>
</tr>
<tr>
<td>India</td>
<td>240</td>
<td>13,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries that deploy indigenous short-range missiles:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range (km)</td>
</tr>
<tr>
<td>North Korea:</td>
</tr>
<tr>
<td>Egypt</td>
</tr>
<tr>
<td>Iran</td>
</tr>
<tr>
<td>South Korea</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Countries engaged in missile R&amp;D:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
</tr>
<tr>
<td>South Africa</td>
</tr>
<tr>
<td>Argentina</td>
</tr>
<tr>
<td>Taiwan</td>
</tr>
<tr>
<td>Pakistan</td>
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<tr>
<td>Indonesia</td>
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</tbody>
</table>

Notes: All ranges are given in kilometers, are maximums, and assume missile system's standard payload.
In addition, the lack of ballistic missile technology can be supplanted by the use of aircraft, cruise missiles, and other air-breathing vehicles, that are "relatively simple and readily available" for delivering a weapon of mass destruction. Furthermore, the more advanced nations, like Japan and India, have satellite launch vehicle (SLV) capabilities. SLVs are also known as ballistic missile delivery systems with intercontinental range. Simply put, Rung 6. is not an obstacle against horizontal proliferation. In fact, only by obstructing all access to Rungs 1 through 4 could a NNWS-state be prevented from acquiring a latent weapons option: (See: Figure 2.). However, in light of the prolific spread of civilian nuclear power, it may unreasonable to suggest that access to the essential components can be controlled.

**Second Phase Diffusion**

Determining the number of NWS-states within the second phase begins with an evaluation of latent capabilities. Specifically, because civilian power programs have such profound implications for which state is considered nuclear weapons-capable, calculating the number of NWS-states now depends on an evaluation of latent potential. Furthermore, overt declarations, like nuclear testing, are no longer an indicator of nuclear status or weapons capability since

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28 Bailey, *op. cit.*, p. 103.
advent in technology permit NNWS-states to "disregard nuclear testing without fear of sacrificing either reliability or sophistication in weapons design." Still, analysts continue to wrongfully equate the number of overt declarations with the number of nuclear weapons states:

Our worst fears about proliferation have not materialized, the pace of proliferation has slowed. Counting decades, since 1945 ...only India exploded such a device, and none did in the fourth or the first-half of the fifth.  

A more reliable estimate of future horizontal proliferation must avoid equating the atomic test with proliferation as a NWS-state does not need to test. Overt declarations are further unlikely as a NNWS-state is unlikely to favor open contravention of the NPT unless strategically necessary. In addition, a second phase NNWS-state may fear the repercussions that open proliferation would have for regional stability. Instead of focusing on overt signals, accurate estimates of second phase proliferation and nuclear diffusion, must begin by acknowledging that there are states which are declared non-nuclear weapons powers but are nuclear weapons capable. The implication for nuclear diffusion is that a second phase NNWS-state has the essential nuclear parts for deterrence, and has the added option of choosing when to exploit this option.

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29 Deutch, op. cit. p. 121-123.
Given the logic of nuclear diffusion, these capable but undeclared NWS-states are expected to overtly proliferate if the state's existence is in explicit jeopardy. Until the state is existentially threatened, opacity of status serves the strategic interests of the state. Specifically, it removes the possibility that by going nuclear you invite an unneeded threat or undesired reaction. Nonetheless, opacity can not serve the ends of deterrence as a credible deterrent requires declaration. As a result, latent status may represent only a transition stage that now precedes second phase nuclear diffusion.

Under the latent status criteria, for example, an additional thirty-six states in 1982 possessed the advanced level of nuclear infrastructure needed for a nuclear device. A more recent estimate claims that over 40 states could go nuclear if necessary. The implication of both of these estimates is that susceptibility and mitigation are the influencing factors in whether these latent nuclear powers choose to ever exploit their latent options.

**Future Second Phase Diffusion**

In the second phase, civilian nuclear power has permitted the NNWS-

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31 Stephen Meyer distinguishes an advanced nuclear-related infrastructure as a level in capability which allows a state to produce a nuclear weapon in less than two years. Qualifying this conclusion is that this suggested level should include the possession of plutonium producing reactor, coupled with reprocessing or enrichment facilities. See: Meyer, p. 37-40.

state to effectively emulate the nuclear capabilities without declaring its newfound weapons capability. Of course, certain NNWS-states have pursued a more surreptitious military-style weapons program. Even among such states, civilian nuclear power was critical to the weapons program. For example, India, and Pakistan, used civilian power as the foundation for their weapons program. In addition, Iraq, Iran, and North Korea, pursued their nuclear weapons program through similar civilian means. The deviation away from overt emulation, however, has perpetuated a dangerous misconception that the number of nuclear weapons-capable states is limited to five, with another four or five suspected NWS-states. What latent option suggests, however, is that the possible extent of second phase nuclear diffusion is considerably higher since numerous NNWS-states are already nuclear weapons capable.

The large number of latent nuclear powers suggests that the dynamic of nuclear diffusion could have dramatic consequences for the second phase. Specifically, if an unmitigated nuclear contagion is introduced, second phase nuclear diffusion could prove uncontrollable within a region comprised of numerous latent nuclear weapons powers. The structure of the second phase dynamic could develop as follows:

**The Second Phase Dynamic**

*IF the STRATEGIC CONTEXT - Is perceived as filled with explicit security threats;*
IF STATE A - Introduces a nuclear weapons capability into the environment;

IF STATE B - Perceives a threat to its security from such capabilities, then infection to the nuclear contagion is possible;

STATE B, then - has the option to react accordingly when capable;

FOR STATE B - Of the options available, a possible reaction is to obtain a latent nuclear option or emulate the nuclear weapons capabilities of state A.

IF STATE B - does emulate, or follow through and exploit its latent nuclear option, and if a overt nuclear weapons capability is declared, diffusion has occurred.

Consequently, the risk of subsequent proliferation increases as other capable NNWS-states may also perceive a threat from the previous act of nuclear weapons proliferation.

Not surprisingly, opacity of nuclear status may have already disguised acts of second phase nuclear diffusion. For example, Pakistan's quest for a nuclear weapons capability is supposed to have begun in response to the perceived nuclear threat posed by India's believed nuclear weapons program.\(^\text{33}\) The historical evidence suggests that India's atomic weapons program was in reaction to the direct nuclear threat posed by China.\(^\text{34}\) Similar acts of nuclear diffusion are evident between Argentina and Brazil, Israel and Iraq, and Israel

\[\begin{align*}
\text{\textsuperscript{33} For a contemporary review of the threat posed by nuclear weapons in South Asia: See,}\,\text{Arms Control Today},\,\text{June 1993. For an interesting account of how significant the threat between India and Pakistan: See, Seymour M. Hersh, "On the Nuclear Edge," The New Yorker, March 29, 1993.}
\end{align*}\]

\[\begin{align*}
\text{\textsuperscript{34} Ibid.}
\end{align*}\]
and Iran. The unwillingness to declare these interactions as instances of nuclear
diffusion is that only supposition guides conclusions in absence of a clear
declarations of status.

Nevertheless, it is foreseeable that if these suspected proliferants desire a
stable deterrent they must also declare their nuclear capabilities. Put differently,
credible deterrence can only begin with an enunciation of the nuclear capability.
Opacity may serve current interests, but if deterrence is to accomplish a nuclear
peace it must be unequivocal to both parties that the nuclear game can in fact be
played by both - and thus should not be played at all. As such, in the absence of
mitigation, combined with the presence of absolute susceptibility, the desire for
greater deterrence will demand an end to opacity. In any event, the paradigm of
nuclear diffusion, even in the absence of declared status, still permits the
analysis to focus on issues of regional susceptibility and mitigation, to ignore the
general irrelevance of capability, and to consider why a NNWS-state would "go
nuclear."
Chapter 6: Northeast Asia

Northeast Asia operated for over forty-five years within the confines of a Cold War. Underscoring the Cold War was the threat of a nuclear war between the Soviet Union and the United States. Yet, the recent demise of the Cold War failed to remove either the nuclear threat or the concerns over national security.

The Post-Cold War Environment

The direction that the reordering of the post-Cold War structure will take in the coming years remains quite unclear. What the collapse of the Soviet Union ensures is a markedly different international structure from the bi-polar order that characterized the Cold War. For instance, it may be, as it argued by some scholars, that two levels of structure are emerging within the greater international system.

At the systemic level, for example, apparent American unipolarity has replaced global bipolarity:
American preeminence is based on the fact that it is the only country with the military, diplomatic, and economic assets to be a decisive player in any conflict in whatever part of the world it chooses to involve itself.¹

The future of an American-led unipolar structure is debatable. Differences in economic and demographic growth among major powers will contribute to the rise of a major power, like India or China, that could seek to challenge and usurp American unipolarity. As such, American global preeminence only reflects an international system that temporarily lacks an analogous major power.² Consequently, the future stability and the security of the post-Cold War structure remains in considerable doubt.

In contrast, while a semblance of unipolarity may exist, the loss of bipolarity has already had consequences at the sub-systemic level. According to Goldgeier and McFaul, sets "of regional subsystems in which clusters of contiguous states interact" have emerged.³ This regional division has developed along two general lines. Within one region, "the core," pervasive security risks no longer persist. In contrast, within "the periphery," insecurities prevail among

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² The use of demographics and economics is based on the logic that drove the major power analysis utilized in The War Ledger. See: Kugler and Organski, op. cit.

the various state actors:

In the core, economic interdependence, political democracy, and nuclear weapons lessen the security dilemma; the major powers have no pressure for expansion...Conflicts do not disappear, but they are not resolved militarily. In the periphery, however, absolute deterrents that might induce caution do not exist... and the security dilemma is still paramount. 

The regionalization of the international structure, as described by Mcfaul and Goldgeier, suggests that an opaque NNWS-state may begin to operate within conditions conducive to inciting increased susceptibility. Increased regional threats, for instance, will complicate security calculations as a NNWS-state is forced "to compare its strength with a number of others." The implication for nuclear diffusion is that disturbances within the milieu affect susceptibility and lead to an increased proclivity that the NNWS-state will proliferate. While the reordering of the post-Cold War international system may have had an impact, understanding the effects on a given region, like Northeast Asia, requires the undertaking of a more thorough regional analysis.

4 Ibid.

Northeast Asia - A Regional Analysis

The actors within Northeast Asian theater number seven states in total. Among the seven, two international actors, specifically Russia and the U.S., now differ significantly with respect to current regional importance and influence. The post-Cold War decline of Russian power has served to strengthen the position of the United States as the region's only superpower. The primary regional actors include Taiwan, China, South Korea, North Korea, and Japan. Future security calculations within post-Cold War Northeast Asia will inevitably reflect the interactions between the United States and the region, and the inter-dealings between the region's five primary actors.

The nuclear threat is one factor that will affect post-Cold War security calculations within Northeast Asia. In the past, for instance, security calculations have been affected by the nuclear threat. In fact, not only has the nuclear threat persisted to impinge upon national security for over five decades, but Northeast Asia is the only world region that has witnessed an act of atomic attack, threats of atomic attack, overt proliferation, and opaque proliferation: (See: Table 4.).
Table 4. Nuclear Coercion and Brinkmanship in Northeast Asia

<table>
<thead>
<tr>
<th>The Event</th>
<th>The Players</th>
<th>The Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1945 WWII</td>
<td>U.S./ Japan</td>
<td>Atomic Attack</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Explicit Use)</td>
</tr>
<tr>
<td>1950 Korean War</td>
<td>U.S./ China/ North Korea/ South Korea</td>
<td>Atomic Threat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Implicit Use)</td>
</tr>
<tr>
<td>1955 Taiwan Crisis</td>
<td>U.S./ China/ Taiwan</td>
<td>Atomic Threat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Implicit Use)</td>
</tr>
<tr>
<td>1957/58 Second</td>
<td>U.S./ China/ Taiwan</td>
<td>Atomic Threat</td>
</tr>
<tr>
<td>Taiwan Crisis</td>
<td></td>
<td>(Implicit Use)</td>
</tr>
<tr>
<td>1992-? North Korea</td>
<td>U.S./ North Korea/ Atomic Weapons Program</td>
<td>Proliferation?</td>
</tr>
<tr>
<td></td>
<td>South Korea/ Japan</td>
<td>(Diffusion?)</td>
</tr>
</tbody>
</table>

As for the regional role played by nuclear weapons, it developed along two broad lines. Along one line was the extension of extended nuclear deterrence by the United States and the former Soviet Union over respective allies and/or proxies. Up to 1979, three regional actors, including Taiwan, Japan and South Korea, were under the American nuclear umbrella. In comparison, during the Cold War, the former Soviet Union was held as the de facto guarantor of both North Korea and China.

The other line of development was the proliferation of open and latent nuclear weapon capabilities among the region's five actors. At present, each of the five actors vary in the degree of nuclear weapons potential. In order to assess the risk for post-Cold War nuclear diffusion, a review of the region's civilian nuclear capabilities is necessary to establish which actors possess a latent nuclear weapons option.

**Civilian Nuclear Power**

It is clear that each actor made a concerted effort to expand its civilian nuclear capabilities. Over one 18 year period, from 1970 to 1988, the number of power reactors, the source for weapons-grade fissile material, increased from 4 in

---

6 The formal security commitment with the state of Taiwan was rescinded in 1979 in order to facilitate further reapproachment with China.
Table 5. Nuclear Power in Northeast Asia

<table>
<thead>
<tr>
<th></th>
<th># of CR Operable</th>
<th># of RR Operable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>4</td>
<td>38</td>
</tr>
<tr>
<td>Taiwan</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>North Korea</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>South Korea</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>China</td>
<td>0</td>
<td>3*</td>
</tr>
</tbody>
</table>

Notes: Data as of September 1989.
*Under Construction.
CR- Commercial Power Reactor
RR- Research Reactor

Still, the number of power reactors is not a sufficient measure of a region's latent weapons potential. An accurate measure of latent potential begins with a review of each state's civilian-related nuclear capabilities.

---

Prior to any assessment, an important caveat must first be noted. Each state, excluding North Korea, is an emerging or current economic powers which must contend with meager internal resources for powering their respective infrastructures and economies. Given the dearth of domestic power resources, the prolific and expanded use of nuclear power is very justifiable. Notwithstanding, even a justified civilian application can not remove the duality of use which has a clear and potent military utility.
Japan

By 1991, Japan’s nuclear power program provided 23.8% of the state’s total electricity. A comparison with the region’s other actors shows that Japan is ranked third in overall dependence on nuclear power. Japan’s program is ranked first, however, with respect to the nuclear program’s technical advancement and sophistication. Specifically, Japan is the only regional actor in a position to achieve a full domestic nuclear fuel cycle by 2000. Concerning Japan’s latent potential, the components most important to the generation of fissile material are as follows:

(See: Table 6.):

---

6 Nuclear Power Reactors in the World, 1992. IAEA.

9 Japan is the only regional actor to have two domestic reprocessing facilities, has 38 reactors on line, and is the only state researching and planning the operation of the Fast-Breeder reactor - an optimal plutonium producer.

10 Ibid.
Table 6: Japan: Civilian-Related Capabilities

<table>
<thead>
<tr>
<th>Possession of:</th>
<th>Proliferation Risk:</th>
<th># of:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Reactors:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HWR-type</td>
<td>Plutonium Producers</td>
<td>1</td>
</tr>
<tr>
<td>PWR-type</td>
<td>Uranium Enrichment Req'd</td>
<td>11</td>
</tr>
<tr>
<td>BWR-type</td>
<td>Uranium Enrichment Req'd</td>
<td>25</td>
</tr>
<tr>
<td>GCR-type</td>
<td>Optimal Plutonium Producer</td>
<td>1</td>
</tr>
<tr>
<td>FBR-type</td>
<td>Generates Plutonium</td>
<td>1</td>
</tr>
</tbody>
</table>

| **Reprocessing/Enrichment Facilities:** |
| Pu Reprocessor             | Extraction of Plutonium   | 2     |
| Ur Enrichment             | Possible Enrichment to 90%| 1     |

Notes: HWR- Heavy Water Reactor; PWR-Light Water Reactor; BWR-Light Water Reactor; Graphite-Cooled Reactor; FBR- Fast Breeder Reactor.
Among Japan's civilian capabilities, two of its reactor-types (the BWR, PWR) are variations of light water-moderated generating facilities that require separate uranium enrichment up to 3% U 235 for power generation and 90% enrichment for weapons-grade fissile material. Such weapons-grade enrichment is readily provided by Japan's domestic enrichment capabilities. The fuel pellets of a PWR and BWR-reactor also produce a certain quantity of weapons-grade plutonium. In addition, the GCR and HWR reactors are even more plutonium optimal then the previous reactors types. Japan also has the present capability to chemically reprocess such weapons-grade plutonium. As for the future, Japan power plans have focused on replacing all power reactors by the year 2030 with fast-breeder reactors; the most optimal producer of weapons-grade plutonium.11

The greatest concern over Japan's latent nuclear weapons-making capability centers on the question of plutonium demand and supply.12 A 1992 SIRPI calculation of Japan's plutonium suggests that "even with the most optimistic plans for plutonium use, Japan cannot avoid acquiring a surplus of at least 10 tons" of weapons-grade plutonium.13 Even by the best estimate, according to SIRPI calculations, Japan's nuclear power program "may have difficulty burning 30 tons"

---

12 Ibid.


14 Ibid. p. 6-7.
of the 60-70 tons estimated as necessary for civilian-use.\textsuperscript{14} Japan's plutonium designs raise specific concerns since this fuel is the most optimal fissile material for a NNWS-state wishing to acquire an exploitable latent nuclear weapons option. Overall, the depth and quality of Japan's civilian-related nuclear capabilities indicate that every rung on the ladder has been effectively surpassed. Stated somewhat differently, Japan is a latent nuclear weapons power.

\textbf{South Korea}

Nuclear power is indeed the pillar of South Korean electric power generation. By 1991, 8 nuclear reactors produced 47.5\% of all electrical power. South Korea's civilian program is now designed to expand to 12 operational power reactors by 2002. This civilian capability provides South Korea with the essential means from which to obtain the necessary fissile material. The civilian nuclear capabilities related to this weapons option are the following: (See: Table 7.):

\textsuperscript{14} \textit{Ibid.}
Table 7. South Korea: Civilian-Related Capabilities

<table>
<thead>
<tr>
<th>Possession of:</th>
<th>Proliferation Risk:</th>
<th># of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Reactors:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWR-type</td>
<td>Uranium Enrichment Req'd</td>
<td>7</td>
</tr>
<tr>
<td>HWR-type</td>
<td>Plutonium Producer</td>
<td>1</td>
</tr>
</tbody>
</table>

No Known Reprocessing/Enrichment Facilities

Source: Stats provided from Nuclear Power Reactors in the World: 1992 IAEA.
Notes: HWR-Heavy Water Reactor; PWR-Light Water Reactor.
With respect to the structure of the civilian program, South Korea is the world's only NNWS-state to operate both an American-styled light-water type reactor and a Canadian-designed CANDU heavy-water reactor. The combination raises suspicion since a heavy-water CANDU-reactor provides South Korea with a much greater nuclear weapons-making capability. In contrast, the American-styled PWR reactor requires an additional enrichment capability that South Korea currently lacks.

At present, South Korea depends on the United States for the 3% uranium enrichment required for fueling its LWR-facilities. However, the CANDU allows South Korea access to weapons-grade plutonium that demands much simpler methods of extraction.

The CANDU reactor is a natural uranium-fuelled reactor that provides South Korea with undeniable access to weapons-grade plutonium. A South Korean latent option is actualized once a domestic reprocessing facility is acquired. A South Korean attempt to purchase a common small-scale reprocessing plant from France was suspended in 1976 under U.S. pressure. Still, given South Korea's level of high-tech advancement, it seems reasonable that South Korea could develop a reprocessing or enrichment capability should it be necessary.

---


Taiwan

Taiwan has utilized civilian nuclear power in order to satisfy a rapacious need for energy. By 1991, for instance, nuclear power accounted for 37.8% of all electricity generated. This commitment to civilian nuclear power has also provided Taiwan with a clear latent nuclear weapons option. The civilian capabilities considered critical for a latent weapons option are as follows: (See: Table 8.):

Table 8. Taiwan: Civilian-Related Capabilities

<table>
<thead>
<tr>
<th>Possession of:</th>
<th>Proliferation Risk:</th>
<th># of:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Reactors:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PWR-type</td>
<td>Uranium Enrichment Req'd</td>
<td>4</td>
</tr>
<tr>
<td>BWR-type</td>
<td>Uranium Enrichment Req'd</td>
<td>2</td>
</tr>
<tr>
<td><strong>Reprocessing/Enrichment Facilities:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pu Reprocessor</td>
<td>Pu Extraction</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: Stats provided from Nuclear Power Reactors in the World: IAEA, 1992
Notes: HWR-Heavy Water Reactor; PWR-Light Water Reactor.

Taiwan's latent nuclear weapons capability requires an effective extraction of the fissile material available from its PWR and BWR facilities. The nature of these facilities implies that either an enrichment or reprocessing capability is critical for the separation of weapons-grade fissile material. According to intelligence
reports, Taiwan completed the construction of an unsafeguarded reprocessing facility in the 1980's. Given these overall capabilities, Taiwan can be confirmed a latent nuclear weapon power.

North Korea

The capabilities that highlight North Korea's civilian atomic program exemplify how a NNWS-state structures an embryonic nuclear program for a latent capability. Specifically, North Korea's capabilities are all optimal for extracting weapons-grade plutonium:(See: Table 9.):

Table 9. North Korea: Civilian-Related Capabilities

<table>
<thead>
<tr>
<th>Possession of:</th>
<th>Proliferation Risk:</th>
<th># of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Reactors:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GCR-type Plutonium Producer</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

| Reprocessing/Enrichment Facilities: |                     |                        |
| Pu Reprocessor Plutonium Extraction |                     | 1                      |

Notes: GCR-Graphite Cooled Reactor.

Ibid. p. 70-74.
The "concern about Pyongyang's nuclear intentions emerged in the early 1980's when U.S. intelligence agencies detected the construction of a second larger research reactor."\textsuperscript{18} These concerns increased once it was realized that an uncommonly large 30-Mwe research reactor was accompanied with a reprocessing facility.\textsuperscript{19} U.S. intelligence has estimated that the 30-Mwe gas-graphite reactor is "capable of producing enough plutonium for about one nuclear weapons annually."\textsuperscript{20} Furthermore, "it . . . appears that a third, still larger reactor may be under construction. . .yield(ing) even greater quantities of plutonium-bearing spent fuel - perhaps enough for several nuclear weapons annually."\textsuperscript{21}

The most incriminating aspect of North Korea's program is that its embryonic stage of development, which was supposed to be focused on research, preclude any reasonable justification for a reprocessing capability. Consequently, North Korea has been able to construct a rudimentary program that was organized entirely in a manner conducive to the weapons option. Given the most recent intelligence from 1993, that suggests that North Korea may have removed up to 50 tons of spent fuel from one of its research reactors with enough fissile material for two to


\textsuperscript{19} \textit{Ibid}. Please note: The Mwe size of most research reactors is in the 1 to 5 Mwe range.

\textsuperscript{20} \textit{Ibid}.

\textsuperscript{21} \textit{Ibid}.
three nuclear bombs,\(^{22}\) it is quite plausible that North Korea is a NNWS-state with two or three nuclear weapons at its disposal.\(^{23}\) At the very least, North Korea has a clear latent option that it can readily exploit.

**China**

Although China is the region's only declared nuclear weapons power, its civilian atomic program has failed to progress anywhere near actual energy production. China's goal for the civilian atomic program is that it will eventually provide 20% of the energy demanded in the coming decades.\(^{24}\) In order to fulfill this goal, three PWR-type facilities are under construction.

---


\(^{23}\) According to intelligence reports over the last four years it is unclear whether or not North Korea possesses a rudimentary nuclear device. For example, a diplomat who defected in 1991 suggested that North Korea was only a year to two years away from a nuclear weapons capability. Please See: Paul Shin, "Defector Says N. Korea Building Atom Bomb," *The Washington Post* Sept 14, 1991. p. A 20. In addition, a 1993 CIA report to President Clinton stated that North Korea has probably already assembled one or two nuclear devices. Please See: Robin Wright, "China Opposes Sanctions for North Korea," *The New York Times* Dec 27, 1993. p. A 10.

An Analysis of Northeast Asian Civilian-Programs

Drawing definitive conclusions from an analysis of the region's civilian nuclear capabilities is unfortunately difficult. Lack of resources justifies why civilian nuclear power has expanded throughout Northeast Asia. Nevertheless, dual-use implies that the military utility of this capability can not be removed, and should not be ignored.

After reviewing the latent potential of the region, each actor is already able to surpass either Rung 3 or Rung 4 on the phasal ladder of proliferation. Put differently, North Korea, South Korea, Taiwan, and Japan, are latent nuclear weapons powers. In fact, aside from South Korea, which lacks a known reprocessing capability, every regional actor has available a latent nuclear weapons option. As such, if the capability is already garnered, it is only political motivation, in light of susceptibility and mitigation, that prevents the NNWS-state's decision-makers from exploiting the weapons option.\(^{25}\)

Because of latent potential, nuclear status could change quickly to reflect

\[^{25}\text{Although building an atomic device is not without its difficulty, one can safely conclude that given the dissemination of basic warhead know-how, and the high-level of technological status shared by Japan, Taiwan, and South Korea, it should be the nation of North Korea that faced the greatest difficulty in following through on a nuclear option. If current intelligence is accurate, however, even a technologically backward North Korea can construct a number of rudimentary atomic devices. Therefore, it seems fair and reasonable to presume that the other regional actors are also quite capable of doing so.}\]

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new and troubling strategic circumstances. Specifically, some NNWS-state, like Japan and Taiwan, have the latent nuclear means with which to immediately respond to an unmitigated nuclear threat. Consequently, introducing an unmitigated nuclear contagion may then contribute to rapid diffusion if the degree of susceptibility prevents the NNWS-state from accepting vulnerability. In order to exploring the degree of susceptibility within the region, the analysis now shifts to an in-depth examination of how the various actors perceive their security milieu.
Chapter 7: The Security Environment of Northeast Asia

The phenomena of nuclear diffusion can thrive within any environment immersed in considerable insecurity. The post-Cold War collapse of bi-polarity ensures at least uncertainty, if not outright insecurity.¹ At a minimum, the loss of bi-polarity contributes to a more self-help oriented sub-system as regional actors must now contend with the essential capabilities of a "...number of active players."² As a result, the degree of susceptibility to the nuclear contagion may begin to increase as these states struggle with an environment in which they may lack the necessary nuclear means for relative security.

Because of the collapse of the Cold War, self-help may become more paramount since the structural order that had previously tempered and mitigated insecurities is now gone. An indication of this self-help behavior among the actors of Northeast Asia may be gauged by examining three interrelated factors. Specifically, military expenditures, military potential, and military capabilities, may indicate whether the region's actors are feeding and reacting to each others

² Morgenthau, op. cit., p. 356.
perceptions of insecurity.

**Northeast Asia: Military Expenditures and Capabilities**

By 1991, Asia accounted for 34 percent of total world military expenditures.\(^3\) South Korea and China rank in the top ten of arms importers in terms of contracts concluded.\(^4\) The nature of the region's military expenditures seems to imply a persistent post-Cold War concern over national security. For example, aside from North Korea, every other actor's defense budget has grown consistently since 1990. Moreover, this rate of growth continued even as the Cold War declined in regional significance: (See: Table 10.):


\(^4\) Ibid.
Table 10. Recent Defense Budget Trends

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>291.4</td>
<td>272.95</td>
<td>270.9</td>
<td>258.87</td>
<td>-11.2</td>
</tr>
<tr>
<td>USSR</td>
<td>116.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Russia</td>
<td>52.51</td>
<td>39.68</td>
<td>29.12</td>
<td></td>
<td>-44.5</td>
</tr>
<tr>
<td>Japan</td>
<td>28.73</td>
<td>32.68</td>
<td>35.94</td>
<td>39.71</td>
<td>+38.2</td>
</tr>
<tr>
<td>China*</td>
<td>6.06</td>
<td>6.11</td>
<td>6.71</td>
<td>7.31</td>
<td>+20.6</td>
</tr>
<tr>
<td>Taiwan</td>
<td>8.69</td>
<td>9.29</td>
<td>10.29</td>
<td>10.45</td>
<td>+20.3</td>
</tr>
<tr>
<td>S.Korea</td>
<td>10.62</td>
<td>10.77</td>
<td>11.19</td>
<td>12.06</td>
<td>+13.6</td>
</tr>
<tr>
<td>N.Korea</td>
<td>5.23</td>
<td>2.36</td>
<td>2.06</td>
<td>2.19</td>
<td>-58.1</td>
</tr>
</tbody>
</table>

Notes: Figures in U.S. dollars.

Aside from military expenditures, a review of latent military potential is offered as an additional indicator of the extent to which an actor could threaten the region in the future. Specifically, as each actor increases its percentage of military investment, the depth and quality of military capability climbs along with the increase in total military expenditures. Among the five regional actors, for instance, each state, except North Korea, assigns a relatively small percentage of GNP toward total defense expenditures. Consequently, an actor's military potential increases considerably once a state chooses to recalculate expenditures based on a 5% of GNP/defense ratio⁶: (See: Table 11. 12. and 13):⁷

---

⁶ The recalculation of defense expenditures is based on the data available in Tables 11 and 12.

⁷ What I have done is used the data from tables 11. and 12. in order to calculate military potential in table 13.
### Table 11. Northeast Asia Defense Expenditures for 1991

<table>
<thead>
<tr>
<th>Defense Expenditures</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>30.83</td>
</tr>
<tr>
<td>China</td>
<td>18.79*</td>
</tr>
<tr>
<td>Taiwan</td>
<td>6.562</td>
</tr>
<tr>
<td>N. Korea</td>
<td>2.003</td>
</tr>
<tr>
<td>S. Korea</td>
<td>1.827</td>
</tr>
</tbody>
</table>

Note: Figures in U.S. Billion Dollars.
*Estimated Figure.

### Table 12. Northeast Asia: Prosperity and Power Potential

<table>
<thead>
<tr>
<th>China</th>
<th>S. Korea</th>
<th>Japan</th>
<th>Taiwan(a)</th>
<th>N.Korea(b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Capita GNP</td>
<td>547.0</td>
<td>4,920.0</td>
<td>22,900.0</td>
<td>8,815</td>
</tr>
<tr>
<td>Total GNP (SBillion)</td>
<td>603.5</td>
<td>210.1</td>
<td>2,820.0</td>
<td>180.0</td>
</tr>
<tr>
<td>Population (Millions)</td>
<td>1,102.4</td>
<td>42.7</td>
<td>123.2</td>
<td>20.5</td>
</tr>
</tbody>
</table>

Note: GNP statistics for China, Japan, and South Korea are 1989 figures.
- Figures in U.S. dollars.
a. Taiwan figures are from 1992
Table 13: Northeast Asia's Potential Defense Expenditures.

<table>
<thead>
<tr>
<th></th>
<th>Current*</th>
<th>5% Potential**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>30.83</td>
<td>141.0</td>
</tr>
<tr>
<td>Taiwan</td>
<td>6.562</td>
<td>9.0</td>
</tr>
<tr>
<td>China</td>
<td>18.79</td>
<td>30.177</td>
</tr>
<tr>
<td>North Korea</td>
<td>2.003</td>
<td>2.00</td>
</tr>
<tr>
<td>South Korea</td>
<td>10.77</td>
<td>10.5</td>
</tr>
</tbody>
</table>

* Based on 1991 military expenditures
** Based on 1989 GNP figures for Japan, China, South Korea, and 1992 figures for Taiwan and North Korea.
An estimation of an actor's military potential depends on how defense expenditures are affected should they ever comprise 5% of total GNP. The obvious insight obtained is that increases in GNP/defense expense ratio augment the overall military power of the state. Furthermore, by examining military potential, a mark is provided with which to gauge the power that a state could have within the post-Cold War era. For example, two of the primary actors, Japan and China, reflect the significance military potential could have for future regional security.

China's economy has increased dramatically over the last decades. The state's GNP, for instance, increased 12% percent\(^8\) alone in 1992. IMF calculations from 1993 declare China's national economy as the third largest globally. In addition, if China "achieves a per-capita GNP one-fourth that of the United States (about South Korea's ratio today), its total GNP [would] . . .surpass that of the United States."\(^9\) While China's defense budget in 1993 was estimated at only $7.31 billion, and is dwarfed by Japan's and Taiwan's military expenditures, the projected growth in its GNP implies that China's future military strength will improve considerably in the coming decades. Consequently, the perception that China is a regional threat would increase along with its defense outlays.

In comparison to China, Japan presently outspends every Asian state on

\(^8\) Please note: A more in depth review of China economic growth is offered in the coming pages when China is specifically examined.

defense, even though the defense budget is fixed to 1% of its total GNP. In fact, Japan's military expenditures were second only to the United States in 1992.\textsuperscript{10} Total defense expenditures, for instance, would soar to over 100 billion dollars should Japan choose to adopt even a 3% to 4% GNP/defense expenditure ratio. Therefore, Japan's potential military strength represents a capability that if ever actualized will add to a regional perception that Japan is a resurgent and formidable military power.

While projecting military potential is helpful to an analysis of regional security, it is only a component with which can at best estimate the extent of potential regional threat. Whereas external threat may be more substantively measured through an exact appraisal of available military capabilities. The breakdown of the region's conventional capabilities are as follows: (See: Table 14.).

\textsuperscript{10} Jeffery T. Bergner, \textit{The New Superpowers: Germany, Japan, the U.S. and the New World Order}. New York: St Martin's Press, p. 170-186.
<table>
<thead>
<tr>
<th>Country</th>
<th>GFD</th>
<th>MBTs</th>
<th>CA</th>
<th>PSC</th>
<th>Sub</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S.A.</td>
<td>4</td>
<td>N.A.</td>
<td>278</td>
<td>110</td>
<td>61</td>
</tr>
<tr>
<td>Russia</td>
<td>53</td>
<td>9,800</td>
<td>1,320</td>
<td>54</td>
<td>86</td>
</tr>
<tr>
<td>Japan</td>
<td>13</td>
<td>1,210</td>
<td>564</td>
<td>64</td>
<td>17</td>
</tr>
<tr>
<td>China</td>
<td>101+</td>
<td>7,500-8,000</td>
<td>5,850</td>
<td>54</td>
<td>46</td>
</tr>
<tr>
<td>Taiwan</td>
<td>22+</td>
<td>459+</td>
<td>518</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>S.Korea</td>
<td>24+</td>
<td>1,800</td>
<td>470</td>
<td>38</td>
<td>4</td>
</tr>
<tr>
<td>N.Korea</td>
<td>30+</td>
<td>3,000</td>
<td>732</td>
<td>3+</td>
<td>26</td>
</tr>
</tbody>
</table>


Note: GFD-Ground Force Division; CA-Combat Aircraft; MBT-Main Battle Tanks; PSC-Principal Surface Combatants; Sub-Submarines.
A review of the region’s military capabilities suggest that each actor has sufficient capabilities with which to project some power within its operating milieu. Specifically, it is clear that North Korea has an offensive conventional capability. South Korea, with the United States, has the means with which to defend the peninsula should hostilities erupt. Japan, in contrast, boasts the largest and most sophisticated naval capability among its five regional actors. China, however, flaunts the most significant land and air capabilities. Overall, the extent of conventional capabilities is substantial and could represent reasonable threats for numerous regional actors.

The image that develops after a review of the region’s military expenditures, military potential, and current capabilities, is that a concern over national security could be warranted, and may increase over the coming post-Cold War period. The most telling indicator from this review is the consistent growth in military expenditures among the actors even as the Cold War subsided from regional importance. In other words, some persistent external threat must explain why these states would continue to expend resources on national security. Still, none of these indicators identifies where or why an external threat is perceived. Instead, factors like military expenditures, military potential, and military capabilities, help feed an actor’s general perceptions of the external threats that intervene throughout the operating milieu. Deriving actor’s perceptions, while difficult, is dependent upon a further evaluation of each actor’s own milieu.
The Perceptions of the Players

Perceptions are critical for a decision-maker as external threats are not always explicit. Instead, external threats are often ambiguous and open to some interpretation. Gauging perceptions, however, is crucial in deducing which salient others a state views as threats or concerns to national security. Within Northeast Asia, for example, most post-Cold War perceptions seem transfixed on the exogenous threats posed by North Korea and China.

The fear over China is over its improving nuclear and conventional military capabilities. The anxiety over North Korea is due to a suspected nuclear weapons program. The risk of future nuclear diffusion may hinge on the perceptions held by each of the other actors concerning these two nuclear-laden threats. More specifically, the likelihood of nuclear diffusion could very well depend on whether these two previous external nuclear threats are effectively mitigated.

During the Cold War, the United States was the region's primary instrument of mitigation. American extended deterrence was applied to Northeast Asia in order to deter "the Soviet Union... from threatening areas perceived vital to American interests."11 The United States reflected this interest in Northeast Asia by signing mutual security treaties with three key regional actors: the Mutual Security Treaty

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with Japan; the Mutual Defense Treaty with the Republic of Korea; and, the Mutual Defense Treaty with Taiwan. As of 1994, only the security treaties with South Korea and Japan remain as the security treaty with Taiwan was formally revoked in 1979.

The problem for the region is that America's post-Cold War commitment is somewhat uncertain. Current regional military commitments, for example, represent "only 17 percent of U.S. military manpower...allocated to Asia, and only about 6 percent is deployed forward in the region; and of that 6 percent, 70 percent of those deployed forward are in Japan and Korea."\(^2\) While the formal commitment has yet to shift from "substance to symbol,"\(^3\) the United States could one day decide to withdraw its mitigating capabilities from the region.

A consequence of the withdrawal of the American commitment and nuclear umbrella would be to force both Japan and South Korea to examine the strategic value of nuclear deterrence. At the very least, uncertainty over the future of U.S. mitigation may explain why regional military expenditures have consistently grown since 1990. Furthermore, the implications derived from an examination of regional potential become that much more significant if one considers the effects on military growth that could follow a full American withdrawal.

While U.S. mitigation is critical to evaluating the region's susceptibility, it is still essential to consider where conflict would arise between the regional actors.


\(^{13}\) Ibid. p. 51.
Clearly, mitigation serves to alleviate threat, but it implies that there is substantial threat in the first place. In the case of Northeast Asia, a number of disputes serve to skew perceptions and add to susceptibility. These issues of marked disagreement may also be the best indicators of why conflict will arise and between who an expected conflict would be between: (See: Table 15.):

**Table 15. Sovereignty, Legitimacy, and Territorial Conflicts in Northeast Asia**

* Competing Russian and Japanese claims to the Southern Kurile islands.

* The dispute between South Korea and Japan over the Liancourt Rocks in the southern part of the Sea of Japan.

* Divided sovereignty over the Korean peninsula.

* Competing sovereignty claims of the Chinese regimes on mainland China and Taiwan.

* The unresolved dispute between Japan and China over Senkaku islands in the East China Sea.


The breakdown for each regional actor is as follows:

* **Japan** - Involved in four disputes over islands, two with South Korea, one with China, and one with Russia.

* **South Korea** - Involved in two disputes. One over offshore islands, the other, an existential threat posed to the state by a nuclear armed North Korea.
* Taiwan - Confronted by a numerically superior nuclear adversary that officially considers Taiwan part of mainland China. Taiwan clearly faces an existential threat to the state.

* China - Disputes with Japan and Taiwan.

* North Korea - Facing an existential threat to the state from the United States and South Korea.

In three of the above cases: North Korea; South Korea; and Taiwan; each actor confronts a possible existential threat to national security. This form of external threat is significant, should it arise, as it adds to susceptibility, and contributes to the probability for nuclear diffusion. In order to further evaluate the extent of susceptibility, each actors' operating milieu as it is perceived by the state is independently examined. The examination will proceed by first exploring the perceptions held by South Korea.

**Northeast Asia: South Korea**

The Korean armistice of 1953 was supposed to have ended all hostilities between the two Koreas. The threat from North Korea, however, persists even into the post-Cold War era. Since 1968, North Korea can be credited with repeated acts of outright aggression or of undertaking actions perceived as hostile: (See: Table 16):
Table 16. Incidents of Aggression by North Korea

1968 - Assassination attempt against the South Korean President.

1968 - Seizing of the U.S. Pueblo.

1974 - Assassination attempt on ROK President Park Chung Hee - leading to the murder of his wife.

1983 - The murder of key cabinet officials in another presidential assassination attempt at Rangoon, Burma.

1987 - Korean Airlines airplane bombing.

1950/?- The digging of numerous infiltration tunnels under the DMZ.

1991/?- Suspected atomic weapons program.

These before-mentioned incidents highlight the degree of external threat that confronts South Korea within its operating milieu. The evidence that North Korea is developing, or has developed, an atomic device only serve to exacerbate South Korean fears of threat. As such, the ill-tempered nature of South Korea's operating milieu clearly contributes to a high degree of susceptibility to the nuclear contagion.

Because nuclear diffusion would have been expected under the degree of existential threat, it is believed that the United States commitment to South Korean security did successfully mitigate what would have otherwise been Southern nuclear diffusion. Diffusion theory assumes that South Korea reconsiders its non-nuclear status once the instrument of mitigation, meaning the U.S. nuclear umbrella, is removed. In fact, past South Korean interest in an atomic weapons capability did come in response to the proposed withdrawal of all American forces from South Korea in the 1970s:

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15 It unquestionable that the presence of the United States has stymied South Korean diffusion. For example, it was stated at a 1979 Senate Armed Services Committee meeting, that a proposed reduction in the American commitment that would increase (South) Korean pressure to develop nuclear weapons of their own. In addition, the American presence within the peninsula is also credited for inciting the North Korean atomic weapons program and ensuring that a South Korean atomic program would be the final consequence of any American withdrawal form the peninsula. Please see: Peter Hayes, Pacific Powderkeg: American Nuclear Dilemmas in Korea. New York: Lexington Books. 1990. p. 201-216.
in 1971 President Park Chun Hee ordered the Weapons Exploitation Committee to explore obtaining nuclear weapons. He took this move in reaction to the Nixon withdrawal of the Seventh Infantry Division from South Korea in early 1971.\textsuperscript{16}

South Korea nuclear diffusion is quite probable if the American commitment is ever withdrawn while North Korea is still an existential threat. A rough estimate suggests that South Korea would acquire a nuclear device in nine months after the final political decision is made to do so.\textsuperscript{17} The probability of South Korean diffusion, however, still depends on whether the U.S. remains the mitigator of its nuclear fears. Considering the existential nature of the North Korean nuclear threat, it seems probable, according to the logic of nuclear diffusion, that South Korea will acquire nuclear weapons once the U.S. nuclear umbrella is removed.

\textbf{Korea: North Korea}

Until his death in 1994, Kim il Sung firmly governed over North Korea. Kim Jong il, the son of Sung, has since replaced his father as Party Secretary General of the Korean Workers Party (KWP). In all likelihood, Jong il will follow the same governing tenets that guided Sung's tenure. These tenets include: (1) the survival


\textsuperscript{17} Ibid. p. 211.
of what is now the Kim Jong il regime; (2) to further all steps which will lead to 
reunification; (3) to ensure North Korean independence; and, (4) to generate 
support for economic development and military modernization.\textsuperscript{18} For North Korea, 
it is the Southern alliance between a nuclear-armed U. S. and an economically 
superior South Korea that represents the existential threat.

The security dilemma faced by North Korea, a dilemma accentuated by the 
loss of the Soviet Union as both an ally and benefactor, is the economic and 
technological superiority of the South.\textsuperscript{19} In addition, the loss of the Soviet Union that 
accounted for over 45\% of DRPK trade,\textsuperscript{20} China's 1993 decision to recognize South 
Korea, and the disparity in the number of states that recognize and cooperate with 
only South Korea,\textsuperscript{21} merely add to North Korea's isolation and its perceptions of 
insecurity. The perception of disparity is further intensified by North Korea's own 
persistent economic malaise that has contributed to a 58.1 percent decline in 
military expenditures: (See: Table: 10). The effect of this decline is further 
accentuated by South Korea's impressive economic and military growth (See: 
Tables 10., 11., and 12).

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{19} Ibid. p. 45.
\item \textsuperscript{20} Ibid. p. 46.
\item \textsuperscript{21} As stated in the 1988 Book of Nations, 122 governments recognize the ROK, whereas 103 recognize the DRPK.
\end{itemize}
\end{footnotesize}
Because of South Korea's improving military capabilities, it is anticipated that "North Korea's offensive capability will be severely diminished in comparison to the South's" own offensive capability by 2000. From 1990 to 1993 alone, North Korea's total defense budget declined by 58.1% while South Korea's increased by 13.6%: (See: Table 10.). In addition, future diminution in military expenditures should continue since the North Korean economy has declined at a substantial rate since 1990. Once the nuclear and conventional might of the United States is factored into North Korea's security equation, it is obvious why nuclear emulation was viewed as a viable alternative to future vulnerability.

For North Korea, a nuclear weapons capability provides the essential means to eliminate "the thorny problem of estimating present and future strengths" of enemies that are already armed with nuclear weapons. The probability of North Korean diffusion depends on whether the series of recent diplomatic initiatives by the United States are successful at stalling its atomic weapons program. The greatest likelihood is that North Korea remains an opaque nuclear weapons state until an outbreak of hostilities with the Southern alliance. For that matter, opacity


23 Waltz (1979), op. cit., p. 73.

24 Year-long talks between the U.S. and DRPK which had sought to finalize an agreement that would have exchanged North Korea's GCR-type reactors for enriched uranium reactors collapsed in early 1995. Please See: "Keeping Nuclear Order," The Washington Post vol. 12. no. 34. April 17-23, 1995. p. 6-12.
should prevail up until the time it is perceived by North Korean leadership that the state's existence is in direct jeopardy. Short of such a threat, opacity serves the interests of security since a North Korean nuclear capability could at best only preserve the state from total defeat.

For North Korea, nuclear weapons would not help in the pursuit of actual military aims, as to utilize the weapon would invite an overwhelming American nuclear response. However, a North Korean nuclear weapons capability may deter the U.S. from a nuclear first strike; as to do so could invite an atomic response by the North Koreans against the South. While this may seem illogical given the enormous differences in the size and quality of the respective nuclear arsenals, the North Koreans are presently capable of striking Seoul, and a number of other Southern cities. The question is would South Korea support an American first strike against the North, in light of a North Korean retaliatory capability? North Korea, in other words, does not require a large or analogous nuclear arsenal to achieve deterrence within its milieu. Rather, even a few suspected nuclear weapons could deter the next conflict from ever going nuclear. As a result, nuclear weapons would have served to reaffirm the existence of the state and the Jong il regime.
Japan

Japan's strategic concerns revolve mainly around economics and the degree to which the domestic economy endures an unhealthy degree of vulnerability that follows from its dependence on foreign actors. Specifically, Japan's economic prosperity depends entirely on the export of manufactured goods and the import of raw materials. Dependence stems from Japan's dearth in natural resources. As a result, Japan must accept an unhealthy vulnerability as it must import 87.66% of its coal; 99.72% of its oil; and 100.00% of its nickel, bauxite, and magnesium. Geographically, 47.13% of these resources are imported from the Indian Ocean Basin, with another 35.99% from the Pacific Rim.25

In response to this vulnerability, Japan's strategy has been to target a number of regional trading-states for both capital investment and economic assistance.26 The objective of this strategy was to lessen vulnerability by fostering greater interdependence.27 Economic vulnerability, however, represents only one


aspect of Japan's national security problem.

There exist within Japan's security milieu quite traditional military threats. The difficulty for Japan is that responding to such threats is complicated by domestic obstacles. What is believed to prevent Japan from becoming a military power is Article IX of the constitution and a defense budget fixed to 1% of GNP. As the most important question is how the interpretation of Article IX affects Japan's military strength:

Aspiring sincerely to an international peace based on justice and order, the Japanese people forever renounce war as a sovereign right of the nation and the threat or use of force as means of settling international disputes. In order to accomplish the aim of the preceding paragraph, land, sea, and air forces, as well as other war potential, will never be maintained. The right of belligerency of the state will not be recognized.

The official interpretation of Article IX was that the constitutional restriction pertained only to the acquisition and use of offensive weapons. As a result, Article IX permitted the development of defensive capabilities. Defensive military capabilities, however, can not be simply distinguished from offensive capabilities.

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30 Ibid. p. 42.
In any event, the present interpretation of Article IX did not prevent the acquisition of military capabilities. As a result, Japan is not as military weak as one would have presumed. Instead, a large GNP has permitted Japan to expand its "defensive" capabilities even with a 1% fixed military budget. In other words, Japan has "already rearmed" itself. (See: Table 14.).

The growth in Japan's military expenditures has persisted for decades. For example, the defense budget from 1971 through 1986 increased by over 139 percent. Since 1989, Japan's defense budget increased from $29.6 billion to almost $40 billion in 1993. In comparison to other nation-states, Japan's total military budget was third in 1989, and second only to the U.S. by 1994. Clearly, neither Article IX nor a 1% GNP/Defense budget ratio prevented substantial growth in Japan's military budget. Instead, sizeable expenditures have provided Japan with "a very, very potent military." For that matter, Japan's conventional capabilities are already recognized by American military officials as powerful by any military standard. The question that remains to be addressed, however, is whether Japan will ever supplement its conventional capabilities with nuclear weapons.

32 Friedman, and Lebard, op. cit., p. 328.
35 Ibid.
Japan is believed to have not acquired a declared nuclear weapons capability because of the obstacles of Article IX and the anti-military norms present within the general public. This nuclear inhibition was associated with a cultural allergy that dates to 1945 and the atomic attacks at Hiroshima and Nagasaki.

Japan's declared non-nuclear status, or Kaku von Seisaku (Four Nuclear Principles), was announced as firm government policy in 1968. These four nuclear principles declared: "(1) The Three Non-Nuclear Principles (not to manufacture, possess, or allow the importation of nuclear weapons); (2) support of efforts toward international nuclear disarmament; (3) acceptance of the nuclear deterrent power of the United States; and, (4) support of peaceful use of nuclear energy."

Notwithstanding, neither the four principles, nor Article IX, prohibit Japan from acquiring the so-called essential means for self-defense. Therefore, the question of whether Japan could be a nuclear weapons state revolves around the conception of the nuclear weapon. Specifically, is it an offensive weapon used for military purposes, or a defensive weapon utilized to deter war?

A nuclear weapon is first and foremost a defensive weapon based on offensive capability. Nuclear deterrence deters since the use of such weapons are indefensible, and its destructive consequences are dramatic. What the atomic bomb represents, therefore, is a "defensive" militarily capability quite permissible

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36 Katzenstein, and Okawara, op. cit. p. 840.
37 Endicott, op. cit., p. 45.
under the present interpretation of Article IX.

The removal of the obstacle posed by Article IX would suggest that Japan's future nuclear status is not as fixed as some would previously have believed. Rather, Japan's nuclear status should be viewed as an political aversion that may change to reflect external conditions. Diffusion theory would further argue that cultural or constitutional obstacles can not prevent Japan from becoming a nuclear weapons state once its relative security is sufficiently threatened by a nuclear-armed power.

Japan's past political actions seem to reflect an apparent understanding that nuclear status may need to someday change. Concerns over future security were communicated, for instance, in the political discussions that surrounded Japan's entrance into the original NPT treaty. The actual ratification of the original NPT would follow in 1976. More recently, similar voices of resistance were made in internal debates concerning the support of an indefinite extension of the NPT beyond 1995. These apprehensions reflect the position that an indefinite extension of the NPT could "tie the hands of future governments in Tokyo if new security threats arise." The concern may also indicate misgivings over the over the reliability of forever conjoining Japanese national security with the

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39 Harrison, op. cit. p. 23. Please note: Japan did vote in favor of the indefinite expansion of the treaty.

40 Harrison, op. cit. p. 23.
American nuclear umbrella.

During the final years of the Cold War, there was definite public skepticism within Japan concerning the credibility of the American nuclear guarantee. For example, one public opinion poll in 1989 stated that over 47% "expressed little confidence in the U.S. nuclear umbrella." Where political and security relations may begin to wither, however, is over the effects of repeated trade conflicts.

During 1995, trade negotiations between the two states had collapsed and threats of sanctions were made against Japan. The indirect implication for national security is that perennial U.S. demands made "in the context of the bilateral trade conflict abet the proliferation of nationalistic sentiment... [against the United States]," and could eventually impinge upon the security relationship. Specifically, increasing weakness in the political relationship could force Japan to reconsider whether the U.S. is a reliable guarantor.

The degree of susceptibility and mitigation are the necessary conditions for determining whether Japan becomes a nuclear weapons-state. If the confidence in the American nuclear umbrella declines during a period in which Japan confronts a nuclear threat, nuclear status will be reconsidered. As such, Japan's non-nuclear status should not be thought of as fixed, since acquisition of nuclear weapons would

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41 Tow, op. cit., p. 103.


come in response to the demands emplaced by a new strategic environment. As Hisahiko Okazaki, the former Japanese ambassador to Thailand, stated, Japan would become a nuclear weapons state for the sake of national security:

"If Japan's survival were at stake ... because of a threat from the Russians, the North Koreans or the Chinese (Japan could build a strong military force for itself.) If Japan had to do everything (for its own defense) it would go nuclear. That would come from necessity, not from some revival of militarism."

What must not be presumed is that Japan is immune from the nuclear contagion because of cultural, historical, or constitutional reasons. Forty-five years of nuclear inhibitions can be best explained by American mitigation of Japan's external nuclear threats. However, as uncertainty and susceptibility escalates, and as the value of mitigation of plummets, the probability of nuclear diffusion increases. Simply put, the future of the American commitment, and the rise of the North Korean threat, may soon test Japan's post-Cold War nuclear inhibitions.

Japan's greatest post-Cold War fear is that "a unified Korea will go nuclear whether or not North Korea can be persuaded to give up its nuclear option." The fear over North Korea increased in June of 1993 when North Korea test-fired its

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44 Ibid.

most capable ballistic missile, the Rodong-1.\textsuperscript{46} The distress over North Korea's nuclear capability will continue in the future since the recent agreement made to stymie its nuclear weapons program did not remove the latent capability.

The agreement with North Korea will only replace a plutonium producing heavy-water reactor with a light-water facility. As a result, North Korea's latent weapons capability was not affected since the ability to exploit the weapons option is only complicated by replacing one reactor type with another.\textsuperscript{47} Japan must then confront a nuclear weapons-capable state that its own officials say it "can not trust."\textsuperscript{48} The final issue needing to be addressed is whether Japan can in fact go nuclear should it have to.

Japan is, without doubt, a latent nuclear weapons power. A British Defense Ministry report made public in 1994 stated that Japan has "all the elements necessary to build a nuclear bomb."\textsuperscript{49} Kazua Aichi, Japan's former Defense Minister, claimed in 1994 that Japan was quite capable of producing a nuclear weapon if it so chose.\textsuperscript{50} Furthermore, the previous review of Japan's civilian-related capabilities


\textsuperscript{47} For further clarification one can address the points made in chapter five concerning a civilian nuclear power capability and a nuclear weapons option.

\textsuperscript{48} Ibid.


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make it clear that a latent option is readily available for exploitation.®

China

The analysis of China begins with an emphasis upon its economic growth over the last decades. China's economic growth averaged 6.8 percent from 1965-1980.® From 1980 to 1990, yearly growth in GNP averaged 9.5 percent.® Expansion in the three sectors of the economy, primary, secondary, and tertiary, increased 10 percent in 1993.® This economic growth is important as it fueled both increased defense spending and military modernization.

China's defense spending increased by 20.6% since 1990 (See: Table 10). The 1994 defense budget is estimated anywhere from an official Chinese estimate of 5 billion (U.S. dollars) to the Pentagon's estimate of 40 billion.® The pursuit of military modernization, for example, led China to approve for 1995 a "15 percent

® The review of Japan's capabilities led to the conclusion that it was nuclear weapons-capable. This conclusion was based on the evidence that Japan has surpassed all the critical rungs in the phasal ladder. These capabilities included: plutonium-producing reactors; reprocessing capabilities; enrichment facilities; and SLV-launch vehicles.

® Waltz (1993), op. cit., p. 68.

® Ibid.

® Ibid.

increase in its defense budget."56 This sizeable military growth is also consistent with China's desire for regional power through greater military strength relative to its salient others.57

China's quest for military strength reflects a long-standing strategic goal "to successfully establish a national-military industrial base sufficiently formidable to neutralize potentially serious military threats posed to Beijing by the superpowers or by other regional actors."58 The specific strategy for dealing with all external threats changed in 1978, with the adoption of the "People's War Under Modern Conditions" (PWUMC), in which the post-Mao leadership sought to redress emerging disparities in capabilities between China and its various external threats.59 These external threats include: (1) a direct attack on the Chinese homeland; (2) strategic intimidation by the superpowers; and, (3) "potential threats" originating from regional actors.60 China's perception of the post-Cold War milieu is still one of the state being surrounded by numerous adversaries.  

Unfortunately, China's perception of its environment indicates concern over


58 Tow, op.cit. p. 195.

59 Ibid. p. 198.

60 Ibid. p. 198.
threats which exist in every geographic direction. Specifically, a hostile and nuclear-armed India is to the west; a nuclear-armed Russia is to the north; a latent nuclear-armed Taiwan and Japan are to the east; a nuclear-armed United States is to the far east; and a Vietnam is to the south. Perceptions of the milieu are also affected by past nuclear threats made by the U.S., and the presence of other nuclear-armed powers. Given this operating milieu, it seems reasonable why China would seek to use its newfound economic wealth to augment its nuclear and conventional capabilities.

China boldly made clear its desire to improve nuclear capabilities by conducting repeated international atomic tests in 1993, 1994, and 1995. The importance of atomic testing for China is that can assist in the qualitative improvement of nuclear arsenal. Nevertheless, China's nuclear actions endanger regional stability by alarming other states which view her as a salient other. Perceptions of China as a possible aggressor may have also been reaffirmed in 1995 by its seizure of a South China reef claimed by the Philippines.

China's recent actions could help skew other actors' perceptions, and may raise the susceptibility of a state that considers China as a salient other. The action

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62 A NWS-state would only conduct testing in a desire to improve the qualitative nature of its nuclear arsenal. Specifically, China may be actively pursuing a MIRV capability, or wishing to miniaturize its nuclear weapons arsenal.

63 Barr and Tefft, op. cit. p. 6.
against the Philippines further suggests that a regional waterway, the South China Sea, is already at risk to China's emerging ability to project military power. Moreover, the Philippine action could be perceived as China's desire to establish a territorial prerogative over disputed islands and possibly the region as a whole. Consequently, China's actions may be helping to promote the very conditions that will compel other states to subsequently "go nuclear."

**Taiwan**

The primary threat to Taiwan is the existential threat posed by a nuclear-armed China. The threat posed by China is that it has yet to rescind its claim over the islands of Taiwan. Deng Xiaoping, the national leader of China, claimed in the mid-1980s that the state would respond with military force should Taiwan attempt any of the following:

...If Taipei decided to build nuclear weapons; if Taipei claimed to be an independent state; if Taipei lost internal control...if Taipei continued to reject unification...

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64 The seizure of a Philippine-claimed reef serves to reaffirm concerns held by Vietnam, Indonesia, and Japan, that China is seeking to establish control over disputed islands and valuable waterways. As well, the timing of the action, in a period in which China is growing at unprecedented rate both militarily and economically, seems to communicate an added intention for greater regional prominence through force if necessary. Please see: Nayan Chanda, "Territorial Imperative," *Far Eastern Economic Review*. February 23, 1995. p. 14-16.

An instance of Chinese aggression is not without historical precedent. Hostilities erupted with mainland China in 1955 and 1957-58. During this time, Taiwan enjoyed a blanket of security provided by a mutual treaty with the United States. This security relationship contributed to two instances in which the "U.S. came very close to transforming nuclear deterrence into the actual combat use of nuclear weapons" against China. The formal security relationship ended in 1978, however, when President Carter chose to forsake diplomatic and security relations with Taiwan in order to encourage further relations with China. The removal of the American security blanket forced Taiwan to adopt an aggressive self-help posture since, as President Lee Teng-hui stated, the Chinese threat and Taiwan's geographic position make national security the "root of all prosperity...and if there is no security, there is nothing."

Self-help clearly encouraged Taiwan to reconsider its relative military power position in light of the Chinese threat. The evaluation by Taiwan led it to conclude that its military capabilities had approached obsolescence as of 1980. In response, Taiwan utilized American technological transfers, and large currency reserves, in

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66 Tow *op. cit.*, p. 63.


68 Hickey *op. cit.*, p. 107.

order to modernize and improve the military. The post-1980 emphasis on improving military capabilities led to the development and purchase of advanced fighter aircraft, anti-submarine helicopters, defense fighters, the PFG-2 missile frigate, and a variety of advanced surface-to-surface, air-to-air, and anti-ship missiles. Still, Taiwan's improved conventional capability may only provide a temporary defense against the more formidable Chinese capabilities. As a result, exploiting the latent nuclear weapons option could prove the final recourse should direct aggression by China seem imminent.

Taiwan's possession of a latent nuclear weapons option is already undeniable. Given the state's existential vulnerability, for example, diffusion theory assumes that Taiwan would choose to become a nuclear weapons state as it lacks a guarantor that could successfully mitigate the threat posed by China. Since inviting a Chinese attack is undesired, Taiwan is likely to remain an opaque nuclear power until an explicit threat against the state does arise.

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70 Ibid. p. 109.
71 Ibid. p. 109.
72 It was estimated in 1982 that even then a Taiwanese nuclear weapons option would be within three years, if it had not already achieved such a capability.
73 One recent book on the Chinese threat to Taiwan has suggested that a Chinese invasion is most likely between 1995-1997. During this time, national elections it is believed may tax Taiwan's ability to defend itself. Please See: Cheng Lang-ping, August 1995: China's Violent Invasion of Taiwan.
A Summary

An analysis of Northeast Asia suggest that even as the Cold War becomes part of history an equally dangerous regional structure of anarchy has begun to emerge. The region's expenditures and perceptions portray an image of actors that are concerned with security. Furthermore, a review of the milieu indicates that perceptions are sensitive to the implications of the actions of nuclear-armed salient others. Furthermore, these are salient others which in some cases, like within Korea and Taiwan, face a direct threat to the very existence of the state.

The perceptions of nuclear threat posed by both China and North Korea could lead to the dynamic in which nuclear diffusion infects certain actors, if not the entire region. Therefore, if preventing regional proliferation is a goal, it entails that the international community is willing to adopt specific policies designed to prevent the phenomena of nuclear diffusion.
Chapter 8: Prevention and Policy Options

Present nonproliferation policies are designed to hinder an initial and isolated act of proliferation instead of the dynamic of nuclear diffusion. The architects of these nonproliferation policies ignored why the act of proliferation results and the consequences that follow from proliferation. In making distinctions between the act and the consequence of proliferation, better policies should be able to be constructed to prevent the dynamic of nuclear diffusion.

Non-diffusion: Choices in Policy

Over the past decades, the United States, with some other nations and various international organizations, has taken the primary initiative to promote the norm of nonproliferation. Lawrence Scheinman, an advisor to the Atlantic Council Think Tank, stated, that “virtually every initiative towards this end - the Baruch Plan, Atoms for Peace, establishment of the International Atomic Energy Agency (IAEA), the Nonproliferation Treaty (NPT), the Nuclear Suppliers Group (NSG) - was the
consequence of U.S. initiative." Such nonproliferation policies, however, will not prevent the dynamic of nuclear diffusion.

Most of the current non-proliferation measures focus on supply-side controls. Specifically, the strategy is to limit the access to the essential means with which a state would construct a nuclear device. Yet, a supply-side strategy can, at best, only prolong the period in which it takes a NNWS-state to acquire a latent nuclear weapons option. For nonproliferation policies to be effective they must move away from the fixation on technological denial, and recognize that proliferation and nuclear diffusion is best prevented by mitigating the susceptibility a NNWS-state has to the nuclear contagion. Accordingly, three interdependent strategies are proposed to mitigate nuclear diffusion:

**The Strategies**

1. The Continuing Support for the Nonproliferation norm.
2. The Strengthening and Endorsement of Security Guarantees.
3. A Strategy of Promoting Regional Cooperation.

**Multilateral and Unilateral Instruments of Control**

The historical effort of nonproliferation has been to control the technical

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spread of nuclear weapons-making capabilities. Such supply-side controls have been the centerpiece of the nonproliferation regime. The regime, however, was ineffectual as it willfully permitted the proliferation of latent capabilities.

The spread of dual-use technologies limits the effectiveness that any supply-side strategy could have against proliferation. Realistically, a supply-side control can only complicate the path towards the nuclear option. A supply-side strategy would only prove effective, if all access was prevented to Rungs 1 through Rungs 5 along the phasal ladder. Nevertheless, while the regime may have failed to prevent a proliferation of capabilities, it does retain a symbolic importance.

The nonproliferation regime was intent on establishing and reinforcing an international norm against horizontal proliferation. The added goal of the regime, aside from technical denial, was to inhibit overt declarations by suspected second phase latent proliferants. The value of the overall norm, however, has suffered since it has been continuously subjugated by signatories and non-signatories. As a result, the normative order has itself been jeopardized:

What is important for a normative order, such as the non-proliferation regime...is how the community responds to violation. What will weaken or invalidate a normative order is failure by the community to respond to the violations by reaffirming the desirability of the norm.

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2 India’s 1973 "peaceful nuclear explosion" being the only tark exception.

Clearly, for many states, like the United States, "stopping the spread of nuclear weapons has had a priority... but in practice other interests have proved to be more pressing." For example, the strategic importance of Israel influenced successive American administrations to overlook a suspected Israeli nuclear arsenal. Following the Soviet invasion of Afghanistan, the United States re-established economic and military aid to Pakistan while choosing to disregard its suspected nuclear weapons program. Most recently, concerns voiced throughout the 1980's over the alleged Iraqi nuclear program were overshadowed by an interest to use her as a regional counterbalance to Iran. In addition, Canada, the former Soviet Union, Germany, China, Russia, and many others, provided critical aid that assisted, if not still assisting, non-nuclear states like India, Pakistan, South Africa, Iraq, Iran, in the development of a latent nuclear weapons option. Such deviations that contravene the normative tenets of the treaty seem to clearly suggest that the quality of the regime as a tool for nonproliferation is in question.

While the current regime has proven ineffectual in preventing latent proliferation, it did serve to prevent non-nuclear weapon states from openly declaring their weapons capability. While this accomplishment is not especially significant with respect to limiting the number of capable NNWS-states, the maintenance of a visual threshold between nuclear and non-nuclear status has at least tempered the security concerns that would arise should a former NNWS-state

\[5\] Waltz (1993) \textit{op. cit.}, p. 79.
openly declare its latent capability. Therefore, the recent support of an indefinite extension of the NPT past 1995 ensures that one international obstacle will remain against open horizontal proliferation.

The NPT regime should not be considered, however, as any real impediment or restraint against nuclear diffusion. A NNWS-state that is nuclear weapons capable will proliferate if and when it is strategically necessary for relative security. A regime could only prevent the dynamic nuclear diffusion if it was able to redress the fundamental role that nuclear threat has within proliferation and the diffusion process.

**Endorsement of Security Guarantees**

Fundamentally, the phenomena of nuclear diffusion is contingent upon the relationship between nuclear threat and national security. The act of proliferation is the response undertaken by a NNWS-state that desires "nuclear weapons... for security." Still, the inclination to proliferate can be mitigated. Put differently, a subsequent act of horizontal proliferation is preventable if a NNWS-state's national security is somehow ensured.

A NNWS-state can be prevented from becoming a NWS-state if it is willing to accept an extended security guarantee from another NWS-state. The

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5 Bailey, *op. cit.*, p. 87.
establishment of a credible extended security guarantee helps alleviate the explicit insecurity that is associated with nuclear threats. In the absence of the guarantee, the nuclear threat would have contributed to nuclear diffusion. As a result, an extension of formal security guarantees must be the pillar to any overall strategy that seeks to prevent future nuclear diffusion.

It is undeniable that a NNWS-state's "security concerns are more likely to be reduced by security guarantees extended by the U.S. and other nuclear weapons states." For the goal of nondiffusion, the strongest "means by which the United States can persuade a country to forgo nuclear weapons is a guarantee of security." Essentially, the nature of the nuclear threat suggests that the only credible assurances can "dampen the security concerns that ...fosters nuclear proliferation" and subsequent nuclear diffusion.

The intrinsic value of any extended guarantee is dependent upon the willingness, the capability, and the credibility, of the nuclear guarantor. Additionally, the imperiled NNWS-state must believe that the NWS-state is willing to deter any and all nuclear threats. The dilemma imposed by the extended deterrence-type security is that only five NWS-states exist to offer such guarantees.

Of the five NWS-states, only the United States continues to apply the nuclear

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6 Deutch, op. cit., p. 130.


8 Bailey, op. cit., p. 87.
umbrella over NNWS-states that do not formally comprise NATO. In contrast, the
deterrents of both Great Britain and France serve to compliment the nuclear
umbrella that is already offered to most of Western Europe by NATO and the United
States. In addition, it is unclear whether Russia continues to offer any nuclear
guarantee to any of its former client states or present allies. In comparison, China
has never vocalized whether its nuclear umbrella falls over any other NNWS-state.
Consequently, since many states fall outside the umbrella of a declared NWS-state,
each NNWS-state must fend for their security themselves when they confront an
explicit nuclear weapons threat. Even the protected states are not entirely
mitigated, however, as the nature of relations between guarantor and guarantee do
change.

The value of mitigation hinges on the credibility of the deterrent offered by the
nuclear guarantor. Such a security commitments can only proceed if and when it
is in the national interest of the nuclear guarantor. The danger for the guarantor is
that an extension of security invites risk. Should an extended deterrent be tested,
for example, it invokes the possibility that a NWS-state could expose itself to a
nuclear strike for the sake of another state. Given the possibility that deterrence
could fail and lead to nuclear attack, it is unlikely that a NWS-state will apply a
blanket deterrent over states which it does not consider critical to its vital national
interests. Put differently, most NWS-states are not willing to risk nuclear war or
conventional war in order to ensure the security of every non-nuclear weapon state.

In Northeast Asia, only a firm U.S. commitment to the security of both South
Korea and Japan is likely to prevent regional nuclear diffusion. The U.S. is unlikely, however, to replace the nuclear umbrella over Taiwan or over every other imperiled NNWS-state that is threatened by a nuclear-armed salient other. As a result, nuclear diffusion is likely in any area absent extended security guarantees and given a high degree of susceptibility between salient others.

**A More Radical Strategy to Impede Diffusion**

Policies which focus strictly on technical denial will most likely be ineffective. In addition, security guarantees could be insufficient or lack credibility. The final course of action suggested in light of the limitations of the previous two strategies is the need to encourage greater reapproachment among salient others. The goal of a strategy of regional reapproachment is to foster complex cooperative relations among all salient others. In other words, if exogenous nuclear threat does feed the diffusion dynamic, remove the perceptions of threat that feeds the dynamic.

The logic of the cooperative strategy is based on neo-functionalist thinking which holds that the prospect for interstate conflict is reduced among nations that share intricate and complex cooperative relations. The radical nature of the strategy is that it has never been recognized as an actual way of preventing proliferation or the dynamic of nuclear diffusion. Implementing this strategy may prove difficult because a region, like Northeast Asia, could prove resistant to measures that
encourage intra-regional cooperation.

Northeast Asia's overall relations remain both suspicious and tense. For example, North and South Korea began talks to denuclearize the Korean peninsula in 1991, but North Korea's recent nuclear actions complicate this possibility. Japan, a state dependent on foreign trade, exported less in 1989 in percentage terms with China, Korea, and Taiwan, then it had in 1935. The recent 1993 nuclear accord with North Korea was met with questions concerning its effectiveness as a nonproliferation measure and with respect to how much the three benefactors, Japan, South Korea, and the United States, "will have to pay under the...accord." A failure to cooperate may then make future nuclear diffusion within Northeast Asia almost unavoidable.

**A Closing Observation**

The future of nondiffusion-type strategies have yet to be defined. The success of any one of these three strategies is dependent upon the willingness and the ability of all states to cooperate towards the goal of nonproliferation. Realistically, it is unlikely that effective mitigation will succeed since susceptibility

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is not mitigated unless the insecurity of the imperiled is somehow ameliorated. Nuclear diffusion, therefore, may erupt because no one strategy succeeds unless it mitigates a NNWS-state's susceptibility to the nuclear contagion.
Chapter 9: A Concluding Statement

The phenomena of nuclear diffusion is born from an international and regional environment that is immersed and framed by the consequences of anarchy. The seeds of future nuclear diffusion are brought to fruition because the risks associated with anarchy serve to fuel the conditions that perpetuate susceptibility to infection by the nuclear contagion. This constancy of insecurity, which arises out of anarchy, combines with unmitigated external nuclear threat to encourage nuclear emulation and the phenomena of nuclear diffusion.

The manner in which the first five NNWS-states developed nuclear capabilities reinforced the assumptions of nuclear diffusion theory. The theory of diffusion was based on a simple assumption that an initial act of proliferation will beget a further act or acts of proliferation under certain extraneous conditions. The simplicity of this logic is beguiling, however.

Nuclear diffusion develops within a strategic context of exogenous and unmitigated nuclear threat. Insecurity acts as the breeding ground for susceptibility from which the nuclear contagion thereby infects certain NNWS-states. Of course, susceptibility and emulation are not certainties as imperiled NNWS-state can pursue options other than nuclear weapons. However, once the NNWS-state develops a
sense of inadequacy, it becomes extremely difficult to restore a preferable power balance that does not involve the act of proliferation.

The analysis of the first phase demonstrated that each subsequent act of proliferation was in response to prior acts of nuclear development. In each instance an initial nuclear stimuli was identified as driving subsequent acts of horizontal proliferation. As a result, five former NNWS-states were driven by their own susceptibility to become nuclear weapons states. In the second phase, however, the NPT regime forced an end to overt declarations and contributes to the present misperception that only five capable nuclear weapons states exist.

Currently, over 40 states have what is a latent nuclear weapons option. The number of latent nuclear weapons powers suggest that the chance for nuclear diffusion remains significant. Future nuclear diffusion depends on whether insecurity and nuclear threat shall immerse the operating environment of a nuclear weapons capable states. Within Northeast Asia, for instance, damaging suspicions and insecurities remain to serve susceptibility even in spite of the end of the Cold War.

What the previous regional analysis showed was that Northeast Asia seems surrounded by an air of general uncertainty that risks inciting nuclear diffusion. The risk of nuclear diffusion has only been prevented by the U.S. successfully mitigating the threats that Japan and South Korea have confronted. Options that mitigate a NNWS-state from proliferating, however, are finite in number and strategic value.

The imperiled, but capable, NNWS-states is not likely to prefer vulnerability as implies an acceptance of a threat that jeopardizes the very existence of the state. The
notion of free-riding on the nuclear arms of another is also a questionable option. How valuable can a deterrent be if the NNWS-state does not have a clear commitment by a NWS-state? The free-rider option is unattractive for a NNWS-state since it lacks the mitigating value of an extended deterrent. Still, as indicated by the actions of Britain, France, and China, even extended deterrence cannot always prevent the phenomena of nuclear diffusion. In fact, a weak extended deterrent may even facilitate nuclear diffusion. As such, the phenomena of diffusion may continue to plague the international system for as long as a sovereign-held nuclear weapons-based deterrents are needed to keep the nuclear peace.

Understanding proliferation as nuclear diffusion allows the analysis to predict the conditions that foster proliferation. Future analysis by experts in national security and strategic studies must recognize the relationship between external nuclear threat and subsequent acts of horizontal proliferation. Simply put, nuclear diffusion is a useful paradigm that captures the essential nature of horizontal nuclear weapons proliferation. Hopefully, the use of this theory will provide a direction for the sort of strategies necessary to arrest the tide of future nuclear diffusion.

Unfortunately, even with intent to stymie susceptibility, future nuclear diffusion may prove inevitable. As Professor Aaron Friedberg suggested, a single act of nuclear proliferation could lead to a tide proliferation or, in the parlance of this discussion, nuclear diffusion:

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1 Professor Friedberg does not directly refer to the concept of nuclear diffusion. However, his understanding of what could transpire within Northeast Asia mirrors nuclear
The nuclearization of Korea... could lead to a similar development in Japan, which might cause China to accelerate and expand its nuclear programs, which could then have an impact on defense policies of Taiwan, India (and through it, Pakistan) and Russia. All of this would influence the behavior of the United States. Similar shockwaves could also travel through the system in different directions (for example, from India to China to Japan to Korea).  

I predict that within next two decades Northeast Asia will witness the rise of at least one overt nuclear power. Specifically, either North Korea, South Korea, Japan, or Taiwan, will go nuclear. Personally, it is my contention that the most likely scenario is that Japan is the next member of the nuclear club. Increasing the likelihood of this outcome is that in a period of structural uncertainty a future American Administration, which is Japan's nuclear guarantor, may be unwilling to justify the cost of regional deployments and commitments in the absence of an overt global or regional threat against the United States. Hence, the primary mitigating force that prevented past nuclear diffusion is removed. Of course, how the United States may act within the Asian theater is unclear.

American Intelligence reports are beginning to focus on China as a global and regional threat. In 1995, "for the first time in decades, U.S. military and intelligence officials are beginning a cast a wary eye at China as a possible long-term rival, a future threat to American interests in Asia and the Pacific." If the United States does diffusion theory.

^ Ball, op. cit. p. 25.
withdraw from the region, or choose to downscale the nature of the regional commitment, each regional actor, especially South Korea and Japan, will have to re-evaluate their national security. This reappraisal could lead both of these states to develop a sovereign nuclear weapons deterrent. Should these events occur, however, the repercussions could extend far beyond Northeast Asia.

The future nuclear actions taken by a set of NNWS-states could set off a series of nuclear dominoes in which states around Northeast Asia, Southeast Asia, and beyond, may begin to re-evaluate their own non-nuclear status. My greatest fear is that the pace of nuclear diffusion, when it does begin, will be hard to contain within any one region since numerous NNWS-states possess a readily available latent nuclear weapons option. If such nuclear diffusion does transpire in the near future, the world could witness an unprecedented rise of five or ten additional nuclear-armed states.

In conclusion, author Bernard Brodie was initially cited for asking a simple profound question - "De quoi s'agit il - What is it all about?" With regards to the proliferation it is all about a NNWS-state's rethinking its relative security within an anarchic environment. As it is, nuclear diffusion is an unfortunate reflection of an international system in which nuclear force exists as the starkest reminder of weakness and of the cost that a NNWS-state could bear should conflict erupt. The ironic aspect of the phenomena is that it results because in the process of alleviating insecurities, a new NWS-state creates the conditions for additional proliferation. What is then

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undeniable is that the quest for nuclear peace begins with an act of proliferation. Horizontal proliferation leads to nuclear diffusion because in anarchy the security of the state is paramount. In other words, in the nuclear age, relative security begins and ends with the nuclear weapon.
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